

# **A Conceptual Framework for Municipal Decision Making In A Complex Context: The Hessequa Case**

by  
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## **DECLARATION**

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## ABSTRACT

Municipal decision makers have to realise their constitutional objectives within a volatile, unpredictable, complex and uncertain contextual environment. Decision-making processes based on a reductionist paradigm are inadequate to address the current complexity. The complexity paradigm is more appropriate to address complex decision issues in this context. Decision making should be based on a proper understanding of contextual complexity, municipal decision-making processes, and the adaptive capacity of the municipality.

Theories of systems and complexity, decision making, leadership, organisations, and governance inform the study. The qualitative, single-case case study is based on interview and focus group data, document searches, observations, and field notes. Decision-making practices from 2011 to 2021 were investigated. Multiple complementary perspectives are applied to study the internal and external municipal context at different levels of causality. Computer-assisted qualitative data analysis software, in combination with a manual process, was used to analyse transcribed data.

The study integrates important findings on the municipal context, decision-making processes, and the adaptive capacity of the municipality in a conceptual framework for decision making. Multiple perspectives reveal features of the municipal context that are not visible when only a single perspective is applied. Study findings confirm that the municipal context is indeed complex. Shortcomings of the contextual analysis that informs current municipal decision making are exposed. Suggestions for improvements are made.

The thematic analysis exposed critical sub-processes and structural aspects that influence decision making within the political arena of the municipality. Some processes may potentially be misused to manipulate decision making. Generally accepted myths that result in conservative decision making are identified.

A novel framework to evaluate the adaptive capacity of complex systems is devised and applied. This framework exposes strengths and weaknesses of the municipal adaptive capacity in terms of twelve dimensions at, and across three interrelated levels of causality. The adaptive capacity of the municipality co-determines its ability to implement its decisions.

A novel framework for municipal decision making is devised based on the empirical findings and literature review. This framework links ongoing environmental scanning and analysis, strategic foresight, strategy development and planning with municipal decision making. The framework addresses the need for collaboration and innovation to enhance adaptive capacity. It provides for adaptive spaces to enhance adaptive capacity. Feedback processes inform organisational learning and effective governance of decision processes. The framework matches decision strategies with the nature of contextualised decision issues in terms of the law of complexity. This law states that the complexity of any system must at least match the complexity of the issues that confront the system. Institutionalisation of the framework should address deficiencies of current decision processes. The framework may serve as a normative model for municipal decision making.

The key finding is that Hessequa municipality does not actively address complexity. Municipalities may benefit a lot if decision makers enrich their decisions through the application of a complexity perspective. Much public value may be added by taking proper care of complexity during decision processes. Currently decision making is hampered by a limited awareness and understanding of

complexity and a lack of resources and infrastructure to address it. Findings from this study primarily apply to Hessequa municipality but can be generalised and extended with care and caution to municipalities within similar contexts.

This study makes an important contribution to academic literature on municipal decision making in South Africa. First, it demonstrates how multiple complementary perspectives provide a rich contextual understanding of a complex system, such as a municipality, in its context. Second, it demonstrates how the application of a complexity perspective can reveal aspects of municipal decision making that a simple linear approach cannot uncover. Third, it proposes a novel framework for evaluating the adaptive capacity of a complex adaptive system, such as a municipality. Fourth, it demonstrates how a novel framework for municipal decision making not only captures much of the key information that is required for decision making but also serves as a resource to address the complexity that confronts a municipality. Application of both frameworks may have practical value for the municipality and public value for its residents.

## OPSOMMING

Munisipale besluitnemers moet hul grondwetlike oogmerke bereik binne 'n onstabiele, onvoorspelbare, komplekse en onsekere kontekstuele omgewing. Besluitnemingsprosesse wat gebaseer is op 'n reduksionistiese paradigma is ontoereikend om hedendaagse kompleksiteit te adresseer. 'n Kompleksiteitsparadigma is meer geskik om komplekse besluitnemingskwessies in hierdie konteks te hanteer. Besluitneming behoort gebaseer te word op 'n behoorlike begrip van kontekstuele kompleksiteit, munisipale besluitnemingsprosesse, en die vermoë van die munisipaliteit om aan te pas.

Die studie is gebaseer op teorieë van stelsels, kompleksiteit, besluitneming, leierskap, organisasie en regering. Hierdie enkelvoudige, kwalitatiewe gevallestudie is gebaseer op data uit onderhoude en fokusgroepe, dokument soektogte, waarnemings en veldwerknote. Besluitnemingspraktyke van 2011 tot 2021 is ondersoek. Verskeie aanvullende perspektiewe is gebruik om die interne en eksterne munisipale konteks te bestudeer op verskillende vlakke van oorsaaklikheid. Rekenaargesteunde kwalitatiewe data-analisesagteware in kombinasie met 'n handproses is gebruik om transkripsies inductief te ontleed.

Die studie integreer belangrike bevindings in verband met die munisipale konteks, besluitnemingsprosesse en die aanpasbaarheidsvermoë van die munisipaliteit in 'n konsepuele raamwerk vir besluitneming. Veelvoudige perspektiewe het eienskappe van die munisipale konteks blootgelê wat nie bekend sou wees indien 'n enkele perspektief gebruik is nie. Bevindings uit die studie bevestig dat die munisipale konteks inderdaad kompleks is. Tekortkomings van die kontekstuele analise waarop munisipale besluitneming tans berus, is ontbloot. Voorstelle vir verbeterings word gemaak.

Die inductiewe tematiese analise het kritiese sekondêre prosesse en strukturele aspekte ontbloot wat besluite in die politieke arena van die munisipaliteit beïnvloed. Sommige prosesse mag moontlik misbruik word om besluitneming te manipuleer. Algemeen aanvaarde mites wat aanleiding gee tot konserwatiewe besluitneming, is geïdentifiseer.

'n Nuwe raamwerk is ontwikkel en toegepas om die aanpasbaarheidsvermoë van komplekse stelsels te bepaal. Hierdie raamwerk het die sterk en swak punte van die aanpasbaarheid van die munisipaliteit in twaalf dimensies en in drie interaktiewe vlakke van oorsaaklikheid uitgewys. Die vermoë van die munisipaliteit om aan te pas, bepaal gedeeltelik die vermoë daarvan om sy besluite te implementeer.

'n Nuwe raamwerk vir munisipale besluitneming, gebaseer op die empiriese bevindings en literatuuroorsig is ontwikkel. Hierdie raamwerk integreer deurlopende omgewingsverkenning en -analise, strategiese vooruitskouing, en strategie-ontwikkeling en beplanning met munisipale besluitneming. Die raamwerk maak voorsiening vir samewerking en innovasie om aanpasbaarheidsvermoë te verbeter. Dit skep ook kreatiewe ruimtes om aanpasbaarheid te bevorder, en terugvoerlusse wat organisasieel en effektiewe bestuur van besluitnemingsprosesse ondersteun. Die raamwerk stel besluitnemingstrategieë voor wat geskik is om gekontekstualiseerde besluitnemingskwessies aan te spreek ingevolge die wet van kompleksiteit. Volgens hierdie wet moet die kompleksiteit van enige stelsel minstens gelyk wees aan die kompleksiteit van die kwessies waardeur die stelsel gekonfronteer word. Institutionaliserings van die raamwerk behoort tekortkomings van bestaande besluitnemingsprosesse aan te spreek. Die raamwerk kan dien as 'n normatiewe model vir munisipale besluitneming.

Die belangrike bevinding is dat Hessequa munisipaliteit nie kompleksiteit adresseer nie. Munisipaliteite kan baie voordeel ontsluit indien besluitnemers hul besluite verryk met 'n kompleksiteitsperspektief. Baie publieke waarde kan toegevoeg word indien werk gemaak word van kompleksiteit tydens besluitnemingsprosesse. Besluitneming word tans gekortwiek deur 'n beperkte bewustheid en begrip van kompleksiteit en 'n gebrek aan hulpbronne en infrastruktuur om dit aan te spreek. Bevindings van hierdie studie is primêr op Hessequa munisipaliteit van toepassing, maar dit kan met sorg en omsigtigheid veralgemeen en uitgebrei word na munisipaliteite binne soortgelyke kontekste.

Die studie maak 'n belangrike bydrae tot akademiese literatuur oor munisipale besluitneming in Suid-Afrika. Eerstens demonstreer dit hoe veelvoudige komplementêre perspektiewe 'n dieper kontekstuele begrip van 'n komplekse stelsel soos 'n munisipaliteit binne sy konteks kan bied. Tweedens demonstreer dit hoe die toepassing van 'n kompleksiteitsperspektief aspekte van munisipale besluitneming kan blootlê wat 'n eenvoudige lineêre benadering nie kan doen nie. Derdens word 'n nuwe raamwerk voorgestel om die aanpasbaarheidsvermoë van 'n komplekse aanpasbare stelsel soos 'n munisipaliteit te evalueer. Vierdens demonstreer dit hoe 'n nuwe raamwerk vir besluitneming nie slegs verseker dat die belangrike inligting vir besluitneming ingesamel word nie, maar dit dien ook as 'n hulpbron om die kompleksiteit waarmee die munisipaliteit te doen het aan te spreek. Toepassing van beide raamwerke mag praktiese waarde vir die munisipaliteit hê, asook publieke waarde vir die inwoners.

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## LIST OF ABBREVIATIONS

4IR	Fourth Industrial Revolution
ABM	agent-based modelling
AG	Auditor-General
AI	artificial intelligence
AIDS	Acquired Immune Deficiency Syndrome
ANC	African National Congress
BER	Bureau of Economic Research
BRICS	Brazil, Russia, India, China, South Africa
CAQDAS	Computer-assisted qualitative data analysis
CAS	complex adaptive system
CFO	Chief Financial Officer
CLA	Causal Layered Analysis
CLT	complexity leadership theory
COGTA	Department of Cooperative Governance and Traditional Affairs
Covid-19	Corona virus disease 2019
CPI	consumer price index
DA	Democratic Alliance
DOEA	Department of Environmental Affairs
DTI	Department of Trade and Industry
DWAF	Department of Water Affairs and Forestry
EMC	Executive Mayoral Committee
EOD	Earth Overshoot Day
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FF+	Freedom Front Plus
GCBR	Gouritz Cluster Biosphere Reserve
GDP	gross domestic product

GGA	Good Governance Africa
GHG	greenhouse gas
GRAP	Generally Recognised Accounting Practice
HDI	Human Development Index
HIH	Hessequa Innovation Helix
HIV	Human Immunodeficiency Virus
ICT	information and communication technology
IDP	Integrated Development Plan
IEC	Independent Electoral Commission of South Africa
IFAD	International Fund for Agricultural Development
IMD	International Institute for Management Development
IoT	internet of things
IPAP	Industrial Policy Action Plan
IPCC	Intergovernmental Panel for Climate Change
IRR	Institute of Race Relations
KM	knowledge management
KPA	key performance area
KPI	key performance indicator
LED	Local Economic Development
LGTAS	Local Government Turnaround Strategy
LTFT	long-term financial plan
LTGR	Limits to Growth Report
MDG	Millennium Development Goal
MEC	Mayoral Executive Committee
MEI	material, energy, information
MFMA	Local Government: Municipal Finance Management Act 56 of 2003
MGM	market governance model
MIG	municipal infrastructure grant
MOOC	massive open online course



MSA	Local Government: Municipal Systems Act 32 of 2000
MW	megawatt
NDM	naturalistic decision making
NDP	National Development Plan
NEPAD	New Partnership for Africa's Development
NERSA	National Energy Regulator of South Africa
NGM	network governance model
NPM	new public management
NPC	National Planning Commission
NRC	National Research Council
NWSF	National Water Security Framework
OL	organisational learning
PESTLE	political, economic, social, technological, legislative, environmental
PFMA	Public Finance Management Act 10 of 2009
RSA	Republic of South Africa
SA	South Africa
SA AG	South African Auditor-General
SACP	South African Communist Party
SADC	Southern African Development Community
SALGA	South African Local Government Association
SDBIP	Service Delivery and Budget Implementation Plan
SDG	Sustainable Development Goals
SES	socio-ecological systems
SGGF	Stellenbosch Good Governance Forum
SNA	social network analysis
SONA	State of the Nation Address
SPCA	Society for the Prevention of Cruelty to Animals
SSA	sub-Saharan Africa
Stats SA	Statistics South Africa

SU	Stellenbosch University
SWOT	strong points, weak points, opportunities, threats
TAS	turnaround strategy
TOE	theory of everything
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
US	United States
US\$	United States Dollar
VF+	Vryheidsfront Plus (Freedom Front Plus)
VUCA	volatile, uncertain, complex, ambiguous
WEF	World Economic Forum
WFP	World Food Programme
WHO	World Health Organization

# CHAPTER 1 INTRODUCTION AND ORIENTATION

## 1.1 Background

Local government is everyone's business.

(COGTA, 2009a:3).

A total of 257 local governance entities, also called municipalities, affect the well-being of around 60 million South African citizens, daily and directly, through their decision-making processes (Main, 2020:12). Municipalities are established in terms of the Constitution of the Republic of South Africa (RSA, 1996) as the third sphere of governance within a cooperative governance framework. As co-creators of the futures of local communities municipalities have the constitutional right and obligation to govern the local government affairs of their communities in such a way that the objects of local government are realised (Van der Waldt, 2007:2).

Municipalities interact in multiple dimensions with a global environment that is characterised by volatility, uncertainty, complexity, and ambiguity (VUCA) (McCloskey, 2014:4-23). Because of global connectivity and globalisation, local government is affected by local drivers of change originating from this turbulent external environment. Conversely, connectivity also allows for "globalisation in reverse" that refers to the impact that local entities may have globally (Friedman, 2006:480). Not only connectivity forming part of globalisation but also climate change, technological development, demographic trends, and numerous other drivers of change, contribute to the emergence of complexity (Roux & Haldenwang, 2016).

Municipalities operate in a South African context that is currently characterised by widespread corruption, crime, underperforming governance at all levels of government, a weak economy, poverty, unemployment and inequality, and an incapable state (Plaut & Holden, 2012; Schwella, 2015; Basson & Du Toit, 2017; Jonas, 2019). According to recent reports by the South African Auditor-General (AG), research institutions and journalists, local governance in South Africa (SA), in general, is in a very bad condition (Plaut & Holden, 2012; Claassen & Kocks, 2020; AG, 2020a; 2020b; 2021; Ryan, 2022).

The researcher observed that the sophistication of both decisions and decision-making practices in all three spheres of government seldomly reflected an appreciation of their contextual complexity. Current and recent revisions of the Integrated Development Plan (IDP) of the Hessequa municipality do not reflect the complexity of the municipal context as stated in the White Paper on Local Government (RSA, 1998a). The White Paper defines the "context of complexity" within which "developmental municipalities" function:

The local area is not an island unto itself, a closed society. Rather, local areas are increasingly part of a web of social, economic and political transactions that transcend their boundaries. The actions of a wide range of civil and corporate players impact on the local economy and society. Resources and capacity are dispersed across different sectors and deployed for a variety of purposes. (p. 66)

Recognising the complexity of the municipal context, the White Paper emphasises the importance of institutional capacity to deal with this complexity. It assumes that poor performance is co-produced by ineffective decision-making.

Complexity, which will be discussed in Chapter 3 of this dissertation, permeates both the external and internal environment of local government. In terms of the Local Government: Municipal Systems Act 32 of 2000 (MSA), the internal environment contains the political structures, the administration, and the communities within the municipality (RSA, 2000). Internal complexity is an emergent property of the rich and dynamic interaction among the

numerous and interconnected diverse role players, each with “a multiplicity of I-positions in the landscape of the mind” (Van Loon & Van Dijk, 2015:66); each with “a multiplicity of identities, a multiplicity of personalities in the self” (Morin, 2008:38). Each person “is a vast universe, a cosmos of the unconscious [sic], and this is hidden from us” (Michael, 1977:92). Interaction among people and entities across the radically open (and fuzzy) boundaries of the municipality contributes to the complexity that local government has to deal with.

Within this highly interconnected internal and external context, municipalities have to realise their objectives as set out in the Constitution (RSA, 1996), and as confirmed in both the White Paper on Local Government (RSA, 1998a) and the NDP (NPC, 2012). Municipalities therefore have to make decisions about contextual issues that are “transnational in nature and transinstitutional in solution” (Glenn *et al.*, 2008:11). Both the decision makers within a municipality and the municipal institutions are often not equipped to deal effectively with the entire spectrum of diverse decision-making issues confronting them. The nature of these issues ranges from very simple and orderly to extremely disorderly (Geyer & Rihani, 2010:29).

Even though local governance actors realise that their domain is ‘complex’, the legislated decision-making processes of government still follow a linear, reductionist, and deterministic approach. Determinism is reflected in the assumption that an order given at the top (the cause) leads to implementation (the effect) as intended at the bottom of the hierarchy. Linearity is implied in the assumption that a proportional relation exists between an order and its implementation (Morçöl, 2012:158). However, empirical observations indicate that governance systems are often “in states of change which make them difficult to analyze, let alone manage” (Rihani, 2002:235; Teisman *et al.*, 2009:2). Indeed, stable governance systems are rare phenomena, especially in the present SA.

Traditional and conventional decision-making processes employed by municipalities are no longer adequate to deal with issues and challenges defined as “wicked” (Rittel & Webber, 1973:155-169), adaptive (Heifetz & Laurie, 1997) or complex (Rihani, 2002; Teisman *et al.*, 2009; Geyer & Rihani, 2010; Rhodes *et al.*, 2011). These authors agree that a new paradigm is required to address complexity in an evolving and adapting context. Reductionist methods are ineffective in complex situations. Conscious complex systems respond better to “light-touch styles of management based on constant monitoring of overall patterns of performance coupled with judicious small-scale incremental adjustments” (Geyer & Rihani, 2010:51).

New mental frameworks, paradigms, and metaphors are required to deal with the complexity of the current reality that has emerged from an earlier stable world order (Heylighen *et al.*, 2007:117-134; Room, 2011:289; McCloskey, 2014). The machine and the clockwork metaphors described this ‘simple view’ of the world (Rosen, 1991:20; Morgan, 2006; Fernández *et al.*, 2007:171-181; Strand, 2007:198-200;).

During the last decades, a complexity paradigm, with an expanded explanatory capacity, has emerged to deal with the ambiguity, contradiction, fluidity, lack of precision, and unpredictability of the current reality (Fernández *et al.*, 2007:175-187; Schlindwein & Ison, 2007:237; Snowden & Boone, 2007). Scholars in the domain of public policy have been evaluating the use of complexity theory to increase their understanding of complex governance systems (Teisman *et al.*, 2009; Geyer & Rihani, 2010; Innes & Booher, 2010). During the past decade, academic interest in complexity theory and its application within the domains of public management and governance institutions have “grown and matured” (Eppel & Rhodes, 2017). The use of complexity theory in public management has transcended the limitations of Newtonian theories and has been applied very effectively as a new framework to effect change in government and in management practices (Innes & Booher, 2010; Maguire *et al.*, 2011).

Although an abundance of literature is available on complexity theory and on decision-making theory, literature searches indicate a large gap in publications on municipal decision making

from a complexity perspective in the SA context. A few scholars have addressed specific aspects of complexity and municipal decision making (e.g., Van der Waladt, 2011; Weaver *et al.*, 2017). In fact, no academic literature was found that addresses complexity and municipal decision making in the SA context in depth. International studies about complexity theory and decision making at local governance level are more readily available (e.g., Rhodes *et al.*, 2011; Kvilvang *et al.*, 2020). However, most studies are focused on very detailed and specific applications of complexity theory, contextual variables, decision theory and governance. This study takes a broader view.

This dissertation builds on the value contributions of these and other scholars, the literature referenced, and on the empirical findings. A conceptual framework for decision making for a local municipality is proposed that would be capable to identify and to address the municipality's adaptive and complex challenges within a dynamic and unpredictable context. The complexity framework transcends the current linear decision-making approach and considers the influence of the contexts involved, the decision processes involved, and the adaptive capacity of the decision-making entity and the decision makers. The framework should enhance the capacity of the Hessequa municipality to deal effectively and efficiently with a spectrum of decision issues that ranges from simple to very complex.

## **1.2 Objectives of this chapter**

Chapter 1 provides the background for the study and establishes a structure and a framework for its execution. The motivation, relevance, and the limitations of the study are discussed before the research problem, the research questions, and the corresponding research goals and objectives are formulated. An overview of the research design and the key assumptions underlying the study are provided. The position of the researcher in the study is also considered. The chapter concludes with a summary of the dissertation structure. The motivation for the study is provided next.

## **1.3 Motivation for the study**

The motivation for this study is based on three considerations: (i) the opportunity to address gaps in academic literature on municipal decision making in SA, (ii) the opportunity to enhance municipal decision-making in practical ways, and (iii) several personal motivational factors.

Academic literature that links complexity, governance models, leadership styles, and contextual variables to municipal decision making in SA is rather limited. Local authors only address some of these aspects in relation to municipal decision making within the SA context (Van der Waladt, 2011; Davids & Theron, 2014; Schwella, 2015). However, no academic literature has been found that provides a comprehensive perspective on municipal decision making in a complex SA context. International academic literature on municipal decision making that employs a complexity framework is often very focused on specific municipal decision issues in a foreign context that differs from the local context (Kurth *et al.*, 2017; Soltani *et al.*, 2017; Wester, 2022).

This study will be used to add some breadth and depth to current academic knowledge on municipal decision making within the bigger SA context. The study applies a complexity perspective to address gaps in the literature on the framing or sense-making of contextualised municipal decision issues, the analysis of the contextual environment, and the evaluation of the adaptive capacity of a municipality within a complex context. A novel framework to evaluate the adaptive capacity of a municipality is devised and applied. The application of multiple complementary perspectives to the municipal contextual environment is demonstrated.

The researcher's dissatisfaction with some municipal decisions triggered an altruistic motivation to contribute practical tools and resources that may enhance municipal decision making. By helping to fill the gap in the academic literature, practical resources would

be developed that may contribute to municipal decision-making capacity. Weaknesses of current municipal decision processes observed by the researcher would also be addressed.

Personal motivational factors included the researchers' need for self-development by 'going through the mill' of doing advanced academic research. Curiosity and a desire to develop a better qualitative understanding of decision making, complexity, and the role of local government in society, were additional motivations. The expectation that the results of this study might also benefit other municipalities served as an additional motivator.

#### 1.4 Relevance of the study

The application of decision-making theory and complexity theory to current municipal decision-making practices should contribute (i) academic value, (ii) practical value, and (iii) social value.

The **academic relevance** of this research refers primarily to the contribution of new knowledge on municipal decision-making practices in a complex context. Nutt and Wilson (2010:20) refer to the 'questionable relevance' of decision-making research due to changing conditions caused by globalisation, the role of technological innovation, deregulation, re-regulation, recession, and competition within a knowledge-based economy. According to these authors, decision-making theory and empirical research say little about these contextual changes and their impact on decision making. One of the aims of this research is to address this specific concern within an SA municipal context. Two novel frameworks will be developed. The framework to evaluate adaptive capacity will enhance current frameworks by categorising the dimensions of adaptive capacity into three different layers of causality. The conceptual framework for municipal decision making will be novel in the sense that it will frame the decision-making process at strategic, tactical, and operational level. Contributions to academic literature normally precede the practical application of new knowledge and understanding.

The **practical relevance** of this study is linked to the eventual full implementation of the conceptual frameworks for decision-making and adaptive capacity. This will provide decision makers with a much better understanding of the interaction between a municipality and its environment over a planning horizon that extends beyond five years. A better understanding of the evolution of possible, plausible, and desired futures over time will enable the municipal council to develop more robust IDPs. A more advanced IDP is likely to inform a more relevant performance management system, better budgets, and more sophisticated risk management strategies. All these factors should inform better day-to-day decision-making.

Application of the adaptive capacity framework should reveal weaknesses and strengths relating to the adaptive capacity of the municipality. An improved understanding of complexity and the application of appropriate decision frameworks should assist municipalities "to increase their prospect of being successful when making a decision" (Nutt & Wilson, 2010:645-646). Improved decision-making and enhanced adaptive capacity should lead to good and agile governance, governance capacity, leadership, and management.

It could thus be argued that the practical relevance of this study is linked directly to the composite concept of "good governance" (Davids & Theron, 2014; Schwella, 2015:26-30), and "governance capacity" (Innes & Booher, 2003). Innes and Booher (2003) define governance capacity as the capacity of governance systems to deal effectively and satisfactorily with complex problems through adaptation, collaboration, and learning. The White Paper on Local Government in South Africa (RSA, 1998a:66) emphasises the importance of governance capacity and advises specifically that "local political leaders can actively strengthen their ability to make policy judgements through deepening their understanding of the dynamics in the local area, anticipating changes and learning from past practice." This study aims to contribute directly to the important notion of capacity building as emphasised in the White Paper.

An improved understanding of decision making, and the phenomenon of complexity is extremely pertinent within the domain of leadership and management as argued by Grint (2005), Snowden and Boone (2007) and Heifetz *et al.* (2009). These authors illustrate that the concepts of leadership, management, and decision making within complex and disorderly contexts are indeed highly interrelated. They unanimously argue for a proper contextual analysis of a decision situation as an essential prerequisite for effective decision making, and thus for leadership and management.

The **social relevance** of the research refers to the expectation that improved decision making should benefit the residents of the Hessequa municipality and SA. However, it is appropriate to be modest about all claims made in terms of research findings as all knowledge is partial, provisional, and limited (Buijs, Eshuis *et al.*, 2009:50).

## 1.5 Limitations of the study

Several limitations and delimitations of this study are noted below.

### 1.5.1 Limitations

The limitations of this study include several constraints that are beyond the control of the researcher (Enslin, 2014:275). President JF Kennedy aptly remarked that “the essence of ultimate decision remains impenetrable to the observer – often, indeed, to the decider himself” (Sorensen, 1963:xxix) and then added: “There will always be the dark and tangled stretches in the decision-making process – mysterious even to those who may be most intimately involved” (Sorensen, 1963:xxxi). These remarks apply to this study as well. Most of the invisible interior, intentional worlds of the individual decision makers and the invisible interior cultural worlds of the collective, will not be exposed by this study (Wilber, 1996).

Decision-making within the third sphere of government is primarily a political affair. The deeper motives of any one party are often unknown to non-party members. Role players and actors involved in municipal decision making change continually, and thus also the motives, competencies and strategies of the individuals and parties involved. Rihani (2002) refers to the influence of “elites” and “hierarchies” in decision processes.

Because of budget and time constraints only a single-case case study could be conducted.

Morçöl (2012:263) warns that “the contextual and limited nature of the knowledge of complex systems denies the possibility of the ultimate goal of science: making universal generalizations about empirical observations”. Although complexity theory emphasises the limitations of the generalisations that can be made about complex phenomena, it does allow for the observation of general patterns of behaviour of complex systems. Realising that knowledge to be gained about the behaviour of complex contextual decision-making systems can only be partial and provisional, the focus of this study is on those aspects of municipal decision making that can be studied and known in terms of this research design.

### 1.5.2 Delimitations

Since the title of this dissertation “provides much too broad a canvas to be painted on in a reasonable time” (Simon, 1997:299), the scope of this study has to be limited and defined. Important delimitations of the research are documented throughout the text and relate to the choices made in defining the scope and borders of the study, the research design and research methods. This study addresses the challenge of decision-making within the third sphere of government: local government. This is a qualitative case study of the Hessequa municipality under current legislation and contextual conditions. The study focuses primarily on the roles of councillors and municipal officials in decision making (RSA, 2000).

Most of the literature consulted, originated in the English-speaking Western World and excluded material from the eastern hemisphere and the rest of Africa. The temporal focus of the study was limited to two governance terms of five years each, covering the period from 2011 until 2021. The focus was on information-rich decisions of which the information was available to the researcher.

The limitations and delimitations of this study co-defined the framework within which the research problem was defined and addressed.

## **1.6 The research problem statement**

An initial formulation of the problem statement focused on the poor performance of municipalities in general. As the study progressed a new formulation evolved that focused on factors that contributed to the oversimplification of municipal decision making in a complex context. The research problem was reformulated for the Hessequa municipality as follows:

Municipal decision makers do not formally take care of the phenomenon of complexity. Decision making is primarily based on a reductionist understanding of the contextual challenges facing the municipality. Complexity is not specifically addressed in either the strategic planning activities of the municipality or in the IDP. Decision makers may not have the cognitive aptitude, skills, and resources to identify and characterise complex decision issues or systems, and they may not have appropriate strategies to address complex issues.

This situation is made worse by the limited availability of academic literature that specifically addresses the challenge of complexity and municipal decision making in the SA context. The few sources identified during the literature review are referenced in this text. Literature about municipal decision making in complex foreign contexts, however, is abundant. The researcher's evaluation of numerous media reports about municipal decisions and decision making suggests that inappropriate and oversimplified decision-making practices dominate in this domain.

The continuation of the deteriorating performance of SA municipalities as reported by the AG indicates that municipalities may not have the adaptive capacity to govern in a complex environment. The literature review identified no literature that specifically addresses the evaluation of the adaptive capacity of SA municipalities.

The problem statement was reformulated more specifically in the following way:

- Municipal decision makers do not analyse the nature of the municipal context from a complexity perspective.
- Municipal decision makers may not have access to resources and frameworks that may guide decision making in a complex context.
- Municipalities lack a mechanism to evaluate their own adaptive capacity.

The research problem statement informed the following research questions.

## **1.7 Research questions**

The main research question:

What are the features of a conceptual framework that may enhance the capacity of municipal decision makers to deal with complexity at the Hessequa municipality?

To address the main research question, the following sub-questions have been formulated:



Research sub-question 1: What are the main features of the context within which the municipality takes decisions?

Research sub-question 2: How does the municipality take decisions under conditions of complexity?

Research sub-question 3: What are the strengths and weaknesses of the adaptive capacity of the municipality?

Research sub-question 4: What are the features of a conceptual framework that could enhance the capacity of the municipality to take decisions under conditions of complexity?

Both the problem statement and the research questions presume aspects of a thesis regarding a way to address the challenge of effective contextual municipal decision making. The research sub-questions focus on four interrelated themes, namely the municipal *context*, actual decision-making *processes*, *adaptive capacity* of the municipality, and a *framework* to facilitate decision making.

The relationship between the four research sub-questions and the main research question can be explained in two ways (Andrews, 2003). First, as *subsidiary* questions, each of the four sub-questions investigates a particular aspect of the main question in order to contribute to answering the main question. Second, as *contributory* questions, the first three sub-questions contribute towards addressing the last sub-question regarding a suitable framework for municipal decision making. The research goal and objectives were derived from the research questions.

## 1.8 Research goal and objectives

The research goal was linked directly to Section 160 of the Constitution (RSA, 1996), which asserts that a municipal council “makes decisions concerning the exercise of all the powers and the performance of all the functions of the municipality”. The study aims to improve the decision-making capacity of a municipality within a complex context that is “rapidly becoming more complex” (RSA, 1998a:42). The aim of this case study is, first, to “explore, understand and describe and not to explain” the phenomenon of decision-making (Strydom & Bezuidenhout, 2014:174), and second, to devise a conceptual framework that decision makers can apply to deal with complexity.

The primary goal of this study was to devise a conceptual framework, that, when applied, could significantly enhance the capacity of decision makers at the municipality to deal with the phenomenon of complexity. In the ideal case, a few factors or “lever points” may be identified, namely, points where a simple intervention causes a lasting, directed, and desired effect (Holland, 2006:1-8; Meadows, 2008:145). Pragmatism, as a qualitative inquiry framework, will be used in this study “to seek practical and useful answers that can solve, or at least provide direction in addressing, concrete problems” (Patton, 2015:152). The resulting framework should be a practical and useful resource.

The following research objectives correspond to the four research sub-questions:

Research objective 1: To provide an overview of the main features of the internal and external context within which the municipality takes decisions.

Research objective 2: To develop an understanding of the current and recent decision-making processes and practices of the municipality from a complexity perspective.

Research objective 3: To identify the strengths and weaknesses of the municipal adaptive capacity.

Research objective 4: To devise a conceptual framework for municipal decision making that considers the context, decision-making processes, and the adaptive capacity of the municipality.

These objectives are interlinked and are pursued in four corresponding chapters in this dissertation. The study objectives are aligned with the aim to develop governance capacity as stated in the White Paper on Local Government (RSA, 1998a) and as defined by Innes and Booher (2003), namely “the capacity of governance systems to deal effectively and satisfactorily with complex problems”.

The research strategy and research design that were employed to achieve the above research objectives are discussed next.

## **1.9 Research strategy, research design, and research methods**

The purpose of this overview of the research strategy and the associated research design and methods is to demonstrate their coherence. A coherent research framework contributes to the internal validity and overall trustworthiness of a study (Strydom & Bezuidenhout, 2014:175).

### **1.9.1 Research strategy**

A qualitative research strategy is followed in order to develop a rich and descriptive contextual understanding of municipal decision making under conditions of complexity. In addition, a qualitative approach would reveal the perspectives of respondents and their worldviews (Harding, 2019:105). Although a mixed methods approach would provide additional insights it was decided to limit the scope of this research project to a qualitative, descriptive study.

A qualitative research strategy makes provision for a case study research design for a single case (Bryman, 2012:66; Yin, 2014). In terms of Morçöl's three-level taxonomy of the methods of complexity research, a case study design is positioned at the micro-macro level (Morçöl, 2012:197) which is situated between the system level and the level of system elements or actors.

A qualitative approach provides perspectives and insights on aspects of the decision-making process that would be difficult or impossible to express quantitatively. A qualitative strategy is preferred to a quantitative strategy as “quantification necessarily strips off some of the contextual information” that may be of interest and relevance for this study (Morçöl, 2012:244). Rank (2004:92) argues that the “strength of qualitative data lies in its richness and depth [that allow] researchers to come to a deep understanding of a particular research topic”. Creswell (2004:22) shares this view, stating that when a phenomenon needs to be understood, then it merits a qualitative approach. Another advantage of a qualitative approach, according to Patton (2002:60), is that “greater attention can be given to nuance, setting, interdependencies, complexities, idiosyncrasies, and context”. Patton adds that qualitative studies are particularly appropriate to develop an understanding of processes (including decision-making processes). Qualitative studies can be utilised very effectively to capture human interaction, experiences, perceptions, and process dynamics (Patton, 2002:159).

A qualitative research strategy “predominantly emphasizes an inductive approach to the relationship between theory and research ... [but] can also be employed for testing them” in a deductive fashion (Bryman, 2012:36-37). The mode of qualitative reasoning in this text follows both an inductive and a deductive approach (Mouton, 2001:151), that is an abductive approach. An abductive approach to study complex phenomena combines an inductive and a deductive approach (Dubois & Gadde, 2002:554; Haig, 2010:77-82; Järvensivu & Törnroos, 2010:102; Bazeley, 2013:336).

The epistemological orientation of a qualitative research strategy favours interpretivism as the dominant research tradition. Interpretivism, which requires the researcher to “grasp the subjective meaning of social action” (Bryman, 2012:712), is believed to be an appropriate paradigm to deal with the highly symbolic and constructed reality created by humans in their fluid and complex contexts (Bryman, 2012:36; Du Plooy-Cilliers, 2014:27-29).

Interpretivism accommodates the importance of contextual factors of human behaviour and the importance of people’s interpretation of information. Interpretivist research “tells a story”; it is “rich in detailed description and direct quotes from participants” in order to “understand people directly involved in a particular phenomenon” (Du Plooy-Cilliers, 2014:29-30). Bezuidenhout (2014:52) states that theories in interpretive research are used to describe phenomena in “an in-depth, rich, robust, ‘thick’, empathetic and subjective manner”. This process leads to the understanding of phenomena without predicting outcomes.

The ontological orientation associated with a qualitative research strategy in the domain of the social sciences is that of constructionism. Constructionism asserts that social phenomena are produced through social interaction and social construction, and therefore remain in a constant state of change and revision (Bryman, 2012:33). Thus “constructionist qualitative inquiry honors *the idea of multiple realities*” (emphasis in the original) as constructed by different groups of people (Patton, 2015:121-122). These constructs have real consequences and inform the lives and behaviour of the people involved.

The ontological perspective of reality also depends on an assumption about the nature of time and space. In terms of the Biomatrix systems theory, all systems and ecosystems exist within a simultaneous space-time continuum (Dostal *et al.*, 2005). A researcher can alternate between the spatial and temporal perspectives in order to make the intervention in a system easier and more effective. The difference between temporal and spatial observations can be subtle and depends on emphasis, foregrounding, and focus, rather than on a fundamental difference. A shift between temporal and spatial perspectives implies a shift from the process to the structure perspective of a system (Dostal *et al.*, 2005:130; Nutt, 2010a:586). Employing either a process or a structure approach to decision making is a symptom of a reductionist epistemology. In this study, both the process and the structural aspects of decision making are considered from a complexity perspective.

Complex systems are greater than the sum of their interacting parts. System elements interact with each other to co-produce outcomes that simply cannot be attributed to individual parts of such a system (Cilliers, 1998). This suggests that the focus of an analysis can shift from individual parts of a system to the system as a whole. As stated by Geyer and Cairney (2015:2), “[t]he metaphor of a microscope or a telescope, in which we zoom in to analyse individual components or zoom out to see the system as a whole, sums up this potential to shift our focus and approach”. Hence, the focus in this text will zoom in on micro-level issues or zoom out to observe macro-level perspectives, as appropriate.

Poole and Van de Ven (2010:574) argue that a combination of ontological and epistemological perspectives, both of which are process approaches, would be the most internally consistent way to pursue process research related to decision making. In addition, the study of social and physical systems as complex systems requires a “hybrid research approach that combines a positivist analysis of the system as a whole with an analysis of the actions of agents and subsystems that necessitates a more constructivist methodology” (Teisman *et al.*, 2009:7).

Qualitative research within the domain of the social sciences can also be conceptualised as a *bricolage* produced by the researcher as the *bricoleur* (Kincheloe, 2001). The French word, *bricoleur*, describes a person, ultimately a pragmatist, who makes deliberate use of the tools available to complete a task in an innovative, creative, and iterative manner. The resulting product is the *bricolage*. A *bricoleur*, living in a multidisciplinary and multi-methodological

world, takes uncertainty and complexity of social phenomena into account and “‘tinkers’ with research methods” to address a research problem (Hase, 2014). A *bricolage* may involve the collection of data from a spectrum of sources and academic disciplines (Wibberley, 2017).

Within the context of qualitative research, “the bricolage is concerned not only with divergent methods of inquiry but with diverse theoretical and philosophical understandings of the various elements encountered in the act of research” (Kincheloe, 2001:679). *Bricolage*, as research method, attempts to “present research findings in a way that challenges its audience to see its subject matter in an unexpected, irregular or offbeat way” (Wibberley, 2017).

### 1.9.2 Case study research design

A single-case case study research design was used as framework for this empirical study (Yin, 2014). “[T]he distinctive need for case study research arises out of the desire to understand complex social phenomena” such as small group behaviour and organisational and managerial processes in order to “retain a holistic and real-world perspective” (Yin, 2014:4). Yin defines the scope of a case study as “an empirical enquiry that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (Yin, 2014:16). Thus, the case study design is well aligned with the intent to “explore, understand and describe” (Strydom & Bezuidenhout, 2014:174), in qualitative terms, how a local municipality takes contextual decisions.

The units of analysis for this study alternated between the municipal context and the municipality itself at a macro level and individual decisions or decision makers at a micro level depending on the focus of the various investigations. Similarly, the flow of this research oscillated between analysis and synthesis, and between a macro and a micro focus.

The following research methods that are consistent with the case study research design were employed.

### 1.9.3 Research methods

Research methods that were considered and evaluated for the study included the following methods within the micro-macro category of methods (Morçöl, 2012:196-198): social network analysis (SNA) and agent-based modelling (ABM). SNA is a “heavily quantitative” method focused on (static) structural aspects of complex systems and therefore unable to capture the rich complexity of actors in the real world. ABM employs a (dynamic) quantitative approach, with a specific focus on the generalised attributes and behaviours of agents, to study systemic patterns that emerge from the behaviour and interaction of individual agents. Neither SNA nor ABM addresses the contexts of complex systems (Morçöl, 2012:210-243). Given the desire to develop a qualitative, contextual understanding of municipal decision making, neither SNA nor ABM was deemed appropriate for this research project. Instead, a qualitative case study approach was selected.

Consistent with the case study design, the following combination of research methods was finally selected and used to collect and analyse data (Bryman, 2012; Yin, 2014): A non-empirical literature review, semi-structured interviews, focus group interviews, observations, document analysis, a model-building study, and a thematic analysis of qualitative data.

Mouton (2001:179) defines a literature review as a study that “provide[s] an overview of scholarship in a certain discipline through an analysis of trends and debates”. The definition of a comprehensive literature review (or rather a synthesis of relevant literature), provided by Onwuegbuzie and Frels (2016:4), emphasises the importance of “a systematic, holistic, synergistic, and cyclical process of exploring, interpreting, synthesizing, and communicating published and/or unpublished information”. In this dissertation, the literature review was

adopted as an embedded study that was used to inform primary research during the stages of research conceptualisation, research planning and design, research implementation and research dissemination (Onwuegbuzie and Frels, 2016:9).

Different types of narrative literature reviews were employed in this study (Onwuegbuzie & Frels, 2016:24-25). Chapter 2 was based on a *methodological literature review* and Chapter 3 was based on a *theoretical literature review*. Both Chapter 1 and Chapter 4 were informed by a *general literature review*. Chapters 4, 5, 6, and 7 were informed by *theoretical literature reviews* on specific aspects pertaining to each chapter. Contributions from the non-empirical literature review permeate this entire dissertation (Onwuegbuzie & Frels, 2016:57-62).

A semi-structured interview refers to a context in which the interviewer poses open-ended questions, listed in an interview guide in a flexible order, to an individual to collect qualitative data. The interview is in the form of a conversation that allows for in-depth questions about specific aspects of interest, and for clarification of significant replies (Bryman, 2012:716; Strydom & Bezuidenhout, 2014:188).

A focus group interview entails the facilitated interaction of several participants, where the emphasis in the open-ended questioning and the joint construction of meaning is on a particular, fairly tightly-defined topic (Bryman, 2012:712).

A model-building study is “aimed at developing new models and theories to explain particular phenomena” (Mouton, 2001:176). A model can be described as a visual depiction and a basic illustration of a phenomenon in a specific context. A model is useful “to identify and illustrate the most important concepts of a theory and the dynamics of the relationship between concepts” (Bezuidenhout, 2014:47-48).

Thematic analysis, a method within the interpretative paradigm, was used to analyse transcribed qualitative data (Bryman *et al.*, 2011:336; Strydom & Bezuidenhout, 2014:191). Computer-assisted qualitative data analysis (CAQDAS) software in combination with a manual process was used to analyse data.

The above combination of methods and the use of diverse sources of data in the study of municipal decision making allowed for the cross-referencing of the findings of the study through triangulation (Bryman, 2012:717).

The above-mentioned research methods were employed to address the four descriptive and exploratory research sub-questions. A conceptual framework for the study, which integrates the research methods, the research questions, and the various chapters, is provided next.

#### **1.9.4 A conceptual framework for the study**

Table 1.1 serves as a tentative conceptual framework for the study. It summarises some of the relationships between the various chapters and the research methods that address a specific focus area or research objective of the study.

Chapter 2 provides more detail about the conceptual framework, the case study research design and the various research methods employed. It also contains an overview of the practical application of each method and addresses the strengths and weaknesses of each method.

**Table 1-1 Conceptual design of the study**

<b>Chapters</b>	<b>Focus of the chapter (in terms of the research objective)</b>	<b>Main research method(s)</b>
<b>Chapter 1</b>	Provides a framework for the study	Non-empirical literature review
<b>Chapter 2</b>	Research design and methods	Non-empirical literature review Depth interviews Focus groups Thematic data analysis
<b>Chapter 3</b>	Theoretical frameworks	Non-empirical literature review
<b>Chapter 4</b>	The municipal context (Research objective 1)	Non-empirical literature review Thematic data analysis
<b>Chapter 5</b>	Municipal decision-making processes (Research objective 2)	Non-empirical literature review Thematic data analysis
<b>Chapter 6</b>	Municipal adaptive capacity (Research objective 3)	Non-empirical literature review Thematic data analysis
<b>Chapter 7</b>	Framework for municipal decision-making (Research objective 4)	Non-empirical literature review Thematic data analysis Model building
<b>Chapter 8</b>	Summary, conclusions, recommendations	

### **1.10 Position, bias, and assumptions of the researcher**

The position and background of the researcher, his biases, perspectives and assumptions do have an influence on the entire research project and the results thereof. It is therefore important to reflect on these aspects.

#### **1.10.1 Position of the researcher**

The research paradigm held by the researcher informed the methodologies and the research design employed in the research project (Hesse-Biber & Leavy, 2004:1-15). Similarly, the nature of the research problem and the personal experiences of the researcher co-defined the research approach (Creswell, 2003:21-23). Complexity theory assumes that the knowledge of complex systems is contextual and that an observer of a complex system cannot be detached from it but is actually situated within the observed reality (Morçöl, 2012:174-175). Hence, it is deemed important to state the position of the researcher as research instrument in the setting of the study.

The traditional academic writing style in the passive voice that reigns in the academic world was used in the study rather than the active voice that the researcher would have preferred (Patton, 2015:71-73).

This researcher was born in the 1960s and brought up as a white Christian male in an Afrikaans-speaking, rural community within the Hessequa municipal area in a middle-class household as a first-born child. His academic education included a first class matric and training as a professional chemical engineer specialising in energy studies and business development. His corporate career of 16 years in the petrochemicals sector ended in 2004. Since then, he had owned and operated small businesses in the Hessequa municipal area. Since 2004, he had been an active participant in numerous initiatives, projects, and forums that involved close interaction with the Hessequa municipality. He is well informed about local and regional contextual issues and shares a personal relationship with most of the current and former municipal officials and councillors. During his interaction with the municipality, he had observed many opportunities to improve the decision-making capacity and the governance capacity of the institution. As a municipal taxpayer, the researcher was often very sceptical about the sophistication of municipal decision making.

The position of the researcher in this study alternated between the 'expert' equipped with theoretical knowledge and concepts, and the 'learner' who set aside existing knowledge and entered the social world of the research participants (Davis, 2014:123). His position varied depending on whether the nature of the phenomenon studied was simple, complicated, or complex (see the definitions of the latter concepts in Chapter 3). Regarding complex issues, Patton (2015:149) advises that "learning and insight emerge from engaging with the complex phenomenon, not being outside and looking in. The qualitative inquirer is embedded in complexity". The researcher, as observer, acted as an outsider when simple and even complicated issues were addressed and as an insider when complex issues were addressed.

### **1.10.2 Bias of the researcher**

The research design, its execution and the knowledge gained in the research process were co-determined by the biases and the context of the researcher. The context of the researcher refers to previous knowledge and understanding of the phenomenon, whether the researcher was inside or outside of the defined system boundaries, the language used to describe the phenomenon, and the consciousness of the researcher (Morçöl, 2012:154-157). A "frame bias" may result in certain events being highlighted and others being overlooked (Nutt & Wilson, 2010:660). Frame bias could have limited the kind of data that was recognised, collected and processed.

The research results reflect the position of the researcher who 'carries his history on his back' – just like the entity to be studied. His own identity, perspectives, worldviews, and prejudices impacted on the research findings. Hence, the research findings represent the perspective(s) of only one person, the researcher. This is a significant limitation. The researcher addressed his bias through self-reflection, reflexivity, and transparency regarding the research design, methods used, sampling criteria and other choices made (Bryman, 2012:39-40, 393-394). In addition to a personal 'bias-control' mechanism, a formal quality control framework was required to guarantee adherence to minimum academic and ethical standards.

### **1.10.3 Assumptions of the researcher**

The intent of this study was to contribute useful knowledge to the domain of decision-making within local government. An important assumption underlying this study was that this knowledge would be applied as intended (Patton, 2002:224). The contribution of this research could at best only be a necessary prerequisite to enhance municipal decision making, but it could never be a sufficient contribution.

A further assumption was that this study, given the research design and resource constraints, could not reveal (all) the subjective forces and the hidden agendas in the interior worlds of stakeholders of municipal decision-making processes.

It was assumed that the decision-making capacity of councillors and officials could be enhanced if they understood the nature of the municipal context and if they were trained in the use of the decision-making framework and associated methods. It was also assumed that municipal actors would apply the adaptive capacity framework and that they would act on the insights gained from it.

The decision to use a qualitative research strategy for this study was based on the assumption that a qualitative inquiry was more appropriate than a quantitative approach to study the phenomenon of decision-making within a complex context. A qualitative approach was assumed to be sufficient for addressing the specific research questions and the research objectives of this study.

The researcher assumed that the principles of general complexity applied to the municipality situated in its context. General complexity assumes that all complex social systems can be described by a general set of rules (applicable to all complex systems) from which emergent complexity flows (Morin, 2006). The main and explicit aim of general complexity is to reveal and to understand the rules and the patterns associated with complex systems. Situated complexity assumes that complex systems are context-dependent and that they are characterised by emergence beyond rule-following (Buijs, Eshuis *et al.*, 2009:37-39).

No specific distinction was made between strategic and non-strategic decision making within the Hessequa municipality since “the term strategic has become more confusing than enlightening” (Nutt & Wilson, 2010:4, 649-650).

These assumptions informed the entire research project. The next section provides an overview of the various chapters of this dissertation and their interrelationships to form a coherent whole.

### **1.11 Overview of the structure of the dissertation**

The dissertation consists of eight interconnected chapters. Three introductory chapters are followed by four chapters that address the four research sub-questions and research objectives. Chapter 8 concludes the study with a summary of findings, conclusions, and recommendations.

Chapter 1: Introduction and orientation

Chapter 1 provides the background and motivation for the study. It introduces the reader to the research problem, the research questions, and the research objectives. Reference is made to the research design and methods, the limitations of the study and the intended value contribution of the research. The chapter provides a framework for the organisation of the dissertation and the chapters.

Chapter 2: Case study research design and methods

Chapter 2 provides motivations for the selection of the single-case case study research design and the methods for qualitative data collection and data analysis. Specific research methods included a non-empirical literature review, semi-structured interviews, focus groups, document searches, observations, model-building, and computer-assisted thematic data analysis. Fieldwork and implementation of the research methods are discussed in the latter part of the chapter.



CAQDAS, in combination with a manual process, was used for the analysis of textual data. The first part of the thematic analysis of empirical data that applied to relevant chapters is described in Chapter 2. The more specific implementation of the latter phases of the thematic analysis is described in chapters 4 and 5.

### Chapter 3: Review of literature regarding aspects impacting on decision making

Chapter 3 contains a review of literature on systems theory, decision-making theory, leadership theory, organisational theory, and governance theory. Complex systems, complexity leadership and adaptive leadership are addressed in greater detail. Unique features and characteristic behaviours of simple and clear systems, complicated systems, complex systems, and chaotic systems are reviewed and tabled. The distinguishing features and behaviours of each type of system may be used as a mechanism to frame and categorise contextualised decision issues. This mechanism forms a key component of the framework for decision making. A novel contribution from this chapter is a framework to evaluate the adaptive capacity of a CAS at different layers of causality.

### Chapter 4: Features of the municipal context

Chapter 4 addresses the first research objective, namely, to provide an overview of the main features of the municipal context. Multiple complementary perspectives were applied to explore the temporal and spatial dimensions of this context. First, a “PESTLE” perspective was applied to observe the political, economic, social, technological, legislative, and environmental dimensions of the municipal context (PESTLE Analysis, 2020). Second, a causal layered analysis (CLA) was done to uncover the hidden, invisible, underlying factors that co-define systems and system performance. Third, a systems perspective was applied to illustrate the systemic nature of global and local patterns of change. Fourth, a complexity perspective was used to uncover contextual aspects that were not visible from the other perspectives. Fifth, an integral perspective was applied as a framework that included and transcended each of the other frameworks. Sixth, a thematic analysis of empirical data was used to reveal aspects of the nature of the internal context of the municipality. A theme uncovered in the data represented the municipal environment as a ‘political arena’. Other themes addressed the contextual awareness of interviewees and the emergence of complexity. The application of multiple complementary perspectives to the same context instead of only doing a PESTLE analysis represents a novel contribution to literature.

Findings documented in Chapter 4 are based on a non-empirical literature review and on empirical data. These findings provided inputs for the evaluation of the adaptive capacity of the municipality in Chapter 6 and co-informed the design of the decision framework in Chapter 7.

### Chapter 5: Municipal decision-making processes and practices

Chapter 5 addresses the second research objective which was aimed at developing a better understanding of current municipal decision-making processes and practices from a complexity perspective. The chapter continues with the latter phases of the thematic analysis of data described in Chapter 2. Details of the thematic analysis are included in appendices. Only a summary of findings is presented in the chapter. A definition of a municipal decision is proposed, and the features of decision issues are exposed in terms of three dimensions. A corresponding three-dimensional framework is proposed to categorise contextualised decision issues. Many intertwined aspects of the formal municipal decision process are also revealed.

In the latter part of Chapter 5 a complexity perspective is applied to examine a purposively selected sample of information-rich decisions recently taken by the municipality. Details of these cases are included in appendices and only the findings are reported in the chapter. Findings from Chapter 5 have implications for the application of the adaptive capacity

framework in Chapter 6 and the decision-making framework developed in Chapter 7. Chapter 5 also addresses and closes gaps in available literature regarding municipal decision making in the complex SA context.

#### Chapter 6: The adaptive capacity of the municipality

Chapter 6 reports on the third research objective of evaluating the adaptive capacity of the municipality. First, two models are applied to determine whether the municipality can be defined as a complex and adaptive system. Second, the adaptive capacity of the municipality is evaluated in terms of the novel framework developed for this specific purpose in Chapter 3. The law of requisite complexity is used as a key to link this chapter to Chapter 4 (dealing with the complex context), Chapter 5 (dealing with current decision-making practices) and Chapter 7 (developing a decision-making framework). This law states that in order to be efficaciously adaptive the internal complexity of a decision-making entity should at least match the level of complexity it confronts. Strengths and weaknesses of the adaptive capacity of the municipality at, and across, three causal levels are evaluated. Findings of this chapter have implications for the decision framework that is developed in Chapter 7.

#### Chapter 7: A conceptual framework for municipal decision making

Chapter 7 is concerned with the fourth research objective that focuses on a conceptual framework for decision making. This chapter consolidates relevant findings from all the preceding chapters. The framework addresses decision making at the strategic, tactical, and operational level. At the strategic level, the framework employs environmental scanning, foresight, scenario planning and collaborative processes to take care of contextual complexity over a longer-term planning horizon. At the tactical level, the framework links higher-level strategies and plans, as documented in the IDP, with decisions regarding the performance management system, the annual budget, risk management, and current contingent factors. At the operational level, the framework provides mechanisms to link framed decision issues to strategies that are adequate to address the issues in focus. Feedback loops are built into the framework to enable organisational learning (OL) and the adaptive processes associated with action learning. Adaptive and self-organising processes aim to enhance both the performance and sustainability of the municipality. Preconditions for the effective institutionalisation and use of the framework, and the methods involved, are considered.

#### Chapter 8: Summary of findings, conclusions, and recommendations

Chapter 8 concludes the text with a summary of the research findings, conclusions, and recommendations. The decision framework and the adaptive capacity framework capture most of the insights and findings emanating from the study. The novel contributions of this study to academic literature and the study's practical value are addressed. Recommendations for further research conclude the chapter.

### **1.12 Conclusions**

Several conclusions can be drawn from Chapter 1. First, the study will address several gaps in academic literature about municipal decision making in the complex and uncertain SA context. The contextual analysis will demonstrate the application of multiple complementary perspectives to a municipal context. Not one analysis similar or comparable to this, on municipal contexts in SA could be found in the academic literature. This analysis will cover more depth and breadth than most contextual analyses. The application of a complexity lens to municipal decision making, in general, in SA is novel. This study will address a spectrum of contextual variables that contribute to the emergence of complexity within the political arena of a municipality. The innovative adaptive capacity framework that considers three interconnected layers of causality constitutes a novel contribution to international literature.

The decision framework is unique and novel and fills a gap in SA academic literature in this regard.

This study will offer practical frameworks and mechanisms that can be applied to improve the current poor performance of at least two-thirds of SA municipalities by enhancing their decision-making capacity and their adaptive capacity. These enhancements should improve the governance capacity of this sphere of government. The academic resources produced by this study can support municipalities to deal more effectively with complexity.

The complexity perspective applied in this study extends the decision-making framework of a municipality beyond the paradigm of reductionist and linear decision processes in order to provide the capacity to deal with complex adaptive decision issues in a bigger context over a longer term. The benefits of this study will only be realised once concerted effort is made at the highest level to support and implement the suggested recommendations.

## CHAPTER 2 CASE STUDY RESEARCH DESIGN AND METHODS

Anyone who tries to write a book soon learns that there is a fundamental incompatibility between the simple linear sequence of words that he has to set down and the complex web of his thoughts. To meet this difficulty, he combs out his thoughts as best he can into long strands and ties them together in as orderly a manner as possible. While preserving the most important relations in the pattern of his ideas, he sacrifices others.

Herbert Simon (1976:x-xi)

### 2.1 Introduction

Chapter 2 elaborates upon the overview of the case study research design and corresponding research methods presented in Section 1.9 above. Yin (2014:28-29) defines a research design as the logical plan that links the research questions, the relevant data to be collected, and the appropriate process to analyse the data in order to answer the research questions. Practical aspects of data collection, data analysis, and interpretation are discussed. This chapter aims to make explicit the research methods that were employed and should contribute to the trustworthiness of the study (Bailey, 2007:181). Strategic research choices are motivated and justified and their relevance discussed. Benefits and limitations of each method are discussed, and ways to manage the limitations.

The chapter is structured as follows: A conceptual model of the research design and research methods is presented. The case study research design is described and justified before the research methods are reviewed. The processes of entering the research field and addressing the ethical considerations are discussed next. Then the processes of data collection, data analysis, and data interpretation are described. Shortcomings and sources of error in the research design and research methods are reviewed before the chapter concludes with a summary of the contents.

The conceptualisation of the study in terms of an integrating framework is discussed first.

### 2.2 Conceptualisation of the study

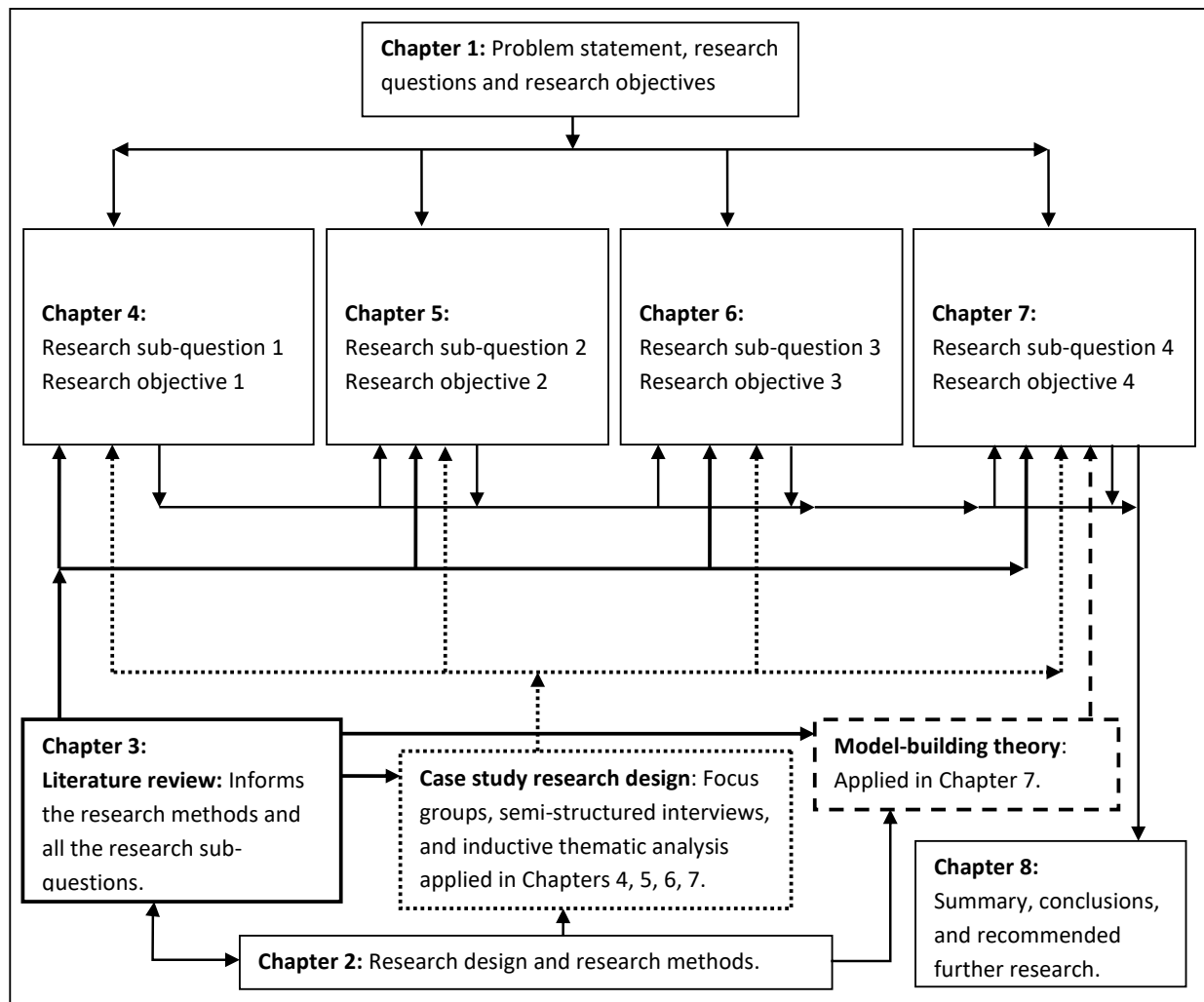
A conceptual framework offers a logical structure of interconnected concepts that provide a picture or visual display of how ideas in a study relate to one another (Grant & Osanloo, 2014:17). The relationships between the research questions, the research objectives, the research design, associated research methods, and the contents of the various chapters are explained first in terms of a conceptual framework.

The research design and research methods are aligned with the conceptualisation of the study as discussed in Chapter 1 and as depicted in Figure 2.1 below. In Chapter 1 the problem statement and primary research question with four research sub-questions and corresponding research objectives have been discussed. Figure 2.1 shows the links between the different interrelated chapters and the respective research sub-questions and objectives.

The research design consists of a non-empirical literature review, a case study research design, and model-building theory. The non-empirical literature review informs all four research sub-questions, their respective research objectives, and the methodological approaches. The case study design provides a convenient framework to accommodate the research methods.

Model-building theory is employed in Chapter 7 to integrate findings relating to relevant literature from Chapter 3, the municipal context as discussed in Chapter 4, current decision-making practices as presented in Chapter 5, and the adaptive capacity of the municipality in Chapter 6. Chapter 8 will conclude the study with a summary of the research findings, the conclusions from the study, and recommendations for follow-up research.

The single-case case study design is discussed next.



**Figure 2-1 Conceptualisation of the research design**

### 2.3 Case study research design

A research framework refers to the hierarchically structured combination of philosophical assumptions (in terms of ontology and epistemology), the corresponding research strategy, and the more detailed research methods selected to guide the implementation of the research approach (Crotty, 1998; Creswell, 2003). In Chapter 1, the adoption of a qualitative research strategy was discussed and justified with reference to the underlying philosophical assumptions. A case study research design was justified as an appropriate design for this qualitative study. A more comprehensive review of the case study design is provided below. The application of complexity theory within a case study research design is also discussed.

A traditional literature review indicated that three qualitative research approaches would be appropriate and adequate for the study, namely grounded theory (Glaser & Strauss, 1967), action learning (Schwella, 2014), and a case study design (Bryman, 2012; Yin, 2014; Patton, 2015).

The researcher preferred the flexibility of a case study design that could accommodate a combination of research methods. He preferred to review relevant literature before the commencement of data collection and analysis. The researcher had a strong preference for a design that used relevant theory and literature to inform the research. The mayoral committee of the Hessequa municipality was concerned that an action learning approach would take too much time of people involved and did not support action learning as an option. Finally, it was decided to implement a case study design as discussed by Eisenhardt (1989), Bryman (2012), Yin (2014) and Patton (2015). A review of this literature contributed to the methodological and theoretical rigour of the study. Further justification of this design is provided next.

### 2.3.1 Justification of a case study research design

The case study research design could address the needs of the researcher and the objectives of the study. Case studies are usually qualitative in nature. They provide an in-depth description of a single case and an intensive examination of the setting (Mouton, 2001:149; Bryman, 2012:66-67). Case study research is appropriate for studying and understanding complex social phenomena within their contexts (Yin, 2014:4). A case study design provides a knowledge-production framework that accommodates a transdisciplinary approach to knowledge creation and it encourages creativity and novelty. It consists of balanced, simultaneous, and iterative processes of theory-led and practice-led research and has the objective to solve problems in context and in real time (Tranfield & Starkey, 1998). This balanced type of research process corresponds with an abductive approach.

According to Yin (2014:16-17), a case study research design is appropriate and adequate to address the type of research questions posed in Chapter 1. The case study definition of Yin (2014) emphasises both its scope and features:

A case study is an empirical inquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident. A case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion ...

This definition illustrates that case study research covers the logic of research design, data collection techniques, and specific approaches to data analysis (Yin, 2014:17).

A thorough case study design goes beyond formulations that strip out most of what matters and uses the "power of richness" to reveal the detail and prototypical narratives of phenomena that enlarge our understanding of the human condition (Weick, 2007:18). Case study research, according to Yin (2014:19), is used to *explain* presumed causal links in real-world interventions that are too complex for survey or experimental methods. It is also applied to *describe* an intervention and the real-world context in which it occurred, and to *illustrate* certain topics within an evaluation in a descriptive mode. Case study research may be used to enlighten situations in which the intervention being evaluated has no clear, single set of outcomes (Yin, 2014:19).

The quality and methodological rigour of case study research are judged in terms of the requirements of construct validity, internal validity, external validity, and reliability (Gibbert *et al.*, 2008; Yin, 2014:45-49). In partial fulfilment of these requirements, the main elements of the case study approach and their relevance to this study are discussed next.

### 2.3.2 Key elements of a case study design

In case study research, the following five components of a research design require careful consideration (Yin, 2014:29-36):

**Case study questions:** A case study research design is an appropriate method to address ‘how’ questions (Yin, 2014:10) and exploratory and descriptive questions (Mouton, 2001:149). Research sub-question 2 is formulated as a ‘how’ question. Research sub-questions 1, 3 and 4 are descriptive in nature and are formulated as ‘what’ questions.

**Theory:** Theories are often formulated based on a literature review and direct the focus of the case study research to something specific that should be studied within the scope of the study design (Yin, 2014:30). This case study is informed by the theories documented in Chapter 3.

**The case and unit(s) of analysis:** The “case” of a case study is the concrete, bounded entity to be studied, whereas the unit of analysis may be the case itself, or embedded units (Harvey, 2009:30; Yin, 2014:31-35).

**The logic linking the data to theory:** Deductive and inductive processes link collected data and related theory. Pattern matching, explanation building, and logic models are often used to interpret qualitative data. This study employs both inductive and deductive processes in an abductive fashion.

**Criteria for interpreting the findings:** For qualitative case study research, important rival explanations for research findings have to be anticipated. Rival explanations may sometimes provide more robust and comprehensive explanations of observed phenomena than standard explanations (Yin, 2014:36).

The strengths and weaknesses of case study research are reviewed next.

### 2.3.3 Strengths and weaknesses of case study research

A case study *design* offers several important strengths. It makes provision for different and complementary *methods* to collect data, to analyse data, and to present findings. It deals with a spectrum of evidence – documents, artefacts, interviews, and observations (Yin, 2014:12). Data collection methods may include interviews with individuals, group interviews, participant observations, document analysis, and telephone interviews (Patton, 2002:297-298). The rationale for using multiple complementary sources of evidence is that data triangulation can be done through the development of “converging lines of inquiry” (Yin, 2014:120). This design is very appropriate to address research questions formulated as either “how” questions or “what” questions focusing on a contemporary contextual set of events (Yin, 2014:9,14,16). Complexity theory can be used in a case study design to study complex systems as integrated wholes within their contexts (Anderson *et al.*, 2005:669; Patton, 2015:146-148).

A review of traditional concerns raised against case study research with associated counter-arguments is provided by Yin (2014:19-22). The concerns include a (potential) lack of methodological and theoretical rigour, confusion between formal case study research and illustrative case studies used for teaching purposes, and an apparent inability to generalise from (single) case study findings. Another concern about qualitative case study research is that it requires much time and resources to conduct (Bazeley, 2013:74-75). Often case study research results in voluminous reports. An apparent lack of a comparative advantage of the method has also been offered as a concern. However, the following convincing counter-arguments offered by Yin (2014) and others address these concerns effectively.

During the recent decades, case study research has evolved into a mature research approach (Eisenhardt, 1989; Gibbert *et al.*, 2008; Bryman, 2012; Yin, 2012; Yin, 2014; Patton, 2015;). These authors have developed strategies, systematic procedures, and tactics that contribute to its methodological sophistication and rigour (i.e., construct validity, internal validity, external validity, and reliability).

Yin (2014) offers a counter argument to the claim that the external validity of case study research is very limited. He states that a single-case study is analogous to a single experiment. Many of the same conditions that justify a single experiment also justify a single case study. He states that “the single case can represent a significant contribution to knowledge and theory building by confirming, challenging, or extending the theory. Such a study can even help to refocus future investigations in an entire field” (Yin, 2014:51). Single-case studies such as *Street Corner Society: Social Construction of an Italian Slum* (Whyte, 1955), the explanatory study of the 1962 Cuban missile crisis (Allison & Zelikow, 1999), and *In search of excellence* (Peters & Waterman, 1982) demonstrate how findings from both single- and multiple-case studies have relevance far beyond the cases studied. In a classic article, March *et al.* (1991) explain how organisations learn from samples of one or fewer. The intent of case study research is not to reveal universal truths but to generate local and historically context-specific understanding (Järvensivo & Törnroos, 2010:104).

In conclusion, case study research has reached a stage of maturity and sophistication that renders it fit to be applied in this study. The focus now moves to the single case for this study.

### **2.3.4 Hessequa Local Municipality: The case in focus**

A case is a unit of analysis that can be defined as a bounded system (Bryman, 2012:66-67; Patton, 2015:536). The physical setting for this study was the Hessequa Local Municipality in the Western Cape province of South Africa. Embedded units of analysis, such as individuals, groups of decision makers and stakeholders, and decisions taken by the municipality were also studied. The temporal window of the study covers the period 2011 to 2021. More detail about this setting and context is provided in Chapter 4.

The Hessequa municipality was selected as the setting for this study through purposeful sampling (Patton, 2015:293). Motivations for this choice were the following: The municipality had maintained a high level of performance over many years. It was regarded as an information-rich case that might hold the key to valuable insights and an in-depth understanding of its decision-making practices. The researcher had lived in this municipal area for the first 22 years of his life and for the past 18 years. During the latter period he had participated actively, often in leadership positions, and in numerous capacities, in municipal advisory forums, projects, council meetings, workshops, and various other activities. The researcher knew most of the current and former councillors and senior officials of the municipality. He also had a good working relationship with them. The researcher had a very good understanding of the local context and the operations of the municipality. It was assumed that entry into the research field would be relatively easy.

This case study design can be described as a single-case case study design with multiple units of analysis and nested smaller cases, embedded within the single case, in one specific context (Yin, 2014). Due to time and resource constraints a single-case design (of one municipality) rather than a multiple-case design was chosen.

Case study research makes provision for inclusion of nested, layered, and structured case studies of specific bounded activities within the larger case. The combination of these units of analyses constitutes the overarching case (Patton, 2002:297-298) that is discussed next.

### **2.3.5 Units of analysis within the case study**

A qualitative research design that addresses complex phenomena has to be open, emergent, and flexible (Patton, 2015:149) in order to cope with the learning and insight that may emerge from engaging with a complex phenomenon. Hence, it is appropriate to proactively identify and study interacting units of analyses at three different levels (Morçöl, 2012:196-198), namely at the macro or systems level, at the intermediate micro-macro level, and at the lowest level possible, which is the micro level in terms of Patton’s case study rule (Patton, 2015:536).



The research design made provision for the following units of analyses: At the micro level, individual decision makers and individual decisions were studied. At the micro-macro level, groups of interacting decision makers and groups of emerging decisions were studied. At the macro level, the municipality in its context was defined as the unit of analysis. To answer the respective research questions, it was important to integrate findings and insights pertaining to the various levels of analyses (see Bourgeois and Eisenhardt [1988:818] for a similar embedded case study design).

At the micro level, the ‘unit of analysis’ was defined as a decision when the focus was on the decision as such. A decision was defined as the “entire decision episode”, including all the actions required to render a decision (Nutt & Wilson, 2010:648; Poole & Van de Ven, 2010:543). Individual actors also operated at the micro level. At the micro-macro level, actors such as the municipal council, executive committees, individual political parties, departments, or communities participated in the decision-making processes. At the macro level, the entire municipality was the unit of analysis (see Chapter 6). At this level, the unit of analysis included the contextual environment spanning all three levels (see Chapter 4). The focus level of the study moved back and forth between the micro level and the macro level depending on the nature of the unit of analysis that was in focus. Decisions regarding the annual budget performed this type of movement (see Chapter 5).

It was concluded that a case study framework was appropriate for this study. The research methods are discussed next.

## **2.4 Research methods employed**

“The methods section of a qualitative study reports on the researcher’s training, preparation, fieldwork procedures, and analytical processes” to add value and credibility to the inquiry (Patton, 2015:73). Therefore, the following introductory remarks are deemed relevant. Training for this dissertation included three week-long winter and summer schools that covered various research methods and research designs hosted by the Sustainability Institute and the African Doctoral Academy of the Stellenbosch University (SU). Active participation in more than fifteen PhD Athenaeum sessions of two days each hosted by the School for Public Leadership at the SU, and by the School for Social Innovation at Hugenote Kollege prepared the researcher for the research journey. This preparation was enriched through conversations with scholars in related disciplines and comprehensive literature reviews.

The following research methods were employed: Non-empirical literature reviews informed the research design, the review of relevant literature and the subsequent chapters. Data collection methods included semi-structured interviews, focus group interviews, and document searches. Thematic data analysis was applied to interpret data and model-building theory was used to capture findings in conceptual models.

Each method is reviewed below. Arguments for selecting the methods are provided, the benefits of using them are explained, and strategies to manage their limitations are discussed.

### **2.4.1 The non-empirical literature review method**

The non-empirical literature review method was selected as a research method. This method is described and evaluated below in relation to other literature review methods. Its limitations and the application of the method are also discussed.

#### **2.4.1.1 The literature review as research method**

Literature reviews inform academic research. Literature reviews are used to summarise, to analyse, to evaluate, and to synthesise the relevant and available literature (Onwuegbuzie & Frels, 2016:18). Academic literature reviews serve as very effective means to develop an

understanding of what other researchers have already done, or not done, in a specific area of interest before further research is undertaken. Literature reviews address relevant concepts and theories, appropriate research strategies and methods, and controversies and inconsistencies relating to a specific research topic (Bryman, 2012:98; Onwuegbuzie & Frels, 2016:15). A literature review provides access to explicit, formal knowledge in the public domain that has been articulated, codified, and stored in an accessible format from where it can be readily transmitted to others (Jesson *et al.*, 2011:16). This knowledge enabled the researcher to specify research questions and to develop the existing body of knowledge further (Tranfield, Denyer & Smart, 2003:208).

The following sections elaborate on the various categories and types of literature reviews.

#### **2.4.1.2 Different kinds of literature review methods**

A distinction is made between less structured traditional or narrative reviews with a broad, flexible scope and systematic reviews having a very formal structure and a narrow focus (Jesson *et al.*, 2011; Onwuegbuzie & Frels, 2016:23-25). Integrative literature reviews combine aspects of both the narrative and the systematic categories of literature reviews (Onwuegbuzie & Frels, 2016:24). The diverse features of a traditional literature review and a systematic literature review are listed in Appendix A (Tranfield *et al.*, 2003; Jesson *et al.*, 2011:93,118).

A systematic literature review employs a very rigid, systematically documented, protocol-driven methodology to provide a critical assessment, evaluation, and synthesis of all research studies that address tightly specified aims and objectives (Onwuegbuzie & Frels, 2016:25) within the domain of the pure sciences (Tranfield & Starkey, 1998:344; Tranfield *et al.*, 2003). This method, due to its positivistic origin, “sit[s] easily in a scientific framework but less so in a more open qualitative, interpretative paradigm common in the social sciences” (Jesson *et al.*, 2011:15). In the domain of the social sciences, a constructivist, explorative, and interpretive approach is often preferred to a method based on the scientific paradigm (Tranfield *et al.*, 2003). Researchers normally take a pragmatic approach to choose a literature review method that is appropriate for their application (Lorenc *et al.*, 2016:200).

In contrast to a systematic literature review, a traditional (or narrative) literature review employs a flexible, explorative approach and provides for a probing, snowball search strategy in order to gain a broad understanding and description of the research topic (Tranfield *et al.*, 2003; Jesson *et al.*, 2011:93,118; Bryman, 2012). It is adaptive, and it makes provision for reflection and freedom to pursue any relevant literature that meets quality requirement criteria. Traditional literature reviews usually adopt a critical and reflective approach to evaluate theories and to assess existing research. Thus, the traditional literature review method is more appropriate to apply where a more pragmatic ‘bottom-up’ constructivist and interpretivist qualitative approach to theory building and knowledge management (KM) is required, or when exploratory literature reviews are required to gain an initial impression of a research theme (Bryman, 2012:110). The traditional literature review process is terminated when a “saturation point” is reached (Mouton, 2001:91).

It was concluded that the flexible traditional literature review was appropriate for this study and that the rigid, narrowly focused systematic literature review method was inappropriate. However, the traditional literature review method suffers from a few limitations.

#### **2.4.1.3 Limitations of the traditional literature review method**

The traditional literature review method lacks a set of predetermined quality control measures such as those employed by the systematic literature review method. Literature reviews are prone to reviewer bias regarding the selection of sources and the quality criteria applied to such sources (Tranfield *et al.*, 2003). The method itself is dismissed by some authors as non-scientific work having the same value as a discussion paper (Jesson *et al.*, 2011:15, 75, 105).

A critical weakness of this open and flexible method is the lack of a properly documented and transparent, formal methodology and review protocol that may be required to replicate such a review (Tranfield *et al.*, 2003). Traditional literature reviews neither state the criteria for inclusion of literature in a study nor how valid or trustworthy the findings yielded from the literature are (Onwuegbuzie & Frels, 2016:24). Compared to systematic literature reviews the traditional literature review may appear rather haphazard, difficult to reproduce, and lacking scientific discrimination regarding the kind of evidence used (Bryman, 2012:111).

Several strategies were employed in this study to address the limitations of the traditional literature review method. Peer-reviewed literature from reputable sources was used for this study. All sources were referenced properly. The main contributions from the literature that informed the study were sourced from leading experts and renowned scholars. Reviewer bias was acknowledged as a relevant concern and was addressed by sourcing literature from very diverse sources. Instead of consulting “all relevant literature” as for a formal systematic literature review, the principle of saturation (Mouton, 2001:91; Glaser & Strauss, 1967:61) was used to terminate the review process.

Most of the critique against the traditional literature review was coming from positivist scientific researchers. This researcher argued that it was inappropriate to apply the inflexible systematic literature review method to the dynamic phenomenon of decision-making in a complex context. Similarly, the replicability of any type of literature review is subject to endless contingencies, regardless of the availability and use of a formal methodology and review protocol.

The researcher’s conclusion was that the traditional literature review method was appropriate for this study. Application of the method is discussed next.

#### **2.4.1.4 Application of the literature review method**

The embedded literature review informed all the stages of this project, including conceptualisation, research planning and design, research implementation and research dissemination (Onwuegbuzie & Frels, 2016:57-62). It enlightened the entire study.

Implementation of the traditional literature review method was based on three perspectives of the method. First, it was implemented in terms of its key elements (Tranfield *et al.*, 2003; Jesson *et al.*, 2011). These elements included the research focus and scope, the research protocol, various considerations regarding the literature consulted, and a literature review report. Second, it was implemented in terms of four major types of narrative literature reviews (Onwuegbuzie & Frels, 2016:24). These were a *general* review, a *theoretical* review, a *historical* review, and a *methodological* review of literature. Third, it was implemented in terms of three different paradigms or worlds (Mouton, 2001:137-142). World 1 is the domain of everyday life and pragmatic interest, where lay knowledge is used to deal with social and physical realities. World 2 is the domain of science, scientific research, and the epistemic interest of science. World 3 is the domain of meta-science with a critical interest in and relation to the qualitative research methodology, the interpretivist paradigms, and the case study research design. The interplay of all these elements contributed to the quality and value, the rigour and relevance, and the breadth and depth of the resulting literature review.

In some dissertations the literature review as research method does not receive much attention (see, e.g., Ronn [2011] and Scheepers [2015]).

The research methods included in the research design are discussed next.

#### **2.4.2 Data collection methods**

In this section the different data collection methods are discussed. Section 2.7 builds on this section and explains the implementation process. A flexible, multi-method data collection

strategy was implemented. Semi-structured interviews, focus groups, document searches, personal reflections, field notes and important observations were used to collect data (Patton, 2015:536). This approach had several advantages. Multiple and complementary perspectives allowed the researcher to build on the strengths of each data collection method while minimizing the weaknesses of any single approach (Patton, 2002:307). The construct validity of the case study was strengthened through data triangulation and the development of converging lines of inquiry (Yin, 2014:120-121).

The nature of complex phenomena requires emergent designs, flexible fieldwork and flexibility in data collection to follow the action wherever it unfolds (Eisenhardt, 1989:539; Kincheloe, 2001; Anderson *et al.*, 2005; Patton, 2015:293). This flexibility, employed in this study, provided for additional cases to be studied, for adjustments to data collection instruments and for the addition of data sources to better ground the theory or to contribute new theoretical insight.

The semi-structured interview method is reviewed next.

#### **2.4.2.1 The semi-structured interview method**

The semi-structured qualitative interview method or alternatively called the depth interview method is one of the most important (Yin, 2014:110) and appropriate (Patton, 2015:14) sources of case study evidence. It is appropriate for use in this exploratory and descriptive case study research design within the interpretive paradigm (Miller & Crabtree, 2004:189; Bailey, 2007:101; Patton, 2015:14). Semi-structured interviews refer to the flexible, dynamic in-depth interviews or dialogues with individual knowledgeable people, in contrast to either structured or unstructured interview methods (Bailey, 2007:95-111; Patton, 2015:432-434). Note that authors use both the terms 'depth interview' and 'in-depth interview' when they refer to semi-structured, qualitative interviews with individuals. (See also Bryman & Bell, 2011:216; Bryman, 2012:471; Strydom & Bezuidenhout, 2014:188). In this text the terms depth interview and semi-structured interview are used interchangeably.

The purpose of depth interviewing is to capture the views, beliefs, perspectives, experiences, feelings, opinions, thoughts, and expectations of participants (Patton, 2002:341; Strydom & Bezuidenhout, 2014:188-189). It aims to enter into the other person's perspective and to gather their stories (Patton, 2015:426). Miller and Crabtree (2004:186) describe the depth interview as a partnership, as a communicative performance, and as a conversational research journey for meaning-making within a shared cultural setting. It aims to capture the unique perspectives, perceptions, experiences, emotions, and qualitative data of individuals.

Data collection through depth interviews is an iterative process. It is entangled with data analysis which starts soon after the first data have been collected. There is a repetitive interplay between the collection and analysis of data (Bryman, 2012:566). Questions in the interview guide can be adjusted to pursue new issues that emerge.

Key elements and detailed steps of the depth interview method are documented (Miller & Crabtree, 2004:188-189; Bryman, 2012; Patton, 2015). These aspects informed all the stages of data collection, analysis and interpretation. Implementation of the method is discussed below. Advantages and limitations of the method are reviewed next.

#### **Advantages of the depth interview method**

The depth interview method allows the researcher to develop a broad and deep understanding of the visible and invisible contextual variables and influences in a case. Interviewing produces rich and detailed answers (Bryman, 2012:470). Interviews are insightful as they provide explanations and personal views, perceptions, attitudes, and meanings. This method allows the researcher to focus directly on the topic of the case study and relevant aspects related to the study (Yin, 2014:106; Patton, 2015:426). The semi-structured interview method allows for

both a flexible flow of the interview process (Bailey, 2007:100) and a tentative structure for data analysis regarding key focus areas of the research (Patton, 2015:442). The depth, breadth, and focus of conversations can be adjusted to pursue new ideas, concepts, and hunches as fieldwork progresses. Snowball sampling may be used to pursue new sources of data and interviewees.

### ***Addressing the limitations of the method***

Semi-structured interviewing has several disadvantages. The process may be distorted through interviewer bias, interviewee refusal to participate, research distortion, a research expectancy effect, social desirability effects, and interviewees responding in ways perceived by them as appropriate. Errors in data documentation may occur and inaccuracies due to poor recall by interviewees of events can affect the quality of data (Mouton, 2001:106-108; Yin, 2014:106).

These limitations were addressed by heeding the advice of Mouton (2001), Bryman (2012), and Strydom and Bezuidenhout (2014). Realising that research was not value-free, the researcher practised self-reflection and reflexivity on a continual basis. All decisions influencing the research design and execution were documented and comprehensive field notes were kept. The other limitations were addressed by recruiting substitute interviewees in case of refusals to participate, and by conducting interviews in a professional and scholarly manner. All research data were properly referenced, documented and filed. Poor recall by interviewees of events was compensated for by consulting other interviewees. Complementary data collection methods included the focus group interview method.

#### ***2.4.2.2 The focus group interview as research method***

Focus groups as a self-contained qualitative research method is defined by Morgan (2004:263-264) as a technique that collects data through group interaction on a topic determined by the researcher. The topic determines the focus. The accent is upon interaction within the group and the joint construction of meaning (Bryman, 2012:502). The value of the focused interview was first illustrated by Merton and Kendall (1946). The method offers a non-threatening and comfortable social context for data collection (McDermott & Rothenberg, 2004:289-290; Strydom & Bezuidenhout, 2014). Focus groups provide a space where participants can consider their own views in the context of the views of others (Patton, 2015:475).

Focus groups are appropriate for the collection of qualitative data within a case study research design (Mouton, 2001:149-150; Bryman, 2012:76; Patton, 2015). Focus group interviews are extremely flexible and particularly useful to provide complementary data from larger samples of respondents (Stewart & Shamdasani, 2015:44). Purposive sampling aims to sample participants strategically in terms of criteria that will put them in a favourable position to address the research questions being posed (Bryman, 2012:416, 714). These questions effectively guide the sampling strategy. Different types of purposive sampling methods exist, for example, snowball sampling and opportunistic sampling (Bryman, 2012:419).

The value derived from a focus group interview is co-determined by proper preparation and an effective, focused agenda in the form of an interview guide (Stewart & Shamdasani, 2015:49). A moderator or facilitator controls the structure, discipline, group dynamics, flow and focus of the conversation according to the research goals (Morgan, 2004:278; Bryman, 2012:508).

A focus group typically consists of five to eight people (Patton, 2015:283). A session may last between 90 minutes and two and a half hours (Stewart & Shamdasani, 2015:40). The nature of the research determines the number of focus group sessions (Stewart & Shamdasani, 2015:64). Data becomes saturated as the number of focus groups increases (Morgan, 2004:276). Confidence in emerging patterns increases when a variety of perspectives from different focus groups are considered in a study (Patton, 2015:475).

Synchronous focus group interviews can be done online in real time with a group of participants, all of whom are online simultaneously (Bryman, 2012:663-668). Audio-visual virtual focus groups have several advantages and disadvantages (Braun & Clarke, 2013:98-101). The method is cost-effective and convenient. It can accommodate key people, with limited time available for research, with minimum interruption. Geographically dispersed participants and people with disabilities can participate from the comfort of their homes or offices.

### ***Advantages of the focus group method***

Focus groups have specific advantages that applied to this study (Strydom & Bezuidenhout, 2014). A key advantage is the power of a range of participants with diverse opinions and perspectives focusing on a specific topic. Apart from being a cost-effective way to obtain rich and detailed qualitative data from groups in a short time, focus group interviews have the advantage of producing data of which the quality is enhanced through argumentation and diverse perspectives (Patton, 2015:477-478). Focus groups may reveal data that is hidden from depth interviews. Focus groups produce “a very rich body of data expressed in the respondents’ own words and context” (Stewart & Shamdasani, 2015:42). The value of focus groups is maximised when it is used in combination with complementary methods such as depth interviews (Stewart & Shamdasani, 2015:42-49). Additional advantages of focus groups have been documented elsewhere (Morgan, 2004:271; Bryman, 2012; Bazeley, 2013:198; Strydom & Bezuidenhout, 2014; Patton, 2015:478; Stewart & Shamdasani, 2015:45).

### ***Addressing the limitations of the focus group method***

The advantages of the focus group method listed above are balanced by several limitations (Bryman, 2012:516-518; Patton, 2015:478; Stewart & Shamdasani, 2015:42). Participants may not be representative of the larger population. Some groups are difficult to organise and control, data may be difficult to analyse and transcribe, and it may be challenging to deal with both reticent and dominant participants. Another limitation stems from group effects and the potential for groupthink (Janis, 1982; 1991). The depth of the discussions is co-determined by the number of research questions and participants, the duration of the session, and the effectiveness of the facilitator. The act of moderating a focus group has the ironic consequence of disrupting the group interaction that generates the sought-after data (Morgan, 2004:272).

Bryman (2012:667-668) discusses limitations of online focus group interviews. Technical limitations are related to the skills required to use the technology involved, access to online facilities, and unreliable connectivity. Practical limitations relate to the difficulty for the interviewer of establishing rapport and to engage effectively with participants. It is impossible to capture all non-verbal data, and messages conveyed through body language during online sessions. Some forms of data, including contextual data and personal data of participants, may not be accessible. The researcher has less control over the virtual interview and is unaware of the contextual variables that may influence participants. Data from virtual or online focus groups is less secure than data from face-to-face interviews.

Some limitations can be addressed through proper planning and control of focus groups, intelligent time management, effective facilitation and moderation, and good sampling practices. Online focus groups can be an effective alternative to traditional focus groups. Some of the limitations of the focus group method can be mitigated by using complementary data collection methods, such as field notes, direct observations, and document searches.

#### ***2.4.2.3 Field notes as data collection method***

Field notes served as an additional source of data for this study. The researcher applied his lifelong habit of note taking to document relevant aspects of the research journey and field work. These field notes complemented the more formal data collection methods.

A comprehensive overview of the use of field notes is available in Bryman (2012:447-452). Eisenhardt (1989:538-539) refers to field notes as a running commentary to oneself about the progression of the research, with specific reference to the overlap between data collection, coding of data, and data analysis. Patton (2015:389) argues that field notes are the fundamental database for constructing case studies. Field notes consist of descriptions of personal experiences and observations, direct quotations from people, as well as insights and interpretations made during research. The notes capture impressions, ongoing thoughts, emergent ideas, lessons learned, and anecdotes (Eisenhardt, 1989; Patton, 2015). The notes are descriptive, concrete, and detailed, and focus on contextual aspects and events. Patton (2015:387) advises that field notes should make a clear distinction between descriptions of experiences and observations, and their interpretation. Field notes may also include working hypotheses about what is happening in the setting (Patton, 2015:388).

### ***Advantages of field notes***

For the researcher, field notes served as an extended memory that captured the evolution of the entire research process, from conception to completion in chronological order. The method was convenient, effective, and simple. Notes could be taken at any time of the day and night with a notepad and pen. Insights could be captured the instant they emerge. In the very act of writing field notes the researcher was also creating valuable data that was used during data analysis (Bailey, 2007:113). Field notes may serve as a very useful chronological log of developments and as a record of important insights, ideas, inferences, and reflexive thoughts (Bailey, 2007:115-119). Field notes are used very effectively in combination with interview data to recall and to reconstruct events during the stages of data analysis and interpretation (Patton, 2002:302-303; Patton, 2015:387-389).

### ***Addressing the limitations of field notes***

Bryman (2012:447-452) discusses several limitations of field notes and corresponding remedies. Writing down field notes has to be done in a way that does not make people self-conscious. In such cases a voice recorder may be used. However, transcriptions of recordings may be time-consuming. Alternatively, mental notes or scratch notes can be made. These have to be converted to full field notes (Bryman, 2012:450). It is always good practice to write down field notes as soon as possible after the event in focus. An adaptive strategy must be followed to render the process of note taking less conspicuous.

#### ***2.4.2.4 Observations as data collection method***

Case study research focuses on phenomena taking place in real-world settings and contexts. It creates the opportunity for direct observations of social and environmental conditions. Observational data can provide additional information that adds new dimensions for understanding both the context and the phenomenon being studied (Yin, 2014:113-114).

Choosing observation as a data collection method was motivated as follows: First, the researcher's participation in numerous municipal activities varied from an overt full member (of workshops, meetings, and conversations) to a partially participating observer (during interviews and focus groups) to minimally participating and to a non-participating observer with interaction (during council meetings) (Bailey, 2007:79-94; Bryman, 2012:273, 441-444). These events presented prime opportunities for observation. Second, the researcher's observation skills are well-developed, and critical observation occurred naturally for him. Third, observation as method was applied in this study to collect data that was difficult to collect through the other methods described above. Fourth, observational data could complement data from other sources (Bryman, 2012:432; Strydom & Bezuidenhout, 2014). Accurate observations aimed to derive meaning and understanding of whatever was observed within a specific context (Bailey, 2007:91).

### ***Advantages of direct observations***

Participant-observation tends to reveal more accurate data about the role of insiders involved in processes being studied, as the vantage point of the observer is almost inside a case (Yin, 2014:117). The researcher's extensive contact with the municipality before and during the research contributed to a better understanding of the municipal context, its challenges, and its stakeholders (Bryman, 2012:494). Active involvement in group activities led to a better understanding of the phenomena at hand within the context in which they occurred. This allowed the researcher as participant-observer to report on actual everyday behaviour of participants and any discrepancies between 'what was' versus 'what should have been' (Strydom & Bezuidenhout, 2014:180).

Another advantage is that actions can be covered directly and in real time within context (Yin, 2014:106). Thus, direct observations eliminate the distortion of biased and incomplete information received through interviews and document analysis. Active participation may allow the observer to manipulate or influence variables and conditions in ways that stimulate the production of additional relevant data about the topic being studied (Yin, 2014:117).

### ***Addressing the limitations of observations***

The direct observation method has a few limitations that have to be managed with care (Bryman, 2012:493-497; Strydom & Bezuidenhout, 2014:181; Yin, 2014:106). The presence of a participant-observer may cause a reactive effect among participants which may result in atypical behaviour. Participant-observation can be very intrusive to people's routines within an organisational context. Observations can be very time-consuming and expensive to conduct. Full or complete participation of observers may result in the observer disturbing the very situation being studied. It may also cause the observer to lose objectivity and perspective.

The researcher addressed these limitations as follows: First, the researcher was very mindful of these limitations and kept his research-based perspective. Second, the researcher developed a favourable reputation and a relationship of mutual respect, trust, and openness with study participants. The expectation was that this relationship would minimise any reactive effects and atypical behaviour. Third, care was taken to minimise disruption of participants or municipal processes when field work was done.

Documentary data was used in combination with observational data.

#### ***2.4.2.5 Document searches as data collection method***

The document search method was selected as a complementary data collection method to explore the comprehensive documentary databases of the municipality.

The most important use of documents in case study research, according to Yin (2014:107), is to corroborate and augment evidence from other sources. Documents are typically sourced from libraries, online databases, personal files, archives and many more (Bryman, 2012; Patton, 2015). Documentary sources include published and unpublished documents in hard copy and in electronic format, speeches, narratives, official memoranda, business plans, and annual reports (Mouton, 2001:99). Documents may include emails, personal documents, reports of events, agendas, and minutes of meetings, administrative documents, study reports, and articles from the printed media (Yin, 2014:106). Three-dimensional artefacts, pieces of art, and photographs also qualify as data (Patton, 2015:14, 376, 378).

It is important to understand what kinds of documents are available. The meaning of documentary data is very context- and time-dependent. Therefore, document sampling strategies are important. Purposive sampling can also be applied to document searches (Bryman, 2012:427).



### ***Advantages of documentary data***

Documentary data collection has several advantages. The method can be applied in combination with other interactive methods within a multi-method qualitative case study research design (Yin, 2014; Patton, 2015). The method is an unobtrusive data collection process (Strydom & Bezuidenhout, 2014:190-191) without a reactive effect (Bryman, 2012:543). Data is pre-existing and non-interactive, rendering it a dimension of naturalness and authenticity (Hesse-Biber & Leavy, 2004:307-313). Documentation can be broad, covering many events within various contexts over long time spans and it can be reviewed repeatedly. Documents often provide accurate, precise, and specific details about events that cannot be uncovered through other methods (Yin, 2014:106). Documents provide unique windows onto social and organizational realities (Bryman, 2012:554). Therefore, a documentary perspective may generate a broader range of questions regarding the research topic.

### ***Addressing the limitations of documentary data***

Documentary data suffers from several weaknesses (Yin, 2014:106). Reporting bias refers to the possible bias of the author of the document whereas biased selectivity occurs when document collection is incomplete. Access to documents may be withheld due to confidentiality or other reasons. Sometimes it is difficult just to find documents. The status and integrity of documents may be uncertain (Bryman, 2012:554-555). Documentary data should be substantiated by other sources of data regarding the context and authenticity of the data.

These limitations were addressed as follows. The researcher focused on cultivating an awareness of his own potential bias and that of the author of the documents. Documents were interpreted within the context of other documents and relative to other complementary sources of data. Documents were evaluated in terms of their authenticity, credibility, representativeness, and meaning making before they were used (Scott, 1990:6).

Access to documentary sources of the municipality was provided in terms of a confidentiality agreement (see Appendix F).

#### ***2.4.2.6 Data triangulation***

The research design made provision for data triangulation (i.e., the use of different data sources to cross-check findings) and theory triangulation (i.e., the use of different theoretical perspectives to interpret the data) but not for methodological triangulation (i.e., a combination of different research methods to study decision-making) (Denzin & Lincoln, 2006).

Using multiple methods of data collection, and collecting data from interviewees with diverse points of view, allowed for triangulation of data which was very useful for verification of data (Bailey, 2007:76-77). Triangulation served to contribute to the integrity and reliability of the research. What appeared to be inconsistent data during a triangulation process might ultimately lead to a better understanding of a phenomenon (Bailey, 2007:77).

This section concludes the review of methods for data collection. The next section covers the methods to analyse and interpret data for this study.

### ***2.4.3 Qualitative data analysis and interpretation methods***

The distinct nature of qualitative research is that it is textual, iterative, hermeneutic, subjective, constructed, and symbolic (Bezuidenhout & Cronje, 2014:229). Qualitative analysis of documentary data can be defined as a research method for the subjective interpretation of data through the systematic process of coding and identifying themes or patterns (Hsieh & Shannon, 2005:1278). The method primarily consists of data reduction, data organisation, data interpretation, and data substantiation (Bezuidenhout & Cronje, 2014:232-235). The method is

used to explore and identify overt and covert themes and patterns embedded in the data (Bezuidenhout & Cronje, 2014:234), to make sense of the data and to interpret its meanings (Bailey, 2007:125).

The data *corpus* for this study included transcriptions of depth interviews and focus groups, field notes, documented observational data, and documents in the public domain (Kondracki *et al.*, 2002:224; Braun & Clarke, 2006:79; Dawson, 2007:118; Bezuidenhout & Cronje, 2014:230, 233; Strydom & Bezuidenhout, 2014:191). The data set for the thematic analysis consisted of the transcriptions of the depth interviews and focus group sessions.

#### **2.4.3.1 Deciding on a qualitative data analysis method**

General strategies for the analysis of qualitative textual data include grounded theory and thematic analysis. Both methods were evaluated. Grounded theory provides an inductive, systematic methodology for gathering, synthesizing, analysing, and conceptualising qualitative data for the purpose of theory construction (Glaser & Strauss, 1967; Charmaz, 2001; Bryman, 2012; Strydom & Bezuidenhout, 2014). The methodology consists of flexible strategies to guide data collection and, particularly, data analysis (Charmaz, 2001:6396). The method applies a purely inductive approach to data analysis and theory development without reference to existing theoretical frameworks.

Thematic analysis, within the interpretative paradigm, was also considered for data analysis (Braun & Clarke, 2013; Bezuidenhout & Cronje, 2014:234-235; Strydom & Bezuidenhout, 2014:191). Thematic analysis is a specific version and application of qualitative content analysis (Bryman & Bell, 2011:336). This method integrates an inductive approach based on empirical coding, and a deductive approach based on *a priori* codes, and on existing, preconceived theoretical frameworks.

The purpose of this research was not to develop new theory but to develop a better understanding of municipal decision making. The thematic analysis method was adequate and appropriate for this purpose (Braun & Clarke, 2006; 2013; Bryman, 2012:578-581; Bezuidenhout & Cronje, 2014:228-243; Morgan, 2018). The researcher felt much more comfortable and confident with thematic analysis as method than with grounded theory. Therefore, thematic analysis was selected as data analysis method.

#### **2.4.3.2 Thematic analysis as data analysis method**

Bryman (2012:578) and Braun and Clarke (2006; 2013) describe thematic analysis as method, its advantages, and limitations, and its application. Data analysis involves breaking up the data into manageable themes, patterns, trends and relationships between concepts, constructs or variables (Mouton, 2001:108). Thematic analysis can be applied across a spectrum of theoretical and epistemological approaches, and it can potentially provide a rich and detailed, yet complex, account of the data (Braun & Clarke, 2006:78). The method is used to identify, analyse, and report patterns or themes within data. Bryman (2012:580) suggests that repetition is probably one of the most common criteria to establish that a pattern within the data warrants being considered a theme. Repetition may occur within a data source or across data sources, and it must be relevant to the research focus or research question. Thematic analysis works most effectively when themes are identified that address the research questions directly (Bailey, 2007:154).

The literature lacks a consistent definition and use of the terms *category* and *theme* (e.g., Bryman, 2012:580; Bezuidenhout & Cronje, 2014). In this study, the term *theme* was used rather than the concept *category* that is associated with grounded theory (Strauss & Corbin, 1990). Morgan (2018:340) defines themes as meaningful patterns in the data, which researchers use to interpret that data for an audience. Morgan emphasises the use of themes as communication tools that help readers to understand essential aspects of the data. For

Bryman (2012:580) a theme is a category of codes (i.e., names or tags of data fragments) identified in textual data that relates to the research focus. Themes provide the basis for a theoretical understanding of the data. Braun and Clarke (2013:224, 231) define a theme as a central organising concept. A good theme is distinctive, organised, and coherent and it makes sense on its own. Good themes have to fit together in order to produce the overall analysis.

A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set (Braun & Clarke, 2006:82). A theme may be a recurring pattern, a topic, a viewpoint, a concept, or an event. Unlike typologies that organise data into mutually exclusive categories, themes can have features that overlap (Bailey, 2007:153-154). Bezuidenhout and Cronje (2014:238) have a different opinion and insist that themes should be mutually exclusive, distinct, with no overlap in meaning. A description of a theme is normally accompanied by a few verbatim quotations or excerpts from the data that illustrate important aspects of the theme well.

The thematic structure proposed by Braun and Clarke (2006; 2013:231) was adapted and adopted for this study: Themes may be hierarchically structured. An *overarching theme* organises and structures the analysis. An *overarching theme* captures the core ideas encapsulated in a few *main themes* and does not contain data or codes. A *main theme* consists of one or more *themes* that each contains core aspects of the main theme. A *theme* may consist of a cluster of related codes, or one or more *sub-themes*, each consisting of several related codes. *Sub-themes* capture specific aspects of the central organising concepts of one of the *themes* that constitute the *main theme*. To add one more level of hierarchical depth below the level of sub-themes the level of *sub-sub-themes* is introduced. Braun and Clarke (2013:231) warn that thematic structures with too many hierarchical layers may be complicated, hard to follow, and confusing. This thematic structure was applied as follows:

- *Overarching theme*: Four unique overarching themes represented the focus areas of chapters 4, 5, 6 and 7 respectively.
- *Main themes*: Three main themes contributed to the overarching themes in both chapters 4 and 5.
- *Themes*: One or more themes informed each main theme in this study. A theme consisted of one or more codes or sub-themes that were related in terms of a core idea or concept.
- *Sub-themes*: Sub-themes were the building blocks of individual themes.

Thematic analysis is a specific type of content analysis of textual data (Dawson, 2007:120) that can be conducted either inductively or deductively (Bezuidenhout & Cronje, 2014:234; Braun & Clarke, 2006:83). When a deductive analysis is performed, coding can be done in terms of a specific research question or theory. The method is used when data is analysed in terms of themes observed in the data. Bailey (2007:127-128) argues that themes do not wait in the data to emerge but that qualitative researchers actively create the themes through the processes of data analysis and interpretation. Braun and Clarke (2013:225) agree, explaining that the search for patterns in the data is an art; an active search to find meaning in the data.

In this study, the researcher played an active role in the research and data analysis processes. The researcher chose the research design, data sources, the methods to collect and to analyse data, and to present the findings. Although this research reflects the perspectives of the researcher, it was conducted according to generally accepted academic standards and norms.

Thematic analysis was implemented according to the following recursive phases proposed by Braun and Clarke (2006:87; 2013:202-203), and Bezuidenhout and Cronje (2014:232-243):

- Phase 1: Transcription of interview and focus group data
- Phase 2: Familiarisation with the data

- Phase 3: Coding of the data set
- Phase 4: Searching for themes
- Phase 5: Reviewing themes
- Phase 6: Defining and naming themes
- Phase 7: Producing the report on methods and findings

Phase 1 presented the first opportunity for the researcher to familiarise himself with the data. Phases 1, 2, 3 and the first part of Phase 4 are reported in Section 2.7.5 below. Phase 4 reporting continues in chapters 4 and 5 and builds on the work done in Chapter 2.

Each of the seven phases is discussed in the following sections in some detail. Additional detail is added when the application and implementation of the method is discussed in the latter part of this chapter and in Chapter 4 and Chapter 5.

### **Phase 1: Transcription of interview and focus group data**

A transcription is the written translation of a voice record of a depth interview or focus group session (Bryman, 2012:717). Voice recordings have to be transcribed in order to convert it to textual data that can be processed during the data analysis phase (Heritage, 1984:238; Bryman, 2012:482). It takes five to six hours to transcribe one hour of voice recording. The recommended conventions of Bryman (2012:485) for transcribing voice recordings were adopted for this study. Braun and Clarke (2006:88) are of the opinion that thematic analysis does not require the same level of detail in the transcriptions as some other qualitative data analysis processes. The transcriptions must retain the information required for the research design that applies.

Transcriptions have many advantages (Bryman, 2012:482). Transcriptions capture details of conversations better than human memory. Transcriptions allow for thorough and repeated examination of interviewees' responses and for secondary analysis of interview data. Such data can also be reused for different purposes. The person who transcribes the recordings can become familiar with the data during this interpretative act when meanings are created (Braun & Clarke, 2006:87-88). Unfortunately, the procedure is very time-consuming and it generates piles of paper. An important limitation is that no transcription can ever capture the richness and multiple aspects of an actual interview.

### **Phase 2: Familiarisation with the data**

The researcher can become familiar with the data by participating in the interactive data collection processes, by transcribing the data, by ensuring the accuracy of transcriptions, and by repeated and active reading of the transcriptions throughout the data analysis phase (Braun & Clarke, 2006:87). Active reading involves searching for meanings and patterns in the data. Phase 3 begins after the researcher has become familiar with the entire data set.

### **Phase 3: Coding of the data set**

An abductive coding strategy was followed in this study. Themes that were developed were primarily data-driven, but at the same time also within a theoretical framework that contributes elements of deductive logic. Inductive coding refers to the process of generating theory out of research and the analysis of data (Bryman, 2012). Such analysis is not shaped by or based on existing theory (Braun & Clarke, 2013:175). Deductive coding is conducted with reference to existing theoretical frameworks (Bryman, 2012). The coding phase constitutes a critical part of the data analysis process.

The entire coding process is described in detail in the literature (Braun & Clarke 2006:89; Bryman, 2012:709-710; Saldaña, 2013:193; Bezuidenhout & Cronje, 2014:235; Miles *et al.*, 2014:73). A code is used as a tag or a name (Bryman, 2012:709-710) or a descriptive label

(Harding, 2019:107) associated with different fragments or chunks of text data that share some commonality in a data set (Miles *et al.*, 2014:71). Coding is the process whereby data is broken down into component parts, and codes or names are then assigned to these data chunks. Coding is primarily an interpretive act (Saldaña, 2013:193). Coding is the process used for identifying prominent themes, ideas and patterns in the data (Bryman & Bell, 2011:42). Any individual extract of coded data can be linked to more than one theme where it has relevance. Therefore, an extract may be uncoded, coded once, or coded many times (Braun & Clarke, 2006:89). In this study, coding was applied to data derived from depth interviews and focus group sessions.

Thematic analysis depends on rigorous coding and recoding of segments of data (Bailey, 2007:154). Miles *et al.* (2014:72) confirm that coding *is* analysis (emphasis in the original). They believe that coding is deep reflection about and, thus, deep analysis and interpretation of the data's meanings (Miles *et al.*, 2014:72). Coding drives ongoing data collection and typically leads to a reshaping of the researcher's perspective and instrumentation for the next round (Miles *et al.*, 2014:93). There is a huge diversity in coding systems and no right or wrong way to go about coding data (Braun & Clarke, 2006; Harding, 2019:172). Most of the coding for this study was done in terms of descriptive coding for nouns, process coding for verbs, pattern coding for themes, and *in vivo* coding to reflect the voices of participants (Saldaña, 2013; Miles *et al.*, 2014:74).

Miles *et al.* (2014:73, 86) describe two major stages in the coding process: first-cycle coding and second-cycle coding. *First-cycle coding* assigns initial codes or descriptive labels to chunks of data during the initial cycles of coding. *Second-cycle coding* uses the initial codes from the first cycle and clusters them together into a smaller number of themes or constructs called *pattern codes*. Second-cycle coding corresponds to the next phase of data analysis, Phase 4, when themes were developed.

Coding is a form of data analysis that drives and redirects data collection through an iterative process. The ultimate power of field research lies in the researcher's emerging understanding of what is happening and why (Miles *et al.*, 2014:93). It continually reshapes the perspective of the researcher and the design of the instrumentation for the next cycle of data collection.

Coding can be done manually or by means of sophisticated computer-assisted qualitative data analysis software (CAQDAS) (Bryman, 2012; Saldaña, 2013). CAQDAS does not do the coding. It efficiently stores, organises, manages, and reconfigures data to enable human analytic reflection (Saldaña, 2013:28). Using CAQDAS is claimed to be more efficient than analysing data manually. It facilitates more complex forms of analysis and it enables the researcher to think more clearly about the data (Harding, 2019:110). Both Bryman (2012) and Saldaña (2013) give a comprehensive overview of the application of CAQDAS software for coding. Saldaña (2013:40) provides practical and comprehensive guidelines for manual coding. The framework method is just one example of a manual process (Smith & Firth, 2011; Gale *et al.*, 2013).

The main advantages of CAQDAS relates to its efficiency. It makes the coding and retrieval of coded data much faster and more efficient (Bryman, 2012:591-593). Electronic data such as video and sound recordings, photographs, drawings, and electronic maps can be used and processed as data. Bryman (2012:593) and Harding (2019:111) warn against the temptation of qualitative researchers to quantify findings from studies done using the CAQDAS software and the risk of fragmentation of coded textual data. These concerns were noted and heeded in this study.

NVivo software, a well-known and powerful version of CAQDAS, was used in this study as a resource (Bryman, 2012; Harding, 2019:169-173). The researcher used the student version of the software in terms of a licence agreement with the supplier.

Conceptually, the identification of themes takes place after data has been coded and before theory is developed. However, in practice, coding, thematic analysis, and theory development are simultaneous and iterative processes (Bazeley, 2013:191-192; Bezuidenhout & Cronje, 2014:230). The activity of identifying themes falls somewhere in the process between coding and theory development (Bazeley, 2013:191).

#### **Phase 4: Searching for themes**

Phase 4 begins after the entire data set has been coded for the first time and collated. At this stage, a long list of initial codes, representing the transcribed data, is also available. Phase 4 documents the iterative process of converting the initial list of codes into themes and sub-themes and into higher-level concepts. The search for themes entails the clustering together of initial codes that seem to relate to one another. Codes are analysed and clustered to form themes and sub-themes (Braun & Clarke, 2006:89). The researcher also starts to think about relationships between codes, between themes, and between themes at different levels.

Saldaña (2013:194-198) refers to this phase as “second cycle coding” or “code mapping”. Braun and Clarke (2006:89) refer to it as “searching for themes” among the codes. Second-cycle coding clusters initial codes obtained through first-cycle coding together into *pattern codes* or main themes, themes, and sub-themes. The relationships among codes, sub-themes, themes, main themes, and overarching themes are also considered. Code mapping brings order, meaning and structure to the data by means of several iterative cycles of analysis of the initial codes and initial themes.

Sufficient data abstracts and vivid examples that capture the essence of a theme must be included in the analysis to demonstrate the “prevalence of the theme”. Braun and Clarke (2006:82) argue that the “keyness” of a theme is not necessarily related to the prevalence of related data in the data set, but rather to “the extent that it captures something important in relation to the overall research question”.

Interpretation of data is not only about interpreting the data but also about addressing rival explanations for the data. It may inform the formulation of new ideas, themes, concepts, and theories (Mouton, 2001:109; Bezuidenhout & Cronje, 2014:243).

Miles *et al.* (2014:86) describe the pattern codes that result from this phase as explanatory or inferential codes that identify an emergent theme, configuration, or explanation. Pattern codes or themes are equivalent to meta-codes that integrate initial codes into “more meaningful and parsimonious units of analysis”. It allows for data analysis during data collection. Pattern coding also assists the researcher to elaborate an evolving, more integrated cognitive map to interpret data. Pattern codes normally summarise clusters of codes from first-cycle coding as themes, causes or explanations, relationships among people, or as theoretical constructs and processes (Saldaña, 2013:266; Miles *et al.*, 2014:87). The authors warn that pattern coding is not an exact science but essentially an “interpretive act”.

The term *pattern code* is not used in later chapters of this dissertation, but rather the terms: *theme* or *sub-theme*. Sub-themes are essentially themes-within-a-theme (Braun and Clarke, 2006:92). Sub-themes provide structure to large and complex themes and indicate the hierarchy of meaning in the data.

Braun and Clarke (2006:89-90) recommend the use of visual representations such as tentative tables, thematic maps, or mind-maps to allocate codes to themes. Thematic maps link overarching themes, main themes, themes, and sub-themes to one another and to corresponding codes.

Interpreting coded data and theorising about it also consist of finding similarities and differences by using the constant comparative method (Harding, 2019:119). The method of

constant comparison is an important tool in the process of generating theory and was borrowed from grounded theory (Glaser & Strauss, 1967:105). The method “entails constantly comparing new data with existing data, concepts, and categories. It also entails comparing categories with each other and categories with concepts” (Bryman, 2012:710). Harding (2019:129-142) demonstrates in vivid detail how to use the method of constant comparison in a thematic analysis to identify and study similarities and differences between cases.

The convention of using the term “themes” instead of “categories” was adopted in this study.

An additional and more challenging approach to interpret data consists of a search for conceptual themes that share the following features (Harding, 2019:176-177): They may be drawn from diverse sections of the interview data. They may be latent without any direct reference being made to them in the data. They may not be identified during the first reading of the transcripts. They may contribute to a better understanding of patterns of relationships among other themes and relationships. They may inform theory building, especially micro-theory.

Qualitative data analysis tends to be an ongoing process that continues throughout data collection (Bailey, 2007:125; Dawson, 2007:119). The processes of data collection and data analysis continue in an iterative and adaptive manner as the researcher develops new insights and understanding regarding the research process and the phenomenon being studied. Thematic analysis progresses from a descriptive mode where themes focus on the explicit or semantic meanings of the data to a more interpretative mode. Interpretative analysis aims to understand the links among the underlying ideas, assumptions, ideologies, and other aspects that inform the semantic content of the data (Braun & Clarke, 2006:84; Morgan, 2018:340).

Interpretation of data and themes is “context sensitive” (Bezuidenhout & Cronje, 2014:242). Interpretation of data, according to Mouton (2001:109), involves the formulation of “hypotheses or theories that account for observed patterns and trends in the data”. Mouton adds that interpretation also means “relating one’s results and findings to existing theoretical frameworks and models”. A theoretical framework can be described as a “blueprint” (Grant & Osanloo, 2014) for the study as it underpins, guides, and structures the research by means of existing theory (Green, 2014).

The result of Phase 4 consists of candidate themes and sub-themes and all the collated data and extracts of data upon which they are based. An initial thematic map may provide a useful visual display of the relationships among tentative themes, sub-themes, and codes. Thematic analysis is most effective when properly framed themes address the research questions directly and when links among themes are explored (Braun & Clarke, 2006:84; Bailey, 2007:155).

### **Phase 5: Reviewing the themes**

Phase 5 is concerned with the refinement of the set of candidate themes produced in Phase 4. Two objectives are pursued in this phase (Braun & Clarke, 2006:91).

First, the collated extracts for each theme need to form a coherent pattern. Either the codes constituting the theme have to be adjusted or the candidate theme has to be adjusted in order to ensure a proper fit between the codes and the theme. If necessary, Phase 4 has to be repeated until this objective is achieved. Themes that lack sufficient supporting data can be cancelled or combined and some other themes may have to be split into more than one theme or sub-themes. Data within each theme needs to be consistent and coherent. Themes have to be distinctive.

Second, the validity of the themes in relation to the entire data set needs to be confirmed. Modifications to themes may be required until the thematic map fits the data set. Phase 5 is

completed once the thematic map accurately reflects the meanings evident in the whole data set (Braun & Clarke, 2006:91-92).

This phase may require that some data have to be recoded and that some themes have to be adjusted until the codes, sub-themes, themes, main themes, and overarching themes provide a true and coherent reflection of the entire data set in terms of the study design and objectives. Coding should be terminated once the marginal improvement of the analysis through further work becomes negligible (Braun & Clarke, 2006:92).

The end product of this phase can be depicted as a satisfactory and consistent thematic map of the data that address the research question (Braun & Clarke, 2006:92). Once the above objectives have been met, the themes can be defined and named.

### **Phase 6: Defining and naming themes**

Phase 6 starts off with a satisfactory thematic map of the data. It is concerned with the definition and refinement of each theme and sub-theme that appear in the final analysis (Braun & Clarke, 2006:92). This phase requires another cycle of reading the data associated with the themes and confirming the essential aspects of each theme. For each theme, a detailed analysis is written that ‘tells the story’ of that theme in relation to the other themes and with reference to the research question within the context of the entire study. Data associated with each theme is presented as ‘a coherent and internally consistent account’ of the essence of the theme.

Thematic maps can be used very effectively to illustrate the relation of the themes and sub-themes (Braun & Clarke, 2006; Miles *et al.*, 2014). These analyses contain selected quotations from the data that illustrate important and interesting aspects of the themes and sub-themes. The names of themes in the final analysis should be descriptive, concise, and punchy.

Once the themes have been defined and named the last step of the thematic analysis may proceed.

### **Phase 7: Producing the report about methods and findings**

Phase 7 entails the writing of the report on the methods employed and the resultant findings. The report contains a synthesis of fully developed themes, patterns, trends, and relationships observed in coded data, into larger coherent wholes (Mouton, 2001:109). The report of the thematic analysis has to provide “a concise, coherent, logical, non-repetitive and interesting account of the story the data tell – within and across themes” (Braun & Clarke, 2006:93). Interpretation of findings involves the augmentation of this synthesis with theoretical constructs from the literature and the researcher’s own interpretation of the meaning of the data in its context. The aim of the analytic process is to relate case-specific meanings and findings to a broader multidimensional and more general context (Bezuidenhout & Cronje, 2014:242). Research findings and results can then be compared with existing theoretical frameworks.

Theory building often starts once themes have been identified in the coded data (Morgan, 2018). Morgan (2018:339) argues that “models that connect themes are the most common form of theory building”. Such models amount to “low-level theories” whereas more powerful theories “explain why those particular concepts are the key elements that make up the theory, and they explain why those concepts are related to each other in the ways that they are” (Morgan, 2018:340). Morgan’s definition of models corresponds with the ‘thematic maps’ of Clarke and Brown (2006). His classification of models includes four categories of models, namely hierarchies, timelines, overtime processes, and cycles (Morgan, 2018:341).

A distinction is made between themes and models that merely represent data in a descriptive manner, and “interpretive models that explain how sets of themes are related to each other”



(Morgan, 2018:344). Interpretation of the themes produced by thematic coding is done through the integration of existing general theoretical constructs (from the literature review), the researcher's sense of the specific thematic meanings imbedded and observed in the text analysed, and the researcher's understanding of the reciprocal influences of the observed phenomenon and the bigger context upon one another (Bezuidenhout & Cronje, 2014:242).

The analytic narrative of the analysis needs to make a convincing argument in relation to the research question. It must be framed within the context of the study and in terms of the theoretical frameworks that apply. Thematic analysis is enhanced when the research findings are linked back to existing literature and theoretical frameworks. For illustrative purposes carefully selected verbatim quotations from field work are normally included when themes are presented (Bailey, 2007:157; Bazeley, 2013:191). Data abstracts that substantiate the findings must be easily identifiable in the report.

Braun and Clarke (2006), Miles *et al.* (2014:107-112) and Harding (2019:178) strongly recommend the use of visual displays, such as matrices, analytic tables, models, and network diagrams to condense major data and study findings, and/or present conclusions. A coherent display of such data serves as a powerful communication tool and assists the reader in understanding the research process and its results. However, displays do not speak for themselves. Accompanying text should help the reader to interpret the displays.

The advantages and disadvantages of the thematic analysis method are discussed next.

### ***Advantages of thematic analysis***

Thematic analysis has reached a stage of academic maturity (Braun & Clarke, 2006). The process allows for a "thick, rich and detailed description of meanings" in terms of findings of a study (Bezuidenhout & Cronje, 2014:228). An important strength of the subjective, value-sensitive, and qualitative approach to data analysis followed here was that it uncovered aspects of a complex reality that quantitative methods could not reveal. Thematic analysis does not require the same level of detail in the transcriptions of recordings as some of the other types of content analysis processes (Braun & Clarke, 2006:88).

Thematic analysis is a flexible method that "can be applied *across* a range of theoretical and epistemological approaches" (Braun & Clarke, 2006:78). It is compatible with the constructionist paradigm adopted in this study, and it can provide "a rich and detailed, yet complex account of data" (Braun & Clarke, 2006:78).

Thematic analysis can be applied at different levels of reality, and within different theoretical frameworks (Braun & Clarke, 2006:81). Braun and Clarke explain how a thematic analysis can progress from a descriptive semantic or explicit level to an interpretative level where theory can be developed. A thematic analysis applied at the interpretive level can therefore be informed by a more sophisticated "causal layered analysis" (CLA) approach (Inayatullah, 1998; 2004). A multi-level application of thematic analysis requires that the researcher interacts with participants in such a way that they "generate rich and complex insights" (Braun & Clarke, 2006:98).

Another advantage of thematic analysis is that it detects repeated patterns and themes within the respective data sets. This capability is required to study complex phenomena as explained above. It is important that "the theoretical framework and methods match what the researcher wants to know" (Braun & Clarke, 2006:80).

### ***Addressing the limitations of qualitative data analysis***

According to some authors a specific limitation of qualitative data analysis is that the analytic procedures of how to carry out these analyses have not been codified comprehensively

(Bailey, 2007:125; Bryman & Bell, 2011:336). However, Braun and Clarke (2006; 2013) demarcate thematic analysis properly as a specific method for qualitative data analysis that is theoretically and methodologically sound.

Potential pitfalls associated with thematic analysis are linked to poor execution of the method. Typical pitfalls include superficial analysis without making sense of the data, using interview questions as the resulting 'themes' that are reported, incoherent and inconsistent configuration of themes, failure to include compelling extracts to demonstrate the themes, and mismatches or contradictions between data, analytical claims made, and theory (Braun & Clarke, 2006:94-95).

Qualitative data analysis and interpretation is described as "a long and arduous process" which is "messy, ambiguous, and time consuming" (Bezuidenhout & Cronje, 2014:229,233). "Qualitative analysis transforms data into findings. No formula exists for that transformation. Guidance, yes. But no recipe" (Patton, 2002:432). Therefore, it is important to report on the analytical procedures and processes applied in this study as fully and truthfully as possible.

Implementation of all the data collection methods and the thematic analysis method is described below. Model-building concepts that are used to present the research findings are discussed next.

#### **2.4.4 Model-building as research method**

Model-building is applied in this text as a research method to inform the development of a decision-making framework in Chapter 7 that simulates or presents the phenomenon of decision making (McLean, 1977:144; Mouton, 2001:177). Model-building as part of a study allows the researcher as *bricoleur* to bring together several concepts that emerge from the research results and the literature consulted. The resulting model can be defined as a *bricolage*, an innovative combination of existing concepts from the literature and empirical findings, to present a new understanding of decision making within a complex (municipal) context (Kincheloe, 2001).

Model-building theory informs the process model of decision making in Chapter 5, the decision framework (or model) discussed in Chapter 7, and the presentation of research findings. Empirical findings are presented and summarised in a useful format such as a map, a model, or a framework. The theoretical aspects of model-building are described in Appendix B.

The framework or model developed for this study is referred to as a 'logic model' with a descriptive character. Patton (2002:162-164) defines a logic model as a logical, reasonable, and defensible depiction of the connections between programme inputs, activities and processes, outputs, immediate outcomes, and long-term impacts in graphical form. Logic models are descriptive.

The conceptual model of municipal decision making that is developed in Chapter 5 reflects a *bricolage* consisting of the above theoretical concepts and constructs within a complexity framework (Bezuidenhout, 2014). It also includes aspects of Weber's ideal types (Stanford Encyclopedia of Philosophy, 2017), elements of idea models (Mitchell, 2009), and features of logic models (Patton, 2002). In Chapter 5, this model is used in a deductive manner to reflect on the nature of current decision-making practices of the municipality.

A framework for decision making that links the core aspects of this study is developed in Chapter 7. The framework synthesises and integrates key concepts contained in the literature review (Chapter 3), features of the municipal context (Chapter 4), aspects of actual decision-making practices (Chapter 5), and the adaptive capacity of the municipality (Chapter 6). The decision-making model that is developed in Chapter 5 is contained within this framework.

In terms of the four-dimensional typology proposed by Mouton (2001:144-146), the model-building study employed in Chapter 5 can be described as follows. It is based on a combination of empirical data and non-empirical data and a combination of primary and secondary textual data. Primary data originates from natural field settings where control over research conditions is very low.

### ***Advantages of model-building***

A key advantage of model-building is its “reductive property” (Bless *et al.*, 2006:16), or the inclusion of only the relevant meaning-making features of a phenomenon and the specific exclusion of real, but unimportant, features. The principle of parsimony in describing a theory, or the application of “Occam’s razor”, refers to the preference for simple (but not oversimplified) theoretical explanations of phenomena rather than complicated ones (Bezuidenhout, 2014:47). Even simple models have been used to advance science and policy in various contexts. Such models “have led to new insights, new ways of thinking about complex systems, better models, and better understanding of how to build useful models” (Mitchell, 2009:222).

Models are convenient means to present research findings and to develop theory. Morgan (2018) demonstrates how researchers can develop low-level theories, informed by models that connect themes based upon coded textual data. For a prime example, see Braun and Clarke (2006).

An additional benefit and strength of good models is that they “bring conceptual coherence to a domain of science and simplify our understanding of the world” (Mouton, 2001:177). A good model is one that can be validated and tested (Mouton, 2001:177), and that is adequate in its presentation of reality (Bless *et al.*, 2006:16). An advantage of a model is that it can be depicted visually in a simple format (Bezuidenhout, 2014:48).

### ***Addressing the limitations of model-building***

Although models are used to illustrate the ‘what’ and the ‘how’ of complex concepts and phenomena they are limited in their capacity to explain the ‘why’ of the concepts involved in a theory (Bezuidenhout, 2014:48). Thus, models are used to depict the relationships between concepts of a theory, but they cannot be used in isolation to explain a theory.

The quality of a model is very sensitive to both the quality of the assumptions upon which the model is based and the quality of the empirical data to which the model will be fitted (Mouton, 2001:177). Therefore, the assumptions regarding the model and the data processing steps have to be documented properly and comprehensively.

All the above research methods for collection, analysis and interpretation of field data are activated and applied once the researcher enters the research field. The following section contains an overview of the events and processes that resulted in a relatively easy and gradual entry into the inner circles of the Hessequa municipality in search of useful research data.

## **2.5 Entering the research field**

Entering the research field of the Hessequa municipality in 2019 was uncomplicated and trouble-free. Formal entry into the decision-making arena of the municipality was gained through the known sponsors approach (Patton, 2002:312-313). These sponsors were a supportive municipal manager, the mayor, and the director for corporate affairs. Since 2004, the researcher had developed trustworthy relationships with all the senior officials and most of the serving and former councillors through active involvement in municipal affairs and projects. Field research depends to a large extent on these relationships (Bailey, 2007). Entering the field involved negotiations with gatekeepers to get access to resources (Bryman, 2012:85; 151).

Confirmation of municipal support and approval of this study was required before the research proposal could be approved by the university. Formal written approval by the former municipal council (serving during the 2011 to 2016 term) for this project was granted on 26 May 2016. (See Appendix C for the confirmation letter from the municipality). An evaluation committee of the SU approved the final research proposal on 9 June 2016.

Shortly after approval of the research proposal, the municipal context including the configuration of gatekeepers (Bryman, 2012:85) changed. A new municipal council was appointed immediately after the nationwide municipal elections on 3 August 2016. Fortunately, some continuity was retained. Both the former municipal manager and the director of corporate affairs who supported the research project were reappointed for another five-year term shortly after the elections. The researcher reconfirmed the relevance and importance of the study for the municipality with the then current officials and councillors.

An updated study protocol, based on a better understanding of the relevant literature and research methods, and a formal request to the municipality to reconfirm its commitment to support the study were prepared and sent to the municipality on 21 August 2018 (see Appendix D). This document contained a detailed request for access to various sources of data, a time frame for data collection, and the research questions. It also contained components of a “research bargain” (Bryman, 2012:151), namely, a promise of the benefits to be gained from the study by both the municipality and the researcher. This request was considered at a municipal portfolio committee meeting held on 14 September 2018 and approved at a subsequent executive mayoral meeting held on 26 September 2018. Appendix E contains the email with confirmation of municipal approval and the conditions that applied to the study. This document stipulated the role of several municipal gatekeepers (Bryman, 2012:151; Harding, 2019:xix) and it referred to various documentary requirements and protocols.

Two meetings with the manager of administration (who was also the manager of the legal department) and his line manager, the director accountable for corporate services, preceded data collection. The interview protocol, conditions for the research to be conducted, the confidentiality agreement, and practical planning issues were discussed during these meetings. The administrative manager organised all the interview sessions with the interviewees and the participants of the focus groups which took place at the municipal offices. The director of corporate services wisely advised that interviews should be conducted before focus group sessions take place. This advice resulted in the following:

- Individuals who participated in the depth interviews had more confidence and a better understanding of the research project before they participated in focus group sessions.
- Better rapport and stronger trust relations were developed for the focus group sessions between the researcher and interviewees who also participated in depth interviews.
- Specific themes and issues that emerged from depth interviews were pursued further and in more depth during focus group sessions.
- Focus groups were used to validate aspects raised during interviews.

Not only was municipal approval required before data collection could start but also ethical approval of the study by the Ethics Committee of the SU.

## **2.6 Ethical considerations**

Ethical clearance for the study had to be obtained from the Ethics Committee of the SU before data collection could start. The documentation and inputs required for this application were prepared and submitted to the Ethics Committee during November 2018. After several rounds of adjustments to the original application, the Ethics Committee approved the final version on 8 March 2019. This approval satisfied a precondition of both the university and the municipality for data collection to commence.

The researcher believed that research done in an ethical manner would contribute to the value of the research findings, the results, and subsequent recommendations. Therefore, the research project was planned and executed with due consideration of the ethical aspects involved and the best interests of all stakeholders involved. The research effort was planned to be sensitive to the privacy of individual participants and to minimise the impact of data collection on participants in terms of time and effort required. Sensitive information about, and from participants was respectfully handled. Both anonymity of participants and confidentiality were protected during the study (Louw, 2014:262-273).

In the following sections, the focus moves towards the execution of field work. Field work included depth interviews, focus group sessions, document searches, field notes and observations. More detailed aspects of the practical application of each of these data collection processes will be discussed next.

## **2.7 Implementation of data collection methods**

Data was collected through the complementary data collection methods of depth interviews, focus group sessions, document searches, field notes and observations made during field work sessions. All the depth interviews and one focus group session were conducted before the start of the Level 5 lockdown period caused by the Covid-19 pandemic on 27 March 2020. One virtual focus group session took place during the lockdown.

This section is structured as follows: Although the actual processes of data collection and data analysis were intertwined and took place simultaneously, the focus of the discussion below is first on the processes of collecting and coding the data. Data collection by means of depth interviews, focus groups, document searches, and field notes is discussed first. Then the process of coding is reviewed. Coding followed a common process for all the transcriptions. Lastly, the analysis and interpretation of the coded data are discussed.

The following sections explain how the research methods were implemented to collect, code, analyse and interpret data. Important related decisions are also discussed.

### **2.7.1 Data collection through depth interviews**

Actual data collection by means of depth interviews and data analysis consisted of the following interwoven activities (Bryman, 2012; Du Plooy-Cilliers *et al.*, 2014):

- Developing and approving the interview guides
- Piloting and reviewing the interview guides
- Designing an initial sampling strategy to identify interviewees
- Conducting depth interviews
- Making transcriptions of interviews
- Coding the transcribed textual data
- Thematic analysis and interpretation of the coded data

Each of these cyclical process steps is discussed next.

#### **2.7.1.1 The interview guides**

The design of the interview guides for the depth interviews and the focus groups was informed by several literature sources (Mouton, 2001:104-108; Miller & Crabtree, 2004:192; Bryman, 2012: 472-473, 712; Patton, 2015:437-442). Due to space limitations, only a few salient points about these guides are noted. Interview guides are used internationally as a flexible instrument to collect qualitative data through semi-structured depth interviews. Standardised key questions are posed to each participant in roughly the same order. The method allows for diverse follow-up questions to pursue important or new issues in more detail. The iterative

process of data collection and data analysis requires a flexible interview protocol (Bryman, 2012:566). Secondary questions are added or modified several times to address new aspects as field work progresses.

The final version of the interview guide for depth interviews appears in Appendix G. Part A of the guide makes provision for administrative notes, introductory and explanatory remarks, while Part B contains the guidelines for the use of the guide. Part C contains introductory questions and standardised, open-ended and broadly phrased main questions with a range of possible detail-oriented questions. Provision is also made for transitions between main questions. The main questions in the guide are aligned with the four research sub-questions of the study that were derived from the literature review that informed the research proposal (Bailey, 2007:100,104). Grand tour questions are often combined with prompts, probes, and follow-up mini-tour questions (Miller & Crabtree, 2004:192-193). Part D contains a conversational interview with non-standardised questions on new themes or emergent issues to explore. Part E concludes the interview. It provides for reflective notes after the interview and to capture salient themes and learning points.

The structure of the interview guide for depth interviews, containing specific, standardised main questions addressing specific research objectives, also served as a descriptive analytical framework for analysis of the data (Patton, 2002:440; Patton, 2015:442).

As fieldwork progressed the responses to the initial main questions reached a saturation point. Several new and seemingly important and related sub-themes emerged. These sub-themes were explored by means of additional secondary questions that addressed issues such as the role of leadership, politics, governance, and tactics in decision making.

The initial version of the interview guide for depth interviews was approved by the Ethics Committee of the SU, the municipal manager, and the legal adviser of the municipality before it was piloted. Subsequent versions of the guide were adjusted to pursue new issues within the approved scope of the study. The main questions remained unchanged.

### **2.7.1.2 Piloting the interview guide**

The initial draft interview schedule was piloted and tested as recommended before actual data collection commenced (Andrews, 2003:35-36; Bryman, 2012:263-264). It was tested on an experienced, prominent, and well-informed official from the municipality responsible for the compilation of the IDP. He was not included in the original sampling frame.

The prolonged pilot interview took place in a comfortable office setting. It lasted two hours and eleven minutes and was recorded on two devices. The interview produced a wealth of rich, useful data as well as several ideas for improvement.

Adjustments to the guide and better formulated instructions shortened the duration of subsequent interviews. Wording was changed or rephrased to accommodate interviewees with a lesser developed vocabulary. The researcher gained confidence in the use of an expensive Philips Voice Tracer DVT6010 audio recorder and a Huawei P8 Lite cell phone. The cell phone proved to be more than adequate for recording purposes.

This single pilot interview established confidence in the research instrument and the application of the recording technology. In addition, it produced a very useful set of quality data, apparently adequate to address the main research questions. Therefore, this data was included in the data *corpus* as provisional data (Andrews, 2003:36).

Next a sampling strategy had to be devised before the interviews could be conducted. The aim of the sampling strategy was to identify knowledgeable individuals who could provide rich and reliable data for addressing the research questions and research objectives.

### **2.7.1.3 Sampling strategy for interviewees**

The sampling frame for depth interviews consisted of knowledgeable individuals who could share their specialised knowledge and experience with the researcher (Patton, 2015:284). This target population included current and former councillors, all the directors, the municipal manager and senior officials. A combination of purposeful sampling, snowball sampling, emergent sampling, and maximum variation sampling was used to identify interviewees. Purposeful sampling was used to identify respondents with a presumed capacity to maximize the richness of information obtained pertinent to the research questions (Miller & Crabtree, 2004:191). Therefore, the municipal manager, the speaker, the leaders of the three political parties represented in the council, and the mayor, were sampled. Purposeful sampling was extended to include a homogeneous sample consisting of all five the municipal officials acting as directors of their respective departments.

Snowball sampling was used to identify four additional interviewees based on references and recommendations made during interviews. These individuals included a former mayor and two former councillors who served during the 2006–2011 term and the 2011–2016 term. The manager of the supply chain was also included in the snowball sample.

Emergent sampling was used to identify three more interviewees. A current councillor was sampled to explain the entire process of recruiting and appointing a councillor. The manager of legal services was sampled to comment on the roles that key people play in municipal decision making. A respected member of the public who had attended all the municipal council meetings from 2016 to 2021 was sampled as he could provide a personal, longitudinal perspective of municipal decision making from the vantage point of an informed community member. His data could be used to verify data from other interviewees.

Maximum variation sampling was used to identify seven additional councillors so that the entire sample of interviewees would represent the three race groups: black, coloured and white, both males and females, all three political parties (African National Congress, Democratic Party, and Freedom Front Plus), experienced councillors who have served more than one term, and inexperienced councillors who have served less than one full term, as well as councillors with tertiary qualifications, and those without. Provision was also made to interview councillors from privileged communities (e.g., Still Bay) and less privileged communities (e.g., Kwanokuthula). Only one councillor did not attend the scheduled interview appointment. However, the non-availability of his inputs was not perceived as critical for the study. Appendix I contains the anonymous demographic data of the final 23 interviewees.

### **2.7.1.4 Conducting depth interviews**

Data collection through depth interviews commenced on 20 August 2019 and continued until 8 October 2019. A total of 20 depth interviews were conducted. A register containing coded data about the interviewees, the dates of the respective interviews, venues where interviews were conducted, and some general comments about each interview is attached as Appendix I. The manager of legal services, acting as the official gatekeeper, made all the arrangements for the interviews with serving councillors and officials. The researcher arranged all the other interviews.

All the participants were familiar with interview procedures and participated actively and in good spirit. All interviews were conducted in Afrikaans, the home language of all but one interviewee. Procedures were conducted in accordance with the confidentiality agreement between the researcher and the municipality, and the requirements of the Ethics Committee of the SU. In almost all the cases an atmosphere of trust and confidentiality was established. Interviewees felt comfortable to disclose inner feelings and sensitive thoughts verbally. Interviewees' requests not to transcribe sensitive parts of the interviews were honoured. Field notes about the setting, the interviewee, the interview, interesting observations, and new

insights were made during and after interviews. The duration of most of the interviews was just longer than one hour. However, the duration of a few interviews lasting more than two hours was still acceptable (Patton, 2002:227).

The last part of each interview was spent on reflecting on the interview, on relationship building and to thank the interviewees for the interview (Miller & Crabtree, 2004:199). The researcher also confirmed with all the interviewees that they could be contacted telephonically or via email for any outstanding issues and questions at a later stage. No incentives were offered to interviewees to participate. During all the interviews the researcher felt comfortable and welcome. Three interviews were conducted during which two interviewees participated simultaneously for logistical and practical reasons. All the interviews produced valuable data.

Two key things happened during the interviews. First, responses to several secondary questions and issues reached a saturation point (Bryman, 2012:421). Second, new variables and themes continued to emerge during subsequent interviews. As a result, the focus of the interview questions moved from saturated themes to the emergent themes. Exploration of new themes caused the scope of the study to grow beyond expectations.

Transcribing the interview recordings soon after the interview assisted the researcher to gain a proper initial understanding of the data. The researcher's evolving and growing understanding of the data was confronted by more questions and issues regarding municipal decision making. Aspects that seemed to be important included the role of 'items' and 'item writers'<sup>1</sup> in decision making, selection criteria in terms of which councillors were recruited, the role of leadership, power, and influence in decision making, organisational and institutional features affecting decision-making capacity, and the adaptive capacity of the municipality.

Revised versions of the interview guide stimulated the generation of additional, rich data, and even more questions! The resulting pattern was that interview discussions continually migrated to unforeseen, unexpected, and surprising aspects of municipal decision making and then reached a saturation point. This pattern repeated itself. New secondary questions and prompts were continuously added to the interview guide. The main questions, however, remained unchanged. Additional detail about data analysis is provided in the respective chapters below.

During the interviews, the researcher compiled a list of 21 purposefully selected decision issues that appeared to be complex. These issues were listed but not discussed in detail. This list was later used in this study as a population from which a few cases of complex decision issues were selected for further analysis in Chapter 5.

Focus group sessions commenced after completion of the depth interviews.

## **2.7.2 Data collection through focus group sessions**

Two focus group sessions were conducted to add depth to the overall investigation. These sessions addressed seemingly important issues that emerged during the interviews. At the first session a group of item writers discussed the role of items and item writers in the decision process. The second session was a virtual session conducted with all the caucus members of the dominant and powerful ruling party. This group discussed the roles of the governing party

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<sup>1</sup> Item writers are officials that prepare documentation that informs decision making by the municipal council and by the various municipal directorates and departments. Normally the councillor(s) representing the ward(s) affected by the decision to be taken is (are) well informed about such decision issues based on field visits, workshops, interaction with experts and consultants, and other sources of information. However, for most other councillors the only information they have available regarding such a decision is in the form of documentation prepared by the item writer. The item writer therefore plays an indirect, but potentially important role in preparing documentation that informs municipal decision making.



and the opposition party in the decision process. Important design aspects considered in preparation for each session are the interview guide and the sampling strategy.

### **2.7.2.1 The interview guides for focus groups**

The original questions in the interview guide for focus groups which were approved by the Ethics Committee of the SU had to be adjusted for both focus groups (see Appendix H for the interview guide for Focus Group 1). The questions contained in the final version of both interview guides emerged as new issues of interest during the depth interviews. The researcher therefore argued that approval by the Ethics Committee for the modified focus group interview guides was not required. The focus group questions were merely derived from the main questions posed during the preceding depth interviews.

The same basic format of the interview guide used for the depth interviews was used for the two focus group interview guides. The municipal manager and the legal adviser approved both interview guides. The focuses of the group sessions informed the sampling of participants.

### **2.7.2.2 Purposes and sampling strategies for focus groups**

The purpose for Focus Group 1 was to explore and understand the role and influence of item writers and items on municipal decision making. This particular focus originated from a hunch of the researcher that item writers and the contents of items may perhaps influence municipal decisions. Focus Group 1 addressed the following two questions:

- What are the features of an item?
- How may item writers influence municipal decision making?

The purpose for Focus Group 2 was to investigate the influence of the powerful caucus of the governing coalition or party on municipal decision making relative to the influence of opposition parties – from the perspective of the ruling coalition. The issue was formulated as follows:

- What are the roles of the governing coalition or party, and the executive mayoral committee in the decision-making processes of the municipality in relation to the role of the opposition party?

A purposive sampling strategy was implemented for both focus groups. In both cases it was possible to get the full sampling frame to attend. In the case of Focus Group 1, purposive sampling coincided with opportunistic sampling (Bryman, 2012:419). The researcher volunteered to facilitate a workshop on decision making directly after the focus group session. The municipal manager then instructed the entire sampling frame of item writers to attend the first focus group session and the workshop thereafter. A total of about twenty experienced item writers and more than thirty less experienced item writers participated in the focus group.

Focus Group 2 was a virtual session during the Covid-19 lockdown period. It was attended by all the members of the caucus of the governing coalition on the instruction of the speaker and mayor. This purposive sample also constituted the entire sampling frame. Only one member could not participate due to electronic connectivity problems.

### **2.7.2.3 Conducting focus group interviews**

Basic focus group procedures and protocols were adhered to in all cases (Bryman, 2012; Strydom & Bezuidenhout, 2014). The ethical codes of the SU and the Hessequa municipality were complied with. Care was taken not to harm any participant in any way and to maintain anonymity of participants and confidentiality.

The legal adviser scheduled both focus groups and the researcher conducted the sessions. A technical assistant attended to the sound recording of both sessions and set up the virtual session. Details regarding the participants, venue, time, and date of Focus Group 1 appear in Appendix J. Appendix K contains the same for Focus Group 2.

### ***Focus group 1: Item writers and their items***

The session was conducted before commencement of the Covid-19 lockdown period in the convenient setting of the municipal boardroom on 23 January 2020. Fifty-five item writers attended the session. They were divided into five groups of ten people each under the guidance of an experienced item writer who acted as facilitator. Each group addressed one question during a breakaway session before the formal focus group session. Group A and Group B each had to provide a consensus answer to the following question:

*What are the features of an item?*

Groups C, D and E, each, had to address the following question:

*How may item writers influence municipal decision making?*

Group leaders summarised their group's response to these questions on a flip chart during a 25-minute breakaway session. After the breakaway sessions all the participants reconvened in the municipal boardroom for the formal focus group session. Group leaders presented the summarised responses from each group as inputs for this focus group session attended by all participants. The researcher facilitated the entire discussion of about one hour. Feedback from group leaders was used by the researcher to stimulate discussion and debate within the larger group. The size of the group did not appear to have any negative effect on the session. More experienced item writers participated very actively. Less experienced item writers mostly observed and shared in the collective learning.

Participants contributed rich data that enriched and clarified the researcher's understanding of the role of items and item writers in the municipal context. Conversations were recorded in accordance with the confidentiality agreement between the researcher and the municipality. Voice recordings were transcribed by the researcher the next day and shared with the director of corporate services for comments and corrections.

### ***Focus group 2: The role of the governing coalition in decision making***

This virtual session took place on 11 December 2020 during the Covid-19 lockdown period via Microsoft Teams. The focus group adhered to the Covid-19 protocols and prescriptions as well as the ethical requirements of both the municipality and the SU. The duration of the session was 90 minutes. The alliance partner from the FF+ and the DA caucus participated.

The focus group session was unfortunately dominated by a few participants despite requests by the researcher for active participation by all caucus members. The behaviour of councillors during the virtual session was very similar to their behaviour during council meetings where the speaker controlled the meeting. Councillors only participated in the discussion on request to share their views. This focus group generated valuable data despite these shortcomings. Data from this session contributed insights that were not available from the depth interviews.

A voice recording of the focus group session made by the municipal sound technician was transcribed by the researcher.

### **2.7.3 Data collection through document searches, observations, and field notes**

Data from depth interviews and focus group interviews were complemented by data from documents, observations, and field notes. Each of these three methods is reviewed next.

#### **2.7.3.1 Document searches**

Documents were sourced through purposive sampling. Document searches were focused on the four objectives of the study as stated in Chapter 1 and on specific decisions<sup>2</sup> that were sampled for analysis (Bryman, 2012:427). (Appendix O contains the list of sampled decisions.)

Documents in hard copy and in electronic format were sourced. Most of the electronic documents of the municipality were sourced from Collaborator, the municipality's electronic data management system, and from the municipal website (<http://www.hessequa.gov.za/>). Collaborator contained a record of all the documentation related to municipal decisions. Access to this database was limited to officials and councillors. The legal adviser arranged access for the researcher to data stored on Collaborator in terms of the confidentiality agreement. Each decision captured on Collaborator had a unique number and this number was the key to all documents associated with such a decision. In a few instances, interviewees provided useful documents in hard copy.

#### **2.7.3.2 Data collection by means of field notes**

Field notes contained detailed and descriptive references about personal reflections, introspection, impressions, interpretations, emotions, feelings, judgements, insights, concerns, frustrations, 'aha-moments', breakthroughs and lessons learned during the research journey. Included were notes taken during meetings, workshops, council meetings, and field work. Field notes also reflected aspects of personal development that were set as objectives for the study.

A special effort was made to write field notes promptly during field work, or as soon as possible after field work sessions. Field notes were captured in A4-size counter books. In addition to field notes, observations contributed valuable data to the study. These observations were captured as field notes.

#### **2.7.3.3 Data collection by means of observations**

Observations contributed rich data to the study (Bryman, 2012; Strydom & Bezuidenhout, 2014). The researcher had actively and passionately participated in many municipal activities and decision processes as a stakeholder since 2004. Observations were captured as field notes under normal operational conditions. Relevant contextual details were included in the notes. Observations were also made during field work sessions, informal conversations with councillors and officials, and during the council meetings that the researcher attended.

Observations focused mostly on aspects related to decision making, the context and atmosphere within which the decision-making processes progressed, behaviour of participants involved, and patterns of decision making, leadership, cultural aspects, and performance of the municipality in general. Specific observations focused on the nature of relationships among stakeholders and actors; on behaviour and body language of people involved in decision making, and on associated meanings; on the way decision issues were framed and interpreted; on awareness of a temporal dimension and a future consciousness; on the nature

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<sup>2</sup> During the interviews almost all the interviewees referred to decisions perceived as good or bad, racist, controversial, difficult or complex, successful or unsuccessful. The researcher listed about 30 decisions related to these different categories if they were mentioned by more than two interviewees. From this sampling frame a few decisions were purposively sampled for further investigation. The document trails of selected decisions were traced on Collaborator.

of a spatial awareness associated with conversations; on a conceptual understanding of the way integrated systems interacted; and on the manner in which decisions were implemented (or not implemented). Attention was given to non-action, inaction, and non-participation during events.

Data collected through direct observations was normally captured as field notes during field work events, or directly after the event during a reflective session. Direct observations of activities, processes, behaviours, groups, contexts, and settings contributed largely to a better contextual understanding of municipal decision making. During the data analysis phase, field notes referring to observations were used for data triangulation purposes, and as a record of the insights that emerged during the progression of the study. Handwritten field notes were not converted into electronic format.

## **2.7.4 Thematic analysis of the data**

Thematic analysis of the interview data was done according to the seven phases of analysis described in Section 2.4.3. Application of the first four of these phases is discussed next. Implementation of the latter phases of the data analyses is reviewed in chapters 4 and 5.

### **2.7.4.1 Phase 1: Transcription of interview and focus group data**

All the depth interviews and focus group sessions were conducted in Afrikaans, the home language of all but one of the participants. Three prolonged interviews of just more than two hours in a single sitting, and 17 shorter interviews varying roughly between 50 and 90 minutes each were conducted (Yin, 2014:110-113). The duration of the 20 interview recordings was 30 hours. Focus Group 1 and Focus Group 2 sessions lasted 60 minutes and 90 minutes, respectively. Voice recordings of the sessions were transcribed in Afrikaans by the researcher within a few days after the events. It took approximately five hours to transcribe one hour of interview recordings, which is within the norm of four to six hours (Miller & Crabtree, 2004:201; Bryman, 2012:484). A total of 310 A4-size typed pages was generated.

A special effort was made to capture as much as possible of the interviewees' feedback in their own words. Less relevant and unimportant portions of interviews were either not transcribed, or summarised as recommended (Bryman, 2012:486; Miles *et al.*, 2014:86). Transcriptions indicated clearly who was speaking. Ellipses were used to indicate missing words and grammatical omissions. Square brackets were used to add words for context or understanding.

Upon completion of the transcriptions, the text was sent via email to the interviewees and participants with a request to return the transcriptions within three weeks with corrections, additional comments, or any relevant amendments to the researcher. Only a few interviewees and participants responded with minor adjustments to the transcriptions.

The transcriptions contained the actual, rough interview data for the study. All the transcriptions were printed in hard copy. Electronic versions of the transcriptions were later imported into CAQDAS for coding purposes.

The process of transcribing the interviews offered the researcher a good opportunity to acquaint himself with the data.

### **2.7.4.2 Phase 2: Familiarisation with the data**

The researcher familiarised himself with the data through actively participating in the interviews and focus group sessions. He transcribed all the voice recordings himself and compared the typed text with the voice recordings to confirm their accuracy. The many hours spent listening to the voice recordings, typing, and transcribing the data was time well spent. Each transcription was read through after completion of the transcription. Interacting with the data in

this intensive manner constituted the first step of analysing the data. It also sensitised the researcher for possible codes, themes, links, relationships, and patterns within the data.

Hard copies of all the transcriptions were read more than once before the decision was made to use CAQDAS as a resource for coding. The first rounds of active reading of the transcriptions involved a search for patterns, meanings, similarities, differences, surprises, contradictions, and themes hidden in the data. The use of hard copies of all the transcriptions made it possible to make notes, to underline text and to read and reread the material.

The familiarisation process continued during all the coding phases. By the time CAQDAS and NVivo were introduced, the researcher already had a very good knowledge and understanding of the data. Electronic copies of the transcriptions were read a few times when NVivo software was used for consecutive cycles of coding and the development of themes. The coding process was interrupted three times for extended periods when the researcher was hospitalised. When coding resumed, all the transcriptions were read again. As a result, the researcher had a very thorough understanding of the data when the more detailed analysis of the data commenced.

### 2.7.4.3 Phase 3: Coding of transcribed data

Coding was limited to transcriptions of interview and focus group recordings. This data served as primary sources of data for specific parts of the study. Documentary data, observations and field notes were not coded.

The iterative and entangled processes of reading the interview transcriptions, coding, adjusting the interview protocol and conducting interviews proceeded through several cycles (Bezuidenhout & Cronje, 2014:235; Harding, 2019:147-174). First-cycle coding was done twice, first manually and later by means of CAQDAS. Second-cycle coding in search for patterns or themes was first done by means of a CAQDAS package called NVivo Version 12 (NVivo-12). Later rounds of second-cycle coding involved manual processes on paper as well.

First-cycle manual coding proceeded as follows: The very simple initial coding frame for the study was derived deductively from the four broad and overarching themes presented by the four research sub-questions. It consisted of four *a priori* thematic codes or parent codes that were developed deductively before formal coding started (Harding, 2019:223). The four research sub-questions and the corresponding overarching themes or parent codes were inspired by a deductive interpretation of the literature that informed the research proposal and the conceptual design of the research. The four overarching themes were the 'context', the 'decision processes', 'decision-making entity', and 'framework for decision-making'. This first basic framework was used for the initial manual coding cycle.

Manual coding of the first few interview transcriptions started off on Microsoft Excel, using the framework method before the use of CAQDAS was considered (Gale *et al.*, 2013). Table 2.1 shows an example of a data extract with the four codes resulting from first-cycle coding. (The extract was translated from Afrikaans into English by the researcher.)

**Table 2-1 Data extract from an interview with initial codes**

Data extract from interview on 4 September 2019 (page 4)	Initial codes
Financial factors are the most important, by far. Can we afford it? Most municipalities in SA are bankrupt. A council's decisions and the financial plan provide guidance for decision making. When [project] proposals are made to the council ... costs are considered first. You must prioritise... The CFO fights about costs, and I fight for the community. I realise that the CFO is right if we cannot afford it.	Decision criteria. Economical context. Financial quotes. Conflict.

Manual coding was applied to all the interview transcriptions. The resulting inductive codes were linked to the four overarching themes. In some cases, the same code was linked to more than one overarching theme. See Appendix N, Table N-1 for the coding frame with overarching themes and corresponding initial codes that resulted from first-cycle manual coding.

Two processes contributed additional codes to the initial coding frame as coding progressed. First, additional data items contained new aspects with corresponding new codes. Second, some interviews generated more questions and issues. New issues were addressed in subsequent interviews, and this produced new initial codes. Most coding was done in terms of descriptive coding and process coding. Coding and recoding continued during subsequent cycles of reading and reflection. Manual coding was concluded when the last interview transcript was coded.

Manual coding proved to be a very slow and cumbersome process to analyse the large volumes of transcriptions. References to CAQDAS in Bryman (2012:590-609) guided the researcher to the internet. Both NVivo software and ATLAS.ti software appeared to be adequate for the required purpose. The decision to buy and use NVivo-12 was taken after evaluating both software packages and reviewing the literature about their application (Bryman, 2012; Harding, 2019).

The initial coding frame in Excel format and the interview transcriptions were transferred to NVivo-12. NVivo-12 uses the term 'node' to denote a code, category, or a theme (Bryman, 2012:596; Harding, 2019:169). The researcher upgraded his NVivo-12 version with a later version of NVivo. This later version of NVivo made provision for so-called *parent codes* and related *child codes*. Individual child codes represented aspects of a common parent code. This facility of NVivo-12 allowed for multiple levels of parent codes relative to corresponding child codes. Parent codes could be used to capture themes, and hierarchies of child codes could be used to capture sub-themes and individual codes. NVivo software offered a sophisticated process for coding which was far more efficient and advanced than manual coding.

First-cycle coding by means of CAQDAS proceeded as follows: A second round of reflecting and coding started when NVivo-12 was used to code all the interview transcripts. Coding was done in terms of the initial manual coding frame which was transferred from Excel to NVivo-12 (see Appendix N, Table N-1 for the manual coding frame). This second round of open coding, based on a better understanding of the data, resulted in several new and modified codes, as well as the removal of some codes, combination of codes, and adjustments to codes.

First-cycle coding of interview data was terminated once all the data was coded in NVivo-12 format. The important process of constant comparison was employed during all the cycles of coding (Glaser & Strauss, 1967:105; Bryman, 2012:568, 710). The coding frame resulting from first-cycle coding on NVivo-12 was now saturated. A data extract from NVivo-12 coded for 'conflict' and 'economic context' is shown in Figure 2.2.



**Figure 2-2 Example of a data extract coded for 'conflict' and 'economic context'**

The researcher translated the extract from Afrikaans into English:

*There is always the struggle between the technical manager and the CFO [chief financial officer]. They [financial department] evaluate matters from a strictly financial point of view, which is not wrong. They look at the financial plan and say that Hessequa municipality spends R80 million per year and whether you stand on your head, and whether you need to expand the water purification capacity it is cut out [of the budget]. This is the type of decision that is very short-sighted.*

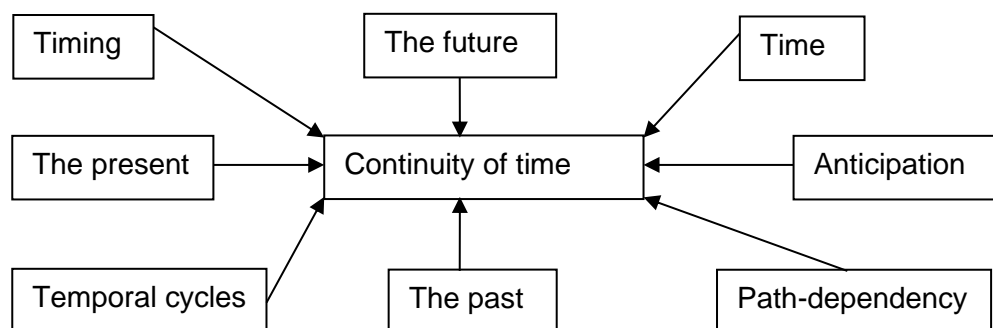
Focus group interviews were coded with NVivo-12 after completion of first-cycle coding of the depth interviews. The code book and coding frame resulting from the coding of the depth interviews were used for coding of focus group transcriptions. NVivo-12 was used to continually update the code book during the coding process.

A criticism against coding is the risk of losing the context of various data extracts and codes (Bryman, 2012:578). Therefore, data extracts were selected in such a way that the core part of the code was 'sandwiched' within relevant contextual data. The convenient referencing facilities of NVivo-12 made it possible to recombine data extracts with their contextual data. Once first-cycle coding of both the depth interviews and the focus group interviews was completed second-cycle coding in search of patterns or themes started.

#### 2.7.4.4 Phase 4: Searching for themes

Second-cycle coding aimed to identify, understand, and explain emergent themes and configurations in the data in relation to the research question and the research objective (Miles, Huberman & Saldaña, 2014:86). This section provides a high-level overview of the search for themes. Phase 4 of the thematic coding process is discussed in detail in chapters 4 and 5. The search for themes was informed by the respective research sub-questions.

Second-cycle coding with NVivo-12 focused on the search for themes that presented patterns in the data. The search for themes entailed the clustering together of initial codes that appeared to relate to one another. New themes or parent codes were added, namely 'complexity', 'controversial issues', 'decision', 'decision makers', 'examples of decisions', 'leadership', 'organisation', 'power' and 'recommendations'. Provision was made on NVivo-12 to capture 'quotable quotes' (i.e., references or quotations) relating to different codes as a parent code. (See Appendix N, Figure N-8.) Verbatim quotations were used to substantiate or illustrate some of the findings in the final report (Bryman, 2012: 697). Figure 2.3 contains an example of a cluster of codes that relates to a common theme, namely *continuity of time*.



**Figure 2-3 A cluster of codes linked to the theme 'continuity of time'**

This concluded the first round of second-cycle coding or pattern coding in search for themes.

During a second round of second-cycle coding, the focus was put on hidden and latent themes and constructs that had been missed during earlier rounds of coding. This round of coding was done based on a more thorough and a more holistic understanding of the data *corpus* and upon more reflection about the data. Hidden themes that now surfaced included 'trust', 'priorities', 'decision criteria', 'relationships among stakeholders', 'worldview', and 'points of view'. Themes identified in the data thus far are listed in Table 2.2 below. Until this stage the search for themes was not informed or guided by the focus of any research question but rather by the overall theme of municipal decision making. More focused second-cycle coding that addressed the research question of each chapter is discussed in the respective chapters.

**Table 2-2 Cycles of coding and overarching themes for each cycle**

<b>First-cycle coding:</b>	<b>Overarching themes</b>	<b>Comments</b>
<b>First round of first-cycle coding: Manual coding</b>	Context Decision processes Decision-making entity Framework for decision making.	All coding was done in terms of four overarching themes that were derived deductively from literature. Manual coding produced all the codes listed in Appendix N, Table N-1.
<b>Second round of first-cycle coding: CAQDAS coding with NVivo-12</b>		
<b>Second-cycle coding:</b>	Themes, main themes, and sub-themes added.	Second-cycle coding was done on NVivo-12 first, and then manually.
<b>First round of second-cycle CAQDAS coding with NVivo-12</b>	Complexity; controversial issues; decision; decision makers; examples of decisions; leadership; organisation; power; recommendations; quotable quotes.	First and second rounds of second-cycle coding produced themes without linking them necessarily to the overarching themes of chapters.
<b>Second round of second-cycle CAQDAS coding with NVivo-12</b>	Trust; priorities; decision criteria; relationships among stakeholders; worldview; points of view.	
<b>Subsequent rounds of second-cycle coding in manual mode on paper for each chapter individually</b>	Coding was done in relation to the specific research question associated with the specific chapters.	Subsequent rounds of second-cycle coding for main themes, themes, and sub-themes were focused on the overarching theme, research question and context of chapters 4, 5, 6 and 7, respectively.

Misfortune interrupted this study three times. During early March 2020 the researcher was diagnosed with a critical condition. After radical treatment in April 2020, followed by chemotherapy, a second operation in March 2021 and a third one in July 2021, the research project resumed. Long delays in the research process effectively resulted in several fruitful reviews of earlier cycles of coding so that the researcher could refresh his mind.

Only marginal changes were made to the coding frame, themes and sub-themes during these reviews of second cycle coding. This phase concluded with a tentative framework of main themes, themes, and sub-themes for each overarching theme of the study that related to a specific research question and the corresponding research objective. Coding frames and thematic maps relating to the research sub-questions are provided in the relevant chapters.



#### **2.7.4.5 Phase 5: Reviewing the themes**

This section only provides an overview of the review of themes. The detailed review of themes associated with specific research questions is discussed in the respective chapters.

In chapters 4 and 5 the candidate themes that were defined during Phase 4 of the thematic analysis were refined further during Phase 5 of the analysis. Refinement of themes entailed the following: First, the coherence of collated extracts for each theme was confirmed, often after adjustments had been made to the candidate themes, sub-themes, and the clusters of related codes. Second, the validity of themes and their relevance in relation to the data *corpus* and the research question were confirmed. In the process, some themes were adjusted, or merged with others, or split into more than one theme or sub-themes. Themes with insufficient supporting data were cancelled. Table 2.3 contains a sample of themes that were merged when the themes were reviewed.

**Table 2-3 Examples of themes that were merged**

Actors using power	Merged with	The use of power
Conflict among stakeholders	Merged with	Conflict
Decision issues in the IDP	Merged with	Issues for decision
Sources of decision issues	Merged with	Issues for decision
Interests and aims of main actors	Merged with	Interests and aims
Strategies and tactics of main actors	Merged with	Strategies and tactics
Temporal context	Merged with	Temporal awareness

The final version of each theme and sub-theme was distinctive and the data within each was coherent and consistent. In some cases, data was recoded, and codes were re-clustered into new themes until the codes, sub-themes, themes, main themes, and overarching themes provided a true and coherent reflection of the entire data set in terms of the research question and objectives. The product of this phase was a set of codes, sub-themes, themes, and main themes linked to an overarching theme and the corresponding research question of each chapter. A thematic map provided a visual summary of the thematic analysis for each chapter.

After reviewing the themes, the themes could be defined and named.

#### **2.7.4.6 Phase 6: Defining and naming themes**

The definition and naming of themes are described in the various chapters according to the methods discussed in Section 2.4.3 above.

Note that details regarding the definition and naming of themes relating to Chapter 5 are included in Appendix P.

#### **2.7.4.7 Phase 7: Producing the report on methods and findings**

Additional detail about the application of the latter phases of the thematic analysis method and the various research findings relating to the four research sub-questions are reported in the respective chapters. Phase 7 concludes with a summary of the research design in the form of

Table 2.4 below. This table corresponds with the conceptual design of the study as presented in Table 1.1 and Table 2.1. Research findings are reported in chapters 4, 5, 6 and 7. Chapter 8 concludes the study. Table 2.4 shows the relationships between the chapters, the research questions, and aspects of the research design.

In Chapter 4, the unit of analysis for the first research sub-question is the internal and the external context of the Hessequa municipality. A traditional literature review and empirical data inform the chapter.

Chapter 5 addresses the second research sub-question in terms of empirical data. The focus is on municipal decision-making practices and processes at a systems level or macro level that emerge from decision-making processes at lower hierarchical levels.

The third research sub-question is addressed in Chapter 6. The adaptive capacity of the municipality is evaluated in terms of a novel adaptive capacity framework. The municipality, modelled as a CAS, is the unit of analysis.

In Chapter 7, the fourth research sub-question is addressed. The unit of analysis is a decision-making framework. The framework is based on insights gained from the literature and the empirical findings. Model-building is used as a research method in Chapter 7.

Chapter 8, the final chapter, concludes the study.

#### **2.7.4.8 Exercising reflexivity**

Exercising reflexivity throughout the entire research project allowed the researcher to do proper self-examination and quality control as work continued (Harding, 2019:115-116). The researcher reflected much on the appropriateness of the research design, research methods, and instruments used to collect and code data. The researcher was fully aware of the fact that his own values, worldviews, myths, and beliefs did have an influence on the entire research process and the associated construction of knowledge. The research findings reflected aspects of the researcher's own context and biases (Bryman, 2012:393-394).

Field notes and NVivo-12 offered the convenience of writing reflective notes and methodological memos about important aspects as work progressed. Another very helpful resource used to assist in reflecting about the research process, and especially data analysis and interpretation, was the practice of keeping a research diary in half a dozen A4-size 4 quire counter books. The field notes covered all the diverse stages of the research process.

## **2.8 A critique of the research design, methods, and process**

The research design made provision for only a single-case study of a municipality with a proud record of performance on a national level over many years. A multi-case study of municipalities with good, average, and bad performance in different provinces might have added additional insights and perspectives on variables that influenced municipal decision making. Qualitative research is a resource-intensive endeavour and a long and arduous process (Bezuidenhout & Cronje, 2014:229). This reality may be a limitation when multiple cases are studied.

Research results from this study are context-specific and may therefore not be generalisable without taking the utmost care.

The initial scope of this study expanded significantly for two reasons. First, a complexity perspective on decision making exposed contextual variables that had not been considered relevant when the initial scope was defined. Second, the curiosity of the researcher continued to extend the scope of the study. The challenge for the researcher is to limit and to fix the breadth and depth of the study as early as possible during the study.

**Table 2-4 Research design summary**

<b>Chapters</b>	<b>Research focus</b>	<b>Unit(s) of analysis</b>	<b>Data collection methods</b>	<b>Research methods</b>
<b>Chapter 1</b>	Research overview	Hessequa municipality	Literature searches	Literature reviews
<b>Chapter 2</b>	Various theories and models	Specific theoretical themes	Literature searches	Literature reviews
<b>Chapter 3</b>	Research design	Research methods	Literature searches	Literature reviews
<b>Chapter 4</b> <b>Research question 1</b>	The context of the Hessequa municipality	The contextual environment	Depth interviews, focus groups, literature and document searches, observations, field notes	Abductive thematic data analysis
<b>Chapter 5</b> <b>Research question 2</b>	Current decision-making processes and practices of the municipality	Decision-making processes, individual decisions, actors, i.e., individuals and groups	Depth interviews, focus groups, literature and document searches, observations, field notes	Abductive thematic data analysis
<b>Chapter 6</b> <b>Research question 3</b>	Adaptive capacity of the municipality	The Hessequa municipality as a CAS and related subsystems	Non-empirical literature review, depth interviews, focus groups, archived documents, field notes, observations	Abductive thematic data analysis
<b>Chapter 7</b> <b>Research question 4</b>	A decision-making framework for the municipality	The decision-making framework, integrating all the other units of analysis	Literature review, depth interviews, focus groups, archived documents, observations, field notes	Abductive thematic data analysis, model-building theory
<b>Chapter 8 concludes the study</b>				

A specific limitation of this study related to language barriers and boundaries, variations in culture and dialect, and the translation of text, as discussed by Bazeley (2013:77-78). Although the dissertation was written in English all the interviews and group sessions were conducted in Afrikaans. Afrikaans was the home language of all but one of the interviewees and focus group participants. One of the councillors' home language was isiXhosa, with Afrikaans being his second language. Heeding the advice of Bazeley (2013:77), all data collected from the interviews and focus group sessions were transcribed into Afrikaans, which was also the home language of the researcher. The codes, themes, and subsequent theory, however, were developed in English. Direct quotes from participants were included in this text as translations into English.

A further limitation of the study was the fact that it was only the researcher coding the data from his perspective. Although this approach ensured some degree of consistency, a second and a third coder with different theoretical perspectives could perhaps have contributed other insights based on the same data.

## 2.9 Chapter summary

The use of a single-case qualitative case study research design for this study was justified and explained and the methods used to collect, analyse, and interpret data were reviewed.

In qualitative case study research, the processes of data collection, data analysis and data interpretation are intertwined, entangled and iterative. The distinction made between these processes in this dissertation is therefore artificial. The focus of this chapter was on the design aspects of the study, although it overlapped with facets of its execution.

In order to strengthen the reliability and construct validity of this case study, four principles of data collection were adhered to (Yin, 2014:118-129). First, multiple, and complementary sources of data and evidence were consulted and not only a single source. Hence, data triangulation could be done. Second, a case study database was created. This database consisted of the following three components:

- The list of references consulted for this research (included in this dissertation).
- An indexed collection of files containing hard copies of case study data, interview transcriptions, focus group transcriptions, contextual information, and field notes.
- An indexed electronic database containing similar sources.

Third, an effort was made from the start of the study to maintain a chain of evidence to increase the reliability of the case study information. This chain linked the initial research questions and the final case study conclusions, both in a forward and a backward direction, in terms of supporting evidence from properly documented sources, methodologies, and protocols. Fourth, due care was exercised in collecting data from electronic sources of evidence. Electronic searches for information were narrowly focused on core aspects of the study. Similarly, purposive sampling of documents informed document searches. The originality of the data sources that were consulted was also confirmed.

A traditional literature review informed the entire study. Data collection methods were primarily depth interviews and focus group interviews. Secondary methods included document searches and analyses, observations, and field notes.

Data analysis was done by means of CAQDAS software. Thematic coding was applied to all textual data in the form of transcriptions of interviews and focus group sessions. Model-building was used to represent interpretations of the findings in subsequent chapters.

Entering the research field was facilitated by 'known sponsors' and professional, helpful, and supportive gatekeepers.

Actual interpretation of the data was done according to the four chapters that address the four core themes of the study. Chapter 4 addresses the context of municipal decision making in SA with specific reference to the Hessequa municipality. Chapter 5 investigates the actual decision-making practices and processes of this municipality. Chapter 6 focuses on the features of the municipality that co-determine its adaptive capacity. Chapter 7 deals with a framework for municipal decision making. This framework integrates the findings from the preceding chapters. Chapter 8 concludes the study.

The following chapter contains the review of literature and theoretical frameworks applied in this study.

## CHAPTER 3 REVIEW OF LITERATURE REGARDING ASPECTS IMPACTING ON DECISION MAKING

We need a kind of thinking that relinks that which is disjointed and compartmentalized, that respects diversity as it recognizes unity, and that tries to discern interdependencies. We need a radical thinking (which gets to the root of problems), a multidimensional thinking, and an organizational or systemic thinking.

Edgar Morin

### 3.1 Introduction

Chapter 2 contains the motivation for a case study research design and the associated research methods. This chapter is the result of a traditional or narrative literature review. The literature review positions this study firmly on a foundation of solid scholarship and relevant literature regarding the core themes that underpin the study. The main aim of the literature review was to identify concepts, conceptual frameworks, models, and theories that could be employed to develop a contextualised understanding of current municipal decision-making practices from a complexity perspective.

Table 3.1 and Figure 3.1, below, provide a simplified overarching model that explains the relevance and links between the theories covered in this chapter and the overarching themes in the other chapters. The overarching themes are the municipal context (discussed in Chapter 4), the municipal decision-making processes (covered in Chapter 5), the adaptive capacity of the municipality (examined in Chapter 6) and a conceptual framework for decision making (proposed in Chapter 7). In Table 3.1, the shaded cells provide an indication of which theories are linked to which chapters and overarching themes.

Theories and main themes are linked as follows: Systems theory and complexity theory apply to the entire study. Decision-making theory is primarily used to examine the municipal decision-making processes and to inform a framework for decision making. The notion of context primarily informs a study of the contextual environment. Leadership theory is included as a theoretical framework due to the critical role that leaders play in organisations. Leaders co-create an organisational culture and context that may promote or hinder collaboration, innovation, learning, reflectivity, teamwork, adaptive capacity and decision making. Leadership styles and approaches are contextual variables that may influence the decision processes and the adaptive capacity of an organisation. Organisational theory is included as a framework to study aspects of the internal context of the municipality and the nature of the adaptive capacity of the municipality. Organisational theory provides a framework to study the hierarchical political and administrative structures and processes of the municipality in context. Governance theory is included in the literature review because the mode or model of governance applied in an organisation constitutes a very important contextual variable that affects both the decision-making processes and the adaptive capacity of the organisation. Some governance models are likely to enhance the adaptive capacity of an organisation and its ability to deal with complexity. Other governance models may render an organisation unable and unfit to function effectively in the complex domain.

The literature review therefore includes theories that relate directly to decision making. It also includes theories that address very important contextual variables that may have a huge influence on decision making in the organisation from a complexity perspective. Together these theories and models inform a more comprehensive understanding of municipal decision making.

The traditional literature review undertaken in this study evolved from an initial literature review (about decision making in general) into an exploratory literature review (in order to prepare the

research proposal for approval) and from that into an intermediate and more focused literature review that eventually matured into the final, refined literature review that informs this dissertation. The literature review is biased towards literature sourced from the predominantly English-speaking and developed Western World. The following sections contain the results of the literature review.

**Table 3-1 Application of theories to the various chapters of this dissertation**

Chapter:	Chapter 4	Chapter 5	Chapter 6	Chapter 7
<b>Overarching themes:</b>	The municipal context	Municipal decision-making processes	Adaptive capacity of the municipality	A framework for decision making
<b>Systems theory</b>	X	X	X	X
<b>Complexity theory</b>	X	X	X	X
<b>Decision-making theory</b>		X		X
<b>The notion of context</b>	X			
<b>Leadership theory</b>		X	X	
<b>Organisational theory</b>	X	X	X	
<b>Governance theory</b>		X	X	

### 3.2 Systems theory and types of systems

Systems theory provides a theoretical framework and basis for the entire study. It is used below to interpret and to understand the nature of the municipal context and the municipal decision-making processes. A systems perspective is also applied to devise a conceptual framework that can be used to facilitate decision making. The following paragraphs contain a review of important aspects of systems theory and different kinds of systems.

#### 3.2.1 The need for a systems perspective and a process perspective

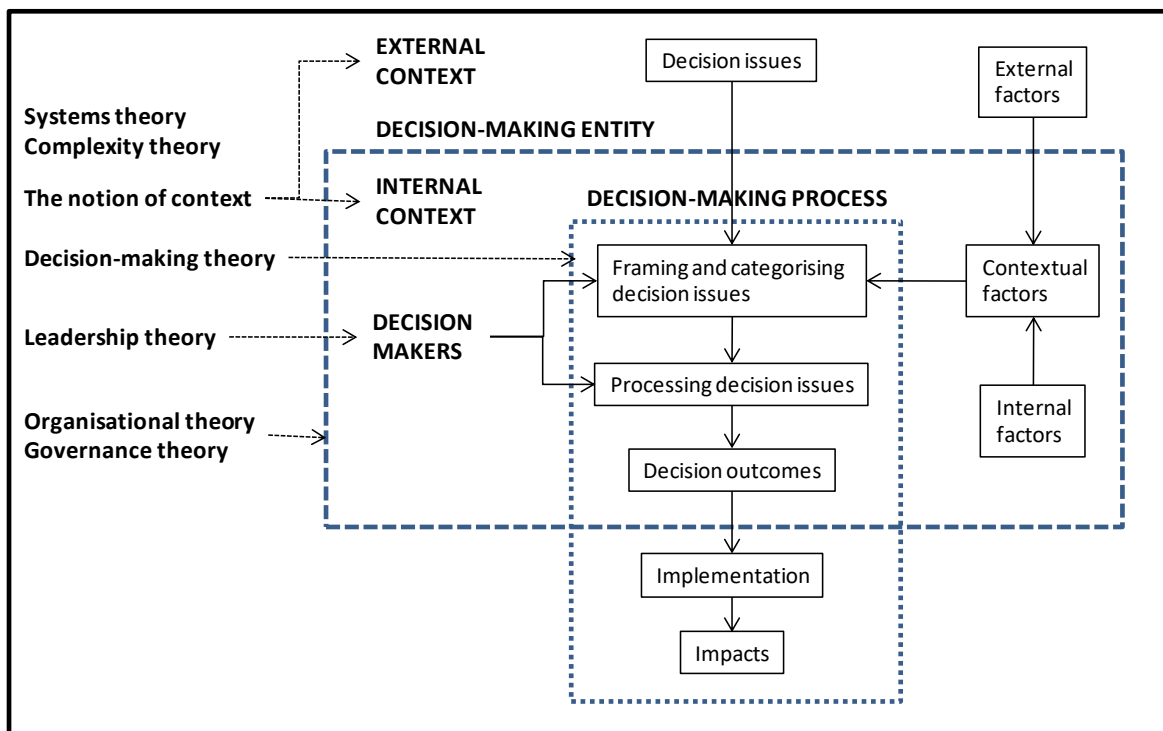
This study employed a complexity epistemology to study municipal decision-making processes and structures. A complexity perspective introduces the important concepts of dynamic systems, time, and process. Time is central in explaining process. Complexity stems from the blizzard of factors that are associated with processes (Nutt, 2010a:588). The ability to alternate between the spatial (i.e., structural) and temporal (i.e., process) perspectives of a physical or conceptual structure allows the observer to identify the evolution of the structure of the system over time (Dostal *et al.*, 2005:130-131).

A researcher can obtain a much clearer understanding of the nature and behaviour of a system over time if a structural and a process perspective are used in combination (Nutt, 2010a:581). Nutt argues that the scope of decision research should include a process perspective, which implies a time perspective, and a structural perspective. Simultaneous viewing of process and structure is important because there is “*structure in process and process in structure*” (italics in original) (Nutt, 2010a:586). In this research, complexity describes the nature of municipal

systems and processes. Therefore, an overview of systems theory and different kinds of systems is appropriate here.

### 3.2.2 An overview of systems theory

Despite the differences between systems theory and complexity theory, most, if not all, the principles and laws of systems theory are valid for complex systems (Richardson, 2004:75). In fact, complex systems theory emerged from the tradition of systems theory and systems thinking (Castellani, 2018). Comprehensive overviews of the development and evolution of systems thinking are provided by Boulding (1956), Checkland (1981), Gharajedaghi (1985), Dostal *et al.*, (2005), Ackoff *et al.* (2010), Gharajedaghi (2011), Capra and Luisi (2014) and other scholars quoted below. This review of systems theory provides a reference framework for subsequent discussions.



**Figure 3-1 Application of theories to the main themes of this study**

A system is an *ensemble harmonique* (Sahal, 1977:158). A system can be defined as a delineated part of the universe which is distinguished from the rest by a real or imaginary boundary (Erdi, 2008:5). The delineated part, the system, is distinguished from its environment (the rest) by means of boundaries in multiple dimensions (Dostal *et al.*, 2005). System boundaries are artificial, provisional, reductionist and convenient constructions to reduce complexity and to make sense of the world. Often such boundaries not only confine a system but rather constitute the system (Richardson *et al.*, 2007:26; Meadows, 2008:95-99; Cilliers, 2010:86-87).

Systems exist because of the interconnectedness of their elements (Teisman *et al.*, 2009:6), and systems produce their own patterns of behaviour over time (Meadows, 2008:2). A system can be defined as a combination of interactive, interdependent, and interconnected system elements within open or closed-system boundaries (Morçöl, 2012:55). Elements in open systems interact across system boundaries with the external environment outside the open system. Rosen (1991:41) refers to this external world as the *ambience*. Such interaction allows

complex systems (defined below) to exchange matter, energy, and information across their porous or open boundaries with their environment (Cilliers, 2010:86).

Checkland's definition of a formal system includes an ongoing reason for existence, a purpose or mission, and some guarantee of continuity and resilience. Formal systems employ a decision-making process that regulates action to pursue its purpose (Checkland, 1981:173-174).

Systems can be described and classified in terms of their structure or organisation, temporal processes, boundaries, interaction with their environment, behaviours, orderliness, predictability and aims (Érdi, 2008). One example of a comprehensive systems theory is the Biomatrix systems theory (Dostal *et al.*, 2005). This theory is a process theory that depicts the universe as a web of dynamic, interrelating systems and processes within a simultaneous space-time continuum. The theory proposes that all systems have a generic pattern of organisation. Biomatrix theory is a worldview which emphasises systemic connectivity, activity (or process) systems, and entity (or structural) systems (Dostal *et al.*, 2005:21-23). The comprehensive Biomatrix systems perspective defines any system in terms of seven holographic principles, driving forces or system aspects. These are the contextual environment of a system, a system's ethos, objectives of a system, processes of the system, system structure, system resources, and governance of the system. Five qualitative variables associated with the dimensions of *wealth*, *truth*, *beauty*, *values*, and *power* have strong influences on choices made by individuals within complex social systems (Gharajedaghi, 2006:56). These dimensions are related to the ethos aspect of systems (Dostal *et al.*, 2005).

This overview of systems theory is followed by a review of different kinds of systems and their corresponding behaviours. Systems within the domain of order are discussed first.

### **3.2.3 Systems within the domain of order**

A distinction is made between systems within the domain of order and systems within the domain of complexity. There are fundamental differences in the nature of the systems that belong in each domain, and in the way in which each kind of system is addressed. The nature of systems in the domain of order and stability is reviewed first.

#### **3.2.3.1 The paradigm of order and stability**

The paradigm of order is associated with the Scientific Revolution of the sixteenth and seventeenth centuries. A mechanistic conception of reality, expressed in terms of mathematical and scientific terms, became the modern worldview (Capra & Luisi, 2014). This worldview employed scientific thinking to dominate and control nature.

Brilliant scientists and mathematicians developed the scientific approach to understand both the current behaviour of physical phenomena and their future behaviour (Geyer & Rihani, 2010:13; Flood & Wilson, 2012; Capra & Luisi, 2014). Within this paradigm of simplicity and order, the major laws of gravity, electromagnetism, and strong and weak nuclear interactions were discovered (Morin, 2008:39). The general assumption was that a dispassionate, rational observer external to the system being studied can gain objective, external knowledge about it through the application of analytical, reductionist, and quantitative scientific methods (Morçöl, 2012:163-164).

The deterministic paradigm, also known as the Newtonian paradigm (Heylighen *et al.*, 2007; Fernández *et al.*, 2010:171), supported by Cartesian reductionism, reflects the human propensity to simplify phenomena (Morin, 2008:xxx; Morçöl, 2012:6). Therefore, this paradigm is also referred to as the paradigm of simplification (Morin, 2008:3). This worldview informed the reductionist and analytic research strategies that proved to be very effective in the domain of science during the previous century. Reductionism, and more specifically mechanistic



reductionism, suggests that any whole system can be reduced to its constituent parts so that the nature of the individual, isolated parts can be studied and understood. The assumption is that knowledge of the parts is sufficient to understand the entire system (Érdi, 2008:4; Capra & Luisi, 2014:24). Within the Newtonian paradigm, order reigned (Morin, 2008:xxxiii). Objectivity, reductionism, quantification, and optimality were its canon (Linstone, 1977:4). Cartesian reductionism is linked to the principle of strong causation. According to this principle the same causes result in the same consequences (Fernández *et al.*, 2010:171).

The Newtonian worldview depicts a predictable, deterministic clockwork universe that exists independently of the observer, and that can be known and understood completely and accurately (Morçöl, 2012:144; Rosen, 1991:185). The eventual goal of science is to provide a single theory that describes the entire universe in terms of physical laws and the initial state of the system (Hawking, 1988:11; Flood & Wilson, 2012:208).

Five basic postulates guided science during the early nineteenth century (Harvey, 2009:27; Ulanowicz, 2010:29-30): First, Newtonian systems are causally closed and isolated from their environments; external forces have no causal effect on the closed system. Second, Newtonian systems are deterministic; past and future system states can be specified if initial conditions, namely, a system's location in the dimensions of time and space, are known; these future states can be subjected to empirical testing. Third, Newtonian systems are time-reversible, as time is external to the system. Fourth, Newtonian systems are atomistic; they can be taken apart, analysed, and built up again to perform their original function. Fifth, physical laws are universal and apply at all times and places.

The core assumptions of the scientific paradigm, or the “four golden rules”, can be summarised as order, reductionism, predictability, and determinism (Rihani, 2002:66; Morin, 2008:xxx; Geyer & Rihani, 2010:13; Morçöl, 2012:145).

The implication of the Newtonian worldview, therefore, is that the universe (and any other system) can be perceived as a magnificent clockwork mechanism that can be known and understood accurately and fully through an analytical approach. Researchers can distance themselves from the phenomena they study in order to gain unbiased objective knowledge about them. Behaviour of Newtonian systems can be characterised as linear and predictable. Newtonian science is based on closed systems that tend towards steady states where they remain unless disturbed. An additional implication of the reductionist approach is that the importance of the environment of the system is ignored (Morin, 2008; Fernández *et al.*, 2010).

The successful application of the reductionist worldview and the machine metaphor in industry, during the Industrial Revolution, informed the design and operations of mechanistic organisations and bureaucracies (Morgan, 2006). Classical management theory assumed that management was a simple process of planning, organisation, command, coordination, and control under stable conditions. A severe limitation of a bureaucracy is that it finds it very hard to adapt to changing circumstances – when flexibility, innovation and creativity are required. Another disadvantage of a bureaucracy is that human capacities tend to be underdeveloped and underutilised (Morgan, 2006:27-31).

Two categories of systems are identified within the domain of order and stability. These are simple systems and complicated systems.

### **3.2.3.2 Systems within the domain of order and stability**

Simple systems and complicated systems exist in the domain of order and stability. They can be described and analysed very accurately and completely. Simple systems and phenomena are well-defined and properly understood. They are structured. Cause-effect patterns are clear, direct, linear, predictable, and controllable. Simple systems exist within the domain of “known knows” (Snowden & Boone, 2007; Patton, 2015:148). Decision making that is based on the

premises and theories of rationality is appropriate when decisions are taken in situations so transparent and clear that the optimum can be reasonably approximated by an ordinary human mind (Simon, 1997:293).

Complicated systems and phenomena exist, function, and interact in multiple dimensions where cause-effect relations are context-contingent. Cause-effect linkages are clear, proportionate, and can only be discovered through careful analysis by experts. Complicated systems are normally closed and can be controlled (Poli, 2013; Patton, 2015:149). These systems often have many components that can perform sophisticated functions when in operation. Complicated systems can be analysed accurately (Cilliers, 1998:3). They can be reduced into solvable parts and optimal solutions to problems can be found (Nilsson, 2007:238). When systems within this category are not in operation and completely isolated from their environment, they appear perfectly orderly. However, once simple and complicated systems become operational as subsystems of open complex systems their behaviour may become unpredictable and non-linear as they approach a new attractor basin (Cilliers, 1998:2-3; Morçöl, 2012:34-40).

Complicated systems can be understood through their structural decomposition into their most basic parts. In principle, these systems can be fully understood, modelled, and optimised (Poli, 2013). Inputs into complicated systems result in predictable and proportionate outputs that can be controlled. Complicated issues (or problems) originate from individual, identifiable causes that can often be addressed one by one. Problems associated with complicated systems can be solved properly, and permanent solutions are possible (Poli, 2013:142). These systems exist within the realm of the “known unknowns” where multiple right answers may exist for a specific problem (Snowden & Boone, 2007). A decision maker who chooses the best available alternative in terms of some criterion is said to optimize (Simon, 1997:295).

### **3.2.3.3 Strengths of the paradigm of order**

The paradigm of science, order, reductionism, and predictability worked extremely well when applied to closed systems and structured or tame problems. It contributed to incredible advances in science, technology, and industry (Weaver, 1948:536; Hawking, 1988:14; Flood & Wilson, 2012). Simple and complicated problems could be solved in isolation (Teige *et al.*, 1977:239). During the eighteenth century – the Age of Enlightenment – the successful application of the paradigm of order in the natural sciences resulted in its enthusiastic adoption and institutionalisation in the social sciences as well (Geyer & Rihani, 2010:20). The machine metaphor and the analytic approach had a profound impact on the theory and practice of economics, politics, management, and organisational studies until the end of the twentieth century (Capra & Luisi, 2014). Recognising the power of the reductionist approach, Rittel and Webber (1973:169) remarked that the reductionist approach towards problem-solving was appropriate for “tame problems” but inadequate to address “wicked problems”.

The inability of the reductionist paradigm to address non-linear phenomena stimulated the need for an expanded paradigm.

### **3.2.3.4 Limitations of reductionism and the need for a new paradigm**

The explanatory power of the paradigm of order is indeed limited. It was inadequate to explain scientific developments stimulated by the development of new technology during the first half of the twentieth century. The Newtonian worldview was challenged and under attack (Geyer & Rihani, 2010:14). Einstein’s relativity theory, Bohr’s quantum theory, Schrödinger’s quantum measurement problem, and Heisenberg’s uncertainty principle shattered the foundations of the Cartesian worldview (Hawking, 1988:59-60; Rihani, 2002:67; Fernández *et al.*, 2010:173; Geyer & Rihani, 2010:14-15; Capra & Luisi, 2014).

The second law of thermodynamics introduced disorder, time and entropy into the sciences, phenomena that the paradigm of order could not explain (Morin, 2008:40). This law states that the entropy or disorder in a closed system tends to increase irreversibly with time until an equilibrium state is reached (Morin, 2008:xxxii; Geyer & Rihani, 2010:17). The arrival of the second law of thermodynamics constituted a fatal attack to the established, perfect, ordered, and determinist vision (Morin, 2005:3).

The challenge was to devise a paradigm that could accommodate the following observations in physical systems, also called the “four golden rules” (Rihani, 2002; Morin, 2008; Geyer & Rihani, 2010): These rules refer to partial order, reductionism and holism, predictability and uncertainty, and probabilistic outcomes. Not only physical scientists but also scientists working in the fields of nature, the life sciences and the social sciences experienced the need for an epistemology that could address non-linear and emergent phenomena, uncertainty, and probability in their respective disciplines (Teige *et al.*, 1977:239; Fernández *et al.*, 2010:173; Capra & Luisi, 2014:37). Checkland (1981:13, 59) found the scientific method apparently “impotent” and unable to deal with these concepts.

Reductionism was inappropriate and inadequate to address the category of social planning problems that Rittel and Webber defined as wicked problems (Rittel & Webber, 1973:155-169). This whole new class of problems was described as systemic in nature (Teige *et al.*, 1977:239).

The conclusion was that the probabilistic behaviour of non-linear systems, emergent properties of dynamic systems, and the behaviour of numerous natural phenomena, in general, did not conform to the four golden rules of linear systems, namely order, reductionism, predictability and determinism (Rittel & Webber, 1973; Rihani, 2002:68). A distributed, self-organising, connectionist approach is more appropriate for the study of complex systems (Cilliers, 1998:2,112; Morin, 2008:xxviii) because oversimplification of complex phenomena leads to blind intelligence (Morin, 2008:4). Therefore, a different order of response is required to deal effectively with the systemic problems encountered (Teige *et al.*, 1977:239). What is needed is a fundamental change of worldview and a radical shift in our perceptions that is adequate to address the challenges of the interconnected, self-regulating, and globalised world, consisting of networks of inseparable patterns of relationships (Capra & Luisi, 2014:xi).

Instead of the paradigm of order, the paradigm of complexity was proposed. A complexity perspective is adequate to address self-organisation, evolution, uncertainty, non-linear dynamics, dissipative systems, and chaotic behaviour at all hierarchical levels (Lewin, 1992:178; Geyer & Rihani, 2010:16-17; Capra & Luisi, 2014).

Reductionist and analytical thinking, predictability, linearity and closed-system thinking allow for strategic decision making by individual leaders based on predictions, extrapolations of trends and closed-system planning. Strand (2007:198-200) refers to this worldview as the simple view. Various authors agree that a new paradigm is required to deal with the complexity of the current reality (Room, 2011:289).

The mechanistic worldview is being replaced by an organic worldview that is based on systemic and holistic thinking, complexity thinking, emergence and auto-organisation, open system boundaries and system hierarchies. The current reality demands an ability to deal with ambiguity, contradiction, lack of precision and unpredictability (Fernández *et al.*, 2007:175-187; Schindwein & Ison, 2007:237). Complexity theorists aim to understand complex systems as wholes and not as aggregations of their parts within their contexts (Morçöl, 2012:7).

Authors such as Heylighen *et al.* (2007:117-134), Morçöl (2012:xi) and McCloskey (2014) make a strong case for the use of complexity science as an alternative approach to understanding the complexity associated with public policy processes. According to Geyer and Rihani (2010:29-30), complexity theory transcends and includes the paradigm of order by framing the latter within a larger context. This paradigm shift requires a profound shift in

assumptions regarding method of inquiry. It also requires holistic thinking which is adequate to handle interdependent sets of variables in complex systems (Gharajedaghi, 2006:9).

Contrasting aspects of the paradigms of order and complexity appear in Table 3.2.

The complexity paradigm introduces a new framework for understanding reality as well as a new framework for inquiry of complex and chaotic systems.

### 3.2.4 Systems within the domain of complexity

This section focuses on complexity theory and complex systems within the Cynefin framework (Kurtz & Snowden, 2003:465; Greenberg & Bertsch, 2021). The following themes are addressed: an overview of the notion of complexity, the historic roots of complexity thinking, complexity theory, different schools of thought on complexity, and the features and behaviours of complex systems. These concepts and theories constitute the complexity lens that will be applied in subsequent chapters. Chaotic systems are addressed at the end of this section.

**Table 3-2 Contrasting paradigms: Order and stability versus complexity**

Contextual aspect	Established paradigm of order and stability	Emerging paradigm of complexity
<b>Philosophical paradigm</b>	Positivism, Cartesian reductionism, and determinism. Newtonian and analytical thinking is objective and value-free. Quantitative approach. Linearity and predictability.	Holism and holistic thinking, multiple and complementary perspectives, integral perspectives, synthesis, subjective and value-focused. A qualitative approach. Uncertainty and unpredictability.
<b>Epistemology</b>	Pure reason and a single, classical logic. Conservative universal laws. Homeostasis. Closed-system boundaries.	Embodied social knowledge and a dialogue between multiple logics. Open system boundaries. System and environment interact.
<b>Metaphor</b>	Machines, clockwork.	Networks, a brain, an organism, or a CAS that emphasises connectivity, relationships, dynamic and non-linear processes, feedback loops, and non-material systems.
<b>Unit of analysis</b>	Atoms, isolated parts, rigid structure and stability, material objects, linear processes, individual parts, elements, or actors.	Integrated whole systems, systems in context, sub-systems, networks, patterns of change, processes, and phenomena.
<b>Worldview of the collective</b>	Anthropocentric with an exploitative ethic.	Integrating anthropocentric and eco-centric perspectives with an ecological ethic.
<b>Worldview of the individual</b>	Egocentric, independent.	Holistic, integral, interdependent.
<b>Causality</b>	Linearity allows for prediction and control of variables.	Multiple causality, co-causality, non-linear causality, and trajectories of variables.
<b>Civic power</b>	Government and business.	Community, government, NGO and business collaboration.
<b>Leadership style</b>	Characteristics of the heroic individual and the "great man" theory. Autocratic.	Collaborative, dialogical, and adaptive leadership; complexity leadership.

Contextual aspect	Established paradigm of order and stability	Emerging paradigm of complexity
<b>Problem-solving</b>	Structured problems, <i>a priori</i> theories, analytical thinking, controlled experiments, reactive problem-solving and risk avoidance. Specialised teams “sense, categorise, or analyse and respond” to tame problems.	Unstructured problems. Evolving simulations, and iterative, incremental cycles of context-specific meaning making by multi- and trans-disciplinary teams that “probe, sense and respond”.
<b>Time</b>	Short term, today, tomorrow, the financial quarter.	Multi-generational and deep time that spans past, present and future; path-dependency.
<b>Governance aspect</b>	Bureaucratic governance in a stable context.	Governance based on learning, collaboration, adaptation, and foresight in a VUCA context.

Sources: Teige *et al.* (1977:239); Fernández *et al.* (2007:171-181); Snowden & Boone (2007); Najmanovich (2010:99); Pelrine (2011:28); Capra & Luisi (2014:80-82); Satterwhite *et al.* (2015:71)

### 3.2.4.1 A conceptual understanding of the notion of complexity

The Merriam-Webster dictionary (2021) states that the English word *complexity* has its origin in the Latin word *complexus*, meaning a whole made up of interrelated parts. This definition appears to be somewhat oversimplified. Due to the lack of a formal definition of the notion of complexity (Richardson & Cilliers, 2001:8; Mitchell, 2009:x,13-14), a qualitative description of the term must suffice. Studies of complex systems can indeed proceed without such a definition (Holland, 2006:6).

Cilliers (2010:83) argues that complexity is only an epistemological matter that has to do with the way in which we describe, model, and understand the world, and not an ontological issue because the world itself is not complex, it just is. Therefore, one can talk about epistemological complexity rather than ontological complexity.

Complexity theory is not a scientific theory but rather a mathematical theory based on relationships and patterns, used to explain non-linear natural phenomena perceived as complex (Capra & Luisi, 2014:98-99). What is often referred to as complexity theory is not a fully articulated theory yet, and no general coherent theoretical framework for it exists (Morçöl, 2012:1). Morçöl refers to complexity theory as a way of thinking, a metatheoretical language and a set of abstract concepts that should be synthesized with those of some social theories in order to understand policy processes (Morçöl, 2012:262). Mitchell (2009:95) agrees that no single science of complexity exists but rather several different sciences of complexity with different notions of what the concept means.

Morçöl (2012:151) concludes that the laws of complexity are universal, and that knowledge of complex systems is contextual. This study was based on a general complexity approach (Cilliers, 1998; Morin, 2005; Woermann *et al.*, 2018) rather than a restricted complexity approach.

Although complexity theory or complexity science has not yet matured into a single, neatly defined coherent whole theory in terms of its ontological and epistemological dimensions, a series of very useful concepts can be employed to develop an understanding of complexity (Mitchell, 2009:300-301; Morçöl, 2012:1). Various authors use different terminology when they refer to the notion of complexity. Díaz (2010:48) distinguishes three complementary and intertwined approaches to describe complexity, namely complexity as *science*, complexity as *method of thought*, and complexity as *worldview*.

**Complexity as science.** Complexity science is the systematic study of complex systems as well as the phenomena and behaviours associated with complex systems (Maguire *et al.*,

2011:2). The key principles of complexity theory are interconnectivity of diverse system elements, micro-diversity, indeterminism, and co-evolution (Boulton & Allen, 2007:263). According to Capra (2007:14), complexity theory is a mathematical theory of non-linear systems that provides an appropriate language for dealing with nonlinear systems. Complexity emerges from the inter-relationship, inter-action and inter-connectivity of components of a system, and between a system and its environment (Chan, 2001:1).

The term sciences of complexity generally refers to the study of self-organised critical behaviour, cellular automata, agent-based modelling, artificial life, the study of chaotic systems and fractal geometries (Strand, 2010:200). Strand refers to the methods of mathematical modelling of complex systems as “thin complexity”, or an oversimplification of complex phenomena.

**Complexity as method of thought.** Complexity thinking comprises the acknowledgement of complexity. The realisation that one is dealing with complex phenomena has specific implications for one’s approach to address them (Cilliers, 2007:3). Complexity is more a way of thinking about the world than the application of scientific models (Snowden & Boone, 2007).

Morin (2008:49) proposes three principles for complexity thinking. The *dialogic* principle reconciles the co-existence of two logics that may appear at the same time as complementary and antagonistic. This principle maintains duality at the heart of unity. For example, order and disorder co-exist to produce both organisation and complexity. The principle of *organisational recursion* replaces the idea of linear causality with a cyclical process that is self-constitutive, self-organising, and self-producing (Morin, 2008:50). The *holographic* principle transcends both reductionism, which can only see the parts, and holism, which only sees the whole (Morin, 2008:50). This third principle, which is connected to the first two principles, integrates, and enriches knowledge of the whole with knowledge of the parts of a system, and vice versa.

Complex thinking is not omniscient thinking, it is local and contextual, situated in a given time and place (Morin, 2008:97). Complex thinking requires the skill to live with uncertainty.

**Complexity as system theory.** Complexity theory is a system theory (Morçöl, 2012:45), or according to Teisman *et al.* (2009:6), a systemic theory which has its roots in science and mathematics (Érdi, 2008). Key concepts associated with complexity theory include the following: systems, system dynamics, non-linearity, emergence, self-organisation, co-evolution, bifurcation, adaptation, initial conditions, and path-dependency (Érdi, 2008; Morçöl, 2012).

**Complexity as metaphor.** Morgan (2006) and Waldrop (1992:334) use complexity as a metaphor. Whereas the metaphor of a clockwork mechanism was used very effectively to describe simple systems, complexity is used as an appropriate metaphor to describe non-linear dynamic systems. Morgan (2006) uses complexity as a metaphor to create a postmodern approach to explain the unpredictable nature of organisational change (Morgan, 2006:xii) and to understand the paradoxes, ambiguities, and competing dimensions of the postmodern world (Morgan, 2006:420).

**Complexity as fad.** Baofu (2007:3) states that the popularity of studying complexity is fast becoming a new fad in a wide variety of disciplines. Earlier the concern was raised that the inappropriate use of concepts, metaphors, and terminology from the domain of complexity may create a real risk that complexity science may become just another management fad (Maguire & McKelvey, 1999:23). To thwart faddism these authors suggest that complexity science should be based on thorough research.

**Complexity is a project in evolution.** Najmanovich (2010:92) argues that the complexity approach is much more than a paradigm shift and that complexity metaphors go far beyond the domain of science itself. Complexity cannot be reduced to an *a priori* theory, or to a

completely standardised practice. She believes that complexity is not a new canon, a global theory, a worldview, or *Weltanschauung*, but a project in evolution. She does admit that a complexity approach can enlarge, refine, and sophisticate our frame of mind. This is the key point here. The complexity approach is indeed used in this study to enlarge, refine, and sophisticate the scope of vision and understanding of municipal decision making.

**Complexity as worldview.** A complexity worldview allows one to identify the non-linear processes and behaviour patterns associated with dynamic systems and their interlocking networks of subsystems. The complexity worldview allows the observer to combine all the mentioned perspectives of complexity theory and complexity sciences to make sense of phenomena in their contexts. Complexity as worldview is also informed and enriched by an understanding of its historic roots, which is discussed next.

### 3.2.4.2 *Historic roots of complexity sciences*

The concepts associated with complexity theory or complexity sciences can be traced back to developments within the domains of mathematics, physics, chemistry, evolutionary biology, computer sciences and information sciences (Rosser, 2009:5; Castellani, 2018). Castellani's visual map of the complexity sciences illustrates how the complexity sciences evolved along five major intellectual traditions. These traditions are dynamic systems theory, systems science, complex systems theory, cybernetics, and artificial intelligence (Weaver, 1948; Wiener, 1948, 1954; Von Bertalanffy, 1950; McCarthy *et al.*, 1955; Boulding, 1956; Ashby, 1961; Feigenbaum & Feldman, 1963; Minsky, 1963; Zadeh, 1969; Forrester, 1971; Gorelik, 1975; Holland, 1985, 2006; Nicolis & Prigogine, 1977; Bogdanov, 1980; Maturana & Varela, 1980; Checkland, 1981; Von Neumann & Wolfram, 1984; Gharajedaghi, 1985, 2011; Gleick, 1987; Kauffman, 1993; Buchanan, 2005; Moor, 2006; Morgan, 2006; Senge, 2006; Castellani & Hafferty, 2009; Mitchell, 2009; Laszlo, 2010; Flood & Wilson, 2012; Byrne & Callaghan, 2014; Capra & Luisi, 2014; Casares, 2018).

Different schools of thought on complexity are discussed next.

### 3.2.4.3 *Schools of thought on complexity*

Different schools of thought and perspectives on complexity have been observed. The distinctions are not very clear and some overlap in perspectives exists. Richardson and Cilliers (2001:5-8) identify three broad themes covered by researchers, namely *reductionistic complexity science*, *soft complexity science*, and *complexity thinking*. The *reductionist* approach to *complexity* (science) seeks to uncover the fundamental principles of complex systems in terms of an a-contextual, scientific formula. This approach is similar to physical scientists' aim to capture the richness of reality in a few powerful, all-embracing algebraic expressions. Although the search for a theory of everything on complexity continues, the availability of such a reductionist, mathematical expression of complex systems would be of very limited value.

*Soft complexity science* refers to the use of complexity as a powerful metaphorical tool and a possible theory of organisation within the domain of the organisational sciences. Various concepts associated with complexity are used metaphorically when the complexity lens is applied to organisations. The application of theories of complexity that are primarily based on the study of natural systems may not be directly applicable to the social sciences.

*Complexity thinking*, according to Richardson and Cilliers (2001:8), focuses on the limited and provisional nature of all understanding about complex systems. Complex thought recognises uncertainty, non-linearity, randomness, chance events, and the unexpected. Although complex thought does not resolve problems, it constitutes an aid to a strategy that can resolve them (Morin, 2008:57). An understanding of complexity requires a relatively deep change in our mental structures and perspectives (Morin, 2008:61). It requires a new worldview to replace

the reductionist perspective. Morin (2008:92) adds an additional absolute requirement for a complex mode of thinking, namely self-knowledge by the observer (as part of the complex system), and self-criticism and self-observation.

A distinction is made between American and European traditions (Maguire *et al.*, 2011:58). The American tradition uses mathematical modelling and computer simulation to describe how complexity is created and how order emerges from a disorganised world. The NK-models of Kauffman (1993; 1995) and the CAS-models of Holland (1998) represent the American tradition. The European tradition provides an explanation of the forces behind complexity while searching for an explanation of the forces behind the drive towards order. Prigogine and Stengers (1984), for example, studied dissipative systems as a mechanism for self-organisation. Changes in tension, or pressures for change, stimulate systems to change from one mode of behaviour (or system state) to another (Thietart & Forgues, 2011:58-59).

Morin (2005; 2007) distinguishes between *restricted complexity* and *general complexity*. Proponents of *restricted complexity* deny the nature of complex problems and treat them as complicated problems that can be solved (Woermann *et al.*, 2018:6). They apply strong reductionism to reduce complex issues through the application of the scientific explanatory principles of determinism, reduction, and disjunction. Traditional science is then applied to solve problems of restricted complexity. This approach is appropriate for structured problems in the physical sciences but not for problems in the domain of the social and natural sciences. This epistemological approach is very similar to reductionist complexity reviewed above.

*General complexity* recognises complexity as an ontological fact. The epistemological implication of this paradigm is that complex phenomena cannot be reduced to fit the scientific mould. General complexity theorists apply weak reductionism (Woermann *et al.*, 2018:7). They are acutely aware of the inability of their reductionist models to capture the full complexity of the phenomena in focus. General complexity examines the parts of complex systems, the contingent and context-dependent sets of relationships between the parts, and the relationships between the parts and the whole (Morin, 2007; Woermann *et al.*, 2018). As a result, each model is unique, limited, partial and provisional but still useful. These simplifying models also reflect the assumptions and paradigms of the modeller (Morin, 2007).

Poli (2013) argues that the difference between restricted complexity and general complexity constitutes a difference in type, and not of degree. This study was framed within the paradigm of *general complexity*.

The following descriptions of the characteristics and unique behaviours of complex systems contribute to a better understanding of the notion of complexity (Cilliers, 1998; Mitchell, 2009).

#### **3.2.4.4 Features and behaviours of complex systems**

##### **Features of complex systems**

Cilliers (1998:3-5), Dostal *et al.* (2005) and Maguire *et al.* (2011:2) provide a very comprehensive description of complex systems in terms of several features. A complex system is a whole, consisting of many diverse parts, agents, or actors, also referred to as system elements. System elements exchange material, energy, information and meaning through rich, dynamic interaction. Each element is governed by some rule or force which relates its dynamic behaviour to the behaviour or states of other elements with which it interacts. Each system element is ignorant of the behaviour of the system as a whole. The result of the interaction is that global structure emerges from local activity rules (Lewin, 1992:47). Interactions among system elements are non-linear. Causal forces have leverage effects. Small causes can have large impacts and large causes can have small impacts. Normally interaction takes place among neighbouring elements over relatively short ranges. Interaction over longer distances occurs less frequently.



Interactions among elements form positive (or enhancing) feedback loops or negative (or dampening) feedback loops in the system. Normally, complex systems are open to other systems in their environment. They interact with these systems across fuzzy and artificial boundaries. Boundaries are only used for sense-making by the observer. Complex systems operate far away from equilibrium conditions. Equilibrium of a complex system means death. Complex systems are path-dependent. They have a historical, evolutionary path that is reflected in their current features. To cope with changes in its environment, a complex system must have the capability to gather, store, interpret and use information about its environment (Cilliers, 1998:11).

Complex systems are *incompressible*. This means that no representation or model of a complex system can be constructed that is less complex than the system itself without losing some of its features (Cilliers, 1998:4; Richardson *et al.*, 2007:26). Complexity of a system is observed when the interaction of system elements causes patterns of behaviour in time and space at a systems level. With reference to this feature, Boulton and Allan (2007) emphasise the importance of micro-diversity as a key principle of complexity theory. They argue that the mechanisms that initiate change and evolution are observed in the local and specific interactions at particular points in time and space and not through average or global occurrences (Boulton & Allen, 2007:264).

*Non-linearity* is the most fundamental concept in complexity theory and the primary generator of complexity (Morçöl, 2012:21). Even small local disturbances in initial conditions can induce surprising and significant global changes within complex systems through the magnifying power of positive feedback processes (Rihani, 2002:89).

Morçöl (2012:22-23) criticises the unqualified importance of large numbers of elements that contribute to complexity. He adds that both the diversity of the elements and the number and types of the interactions among them also contribute to complexity. According to Morçöl (2012:44), the nature and type of the relationships among system elements contribute more to their complexity than the mere numbers of elements involved.

Feedback loops in a complex system define a reactive system, one that can only react in the present time in response to past stimuli. The concept of *anticipatory systems* expands this definition of a complex system to include a future consciousness (Lombardo, 2006). Rosen, a theoretical biologist, developed the concept of anticipatory systems, and defines it as follows (Louie, 2010):

An anticipatory system is a natural system that contains an internal predictive model of itself and of its environment, which allows it to change state at an instant in accord with the model's predictions pertaining to a later instant.

This means that the behaviour of an anticipatory system reflects aspects of past, present and future along the arrow of time. The anticipatory paradigm, based on a feed-forward mechanism, extends the reactive paradigm based on feedback (Louie, 2010:20). A feed-forward, anticipatory system adapts its current behaviour based on an anticipated future state as determined by its internal model. Therefore, anticipatory systems can be described as a special class of adaptive control systems (Louie, 2010:26). Much earlier, Teige *et al.* (1977:240) advised that an early-warning capacity, to be effective, should be explicitly integrated into the functioning of existing institutions on a permanent and ongoing basis.

All systems containing positive and negative feedback mechanisms share the characteristic of self-reference. Such systems utilise the results of the underlying process to change the process itself (Sahal, 1977:163). This mechanism also explains the phenomena of vicious circles and multiplier effects.

One implication of the definition of complex systems (versus that of predictable, ordered systems) is that a reductionist method of analysis cannot inform us as to the nature or potential trajectory of a complex system (Byrne, 2009:103). There is a fundamental difference, a difference in kind between open complex systems and closed ordered systems.

Complexity is not only about numerous interactions between large numbers of elements. It is also about uncertainty associated with richly organised systems, indetermination, random phenomena, and it is also about chance (Morin, 2008:20).

Complexity theorists aim to understand complex systems as wholes within their contexts, not as aggregations of their parts (Morçöl, 2012:7). However, according to the *holographic principle*, any whole system can only be understood in terms of its parts, and vice versa (Morin, 2008:50). Complexity thinking aims to reconcile and balance a simultaneous focus on wholes (at a systems level), and a focus on constituting, interacting parts, at a subsystem level.

## Behaviours of complex systems

The previous sub-section addressed the features of complex systems. These features allow complex systems to behave in characteristic ways at a systems level. Complex behaviours are of a different kind compared to the behaviours of systems within the domain of order. Behaviours associated with complex systems at a systems level include system dynamics, self-organisation, emergence, adaptation, evolution, and co-evolution (Merali & Allen, 2011). A summary of the characteristic behaviours of complex systems is given here.

**System dynamics:** System dynamics refers to the non-linear dynamics of complex systems that result from mutual dependencies, and interactions of interconnected agents, elements, sub-systems, or other systems within or outside a system (Morgan, 2006:263-272; Klijn & Snellen, 2009:24). Change events are unpredictable contextual or internal events that cause non-linear dynamics in complex systems (Van Gils *et al.*, 2009:77). Forrester (1971) developed mathematical modelling techniques to frame, model and understand complex systems.

**Self-organisation:** Self-organisation refers to the capacity of a system to spontaneously create order through interaction with its environment and local interactions among the components of the system (Maturana & Varela, 1980; Prigogine & Stengers, 1984; Kauffman, 1993; Prigogine, 1996; Merali & Allen, 2011:41). Order is created through intrinsically generated structures and is not the result of *a priori* design. Self-organisation is decentralised and distributed throughout the system. This feature of complex systems enables them to survive, to adapt and to repair themselves when damaged by perturbations.

**Emergence:** Emergence is the creation and appearance of new properties and behaviours at a system level as a result of the interaction of its elementary elements (Holland, 1998). An emergent property is not a property of a component of a system but a property of the entire system. Emergent properties cannot be predicted from knowledge of the system elements (Michael, 1977:94). The unpredictable process of emergence renders it impossible to forecast the behaviour of complex systems with certainty. A better understanding of emergent behaviours of organisations may enable active organisational actors to enhance the adaptive capacity of the organisation (Goldstein, 2011:75).

**Adaptation:** Adaptation is defined as the adjustment to environmental conditions or the modification of an organism or its parts to render it more fit for existence under the conditions of its environment (Merriam-Webster, 2021). Adaptation allows complex systems to cope or deal with uncertainty and the unknowable, changing conditions of the future (Sachs, 1977:171). Adaptation at the level of the whole system is characterised by emergence and self-organization based on the local adaptive behaviour of the components of the system

(Merali & Allen, 2011:41). A framework to evaluate adaptive capacity of a CAS is discussed below and applied in Chapter 7.

**Evolution and co-evolution:** In biological terms, the concept of evolution implies a movement towards increasing order and complexity by means of a process consisting of variation, selection, and retention (Capra & Luisi, 2014:32). Evolutionary processes increase the complexity of social systems as the latter ascend to new levels of order and novelty (Harvey, 2009:28). “Evolutionary changes are triggered by randomness and contingency” (Capra & Luisi, 2014:215). Perhaps the most significant difference between simple systems and complex systems is found in the latter’s evolutionary capacities (Harvey, 2009:27).

Co-evolution refers to the internally driven, self-organisational capacity of a system to evolve in a reciprocal relationship with another co-evolving system at the edge of chaos (Kauffman, 1993; Capra & Luisi, 2014). Simply said, co-evolution describes the process in which two entities adapt to each other over time (Eoyang, 2011:324). Gerrits *et al.* (2009:135) define co-evolution in social systems as the ongoing process of mutual adjustment between interconnected elements whereas mutual adjustment consists of patterns of reciprocal selection. Co-evolution is a non-linear, reciprocal, and dynamic process between hierarchically structured systems and other systems in their environment. The process of co-evolution cannot be controlled. Teisman *et al.* (2009:154-171) argue that a co-evolutionary perspective of decision making and policy formulation in a complex context is more appropriate than the traditional rational and linear model.

**Self-organised criticality and punctuated equilibrium:** The terms self-organised criticality and punctuated equilibrium refer to unpredictable and discontinuous change in organisations (Hazy, 2011:323). Open, self-organising systems may display this kind of behaviour. Bak *et al.* (1987) coined the catching phrase “self-organised criticality” and used the sandpile model to demonstrate this type of behaviour (Waldrop, 1992:304).

Punctuated equilibrium theory refers to complex systems that are in an equilibrium state for most of the time (Brem, 2000; True *et al.*, 2007). Once this equilibrium state is punctuated or disturbed by external events the system may undergo drastic changes. Cascading failures can initiate powerful feedback processes that can drive complex systems to so-called tipping points by means of strong leverage effects (Rihani, 2002:85; Mitchell, 2009:255-257).

**Path-dependency:** Path-dependency is linked to the concept of initial conditions and refers to the tendency for systems to “lock into a particular set of behaviours and/or outcomes early on in their lifecycle due to conditions in the environment and/or the nature of the agents and their early interactions” (Rhodes *et al.*, 2011:14). CASs are characterised by their sensitivity to initial conditions. Path-dependency basically refers to a continuation of historic behaviour patterns along an almost predictable and anticipated trajectory into the future unless internal or external influences introduce deviations (Boulton & Allen, 2007:265). An organisation today is the result of its history – the cumulative effect of the choices, decisions, and events that have occurred during its lifespan (Morin, 2008:xxxvi). In a similar vein, the pattern of behaviour of a complex system at any time is clearly a function of everything that has happened in its past up to that moment (Rihani, 2002:95).

**Bifurcation:** Bifurcation points are like forks in a road, leading to different futures when a system is being pulled in different directions by strong attractors (Morgan, 2006:254-255, 260). Bifurcation phenomena are described quantitatively in a branch of mathematics called catastrophe theory (Majthay, 1985). In qualitative terms it is a change in the nature of an attractor due to changes in the control parameter(s) of a dynamic system (Érdi, 2008:85). Bifurcation points exist between competing attractors or between two evolutionary paths. At a bifurcation point an organisation can appear to oscillate between two attractors. It can hover there for some time, even years before a choice is made and the selected attractor is followed

(Hazy, 2011:527). This type of choice is best made through focused experimentation to generate useful information. Bifurcation theory can be used to study the emergence of new patterns in dynamic systems (Nicolis & Prigogine, 1977:7).

Systems that can display the above kinds of complex behaviours are defined as complex and adaptive systems. These behavioural concepts are applied in later chapters to study phenomena in the internal and external environments of the municipality.

### **3.2.5 Complex adaptive systems theory**

Complex adaptive systems (CASs) constitute a subcategory of complex systems that has an adaptive capacity based on emergence and self-organisation. Not all complex systems are adaptive. Rihani (2002:7) defines CASs as complex systems that are capable of evolution. The following comprehensive definitions of adaptation, adaptive capacity, and coping capacity, adjusted slightly for the purposes of this study, have been defined by the Intergovernmental Panel for Climate Change (IPCC) (2007; 2014):

*Adaptation:* *Adaptation* is a process of adjustment in natural or human systems in response to actual or expected environmental stimuli or their effects, in order to moderate or avoid harm or to exploit beneficial opportunities. *Incremental adaptation* aims to maintain the essence and integrity of a system. *Transformational adaptation* changes the fundamental attributes of a system in response to expected environmental changes and its effects.

*Adaptive capacity* is the ability of a system to adjust, moderate or change its features or behaviours in response to potential environmental change in order to moderate potential damages, to take advantage of opportunities, or to respond to consequences of shock or stress.

*Coping capacity* is the ability of people, institutions, organisations, and systems, using available skills, values, beliefs, resources, and opportunities, to address, manage, and overcome adverse conditions in the short to medium term.

These definitions apply to all kinds of CASs. In this study, the term adaptive capacity is associated with the ability to not only change but also to transform a system's core features and functions (Berman *et al.*, 2012).

A CAS evolves over time through effective, incremental modifications along an uncertain and lengthy evolutionary path that does not lead to an optimal end-state. Therefore, command-and-control methods of management, and detailed forecasts and plans that are appropriate for linear systems are not suitable for a CAS (Rihani, 2002:9). Instead, appropriate management practices for a CAS are informed by local freedom of action of system elements, continuous learning, flexibility, and a variety of options to choose from. The main features and behaviours of a CAS are discussed next.

#### **3.2.5.1 Features and behaviours of a complex adaptive system**

The definition given by Holland (1995:33-39, 93) of a CAS extends the definition of a mere complex system as defined by Cilliers (1998) to include additional aspects. Each interacting, diverse agent within a CAS has an individual capability and strategy that (may) introduce perpetual novelty into the system. Agents within a CAS possess internal models that equip them with an anticipatory or a lookahead capacity that is used to explore alternative futures. The combination of diversity and anticipation contributes to complex CAS behaviour. A CAS constructs internal models as combinations of tested building blocks or concepts to model novel situations in a way that suggests appropriate ways to deal with a situation. A CAS exhibits coherence under change by means of conditional action and anticipation. They do so without central direction. Complex, large-scale behaviour patterns emerge from the aggregate

interactions of less complex agents. Flows of resources through networks within a CAS may cause a multiplier effect and may have a recycling effect.

CASs may adopt various qualitatively different patterns of behaviour from a rich variety of possible options (Richardson *et al.*, 2007:26). Eoyang (2011:318) adds that CASs are sensitive to initial conditions, and that they are path-dependent. They are often high-dimensional, and they are open to external influences. Morçöl (2012:40-43) believes that complex systems can both initiate adaptive changes internally, and they can adapt in response to external environmental stimuli. The adaptive capability of a CAS is highly dispersed and decentralised (Rhodes *et al.*, 2011).

Holland (2006:1-8) emphasises the CAS feature of parallelism which refers to the simultaneous interaction of large numbers of actors. He also discusses conditional actions and states that the actions of agents in a CAS usually depend on the nature of the signals they receive. For Chan (2001:3-6), the CAS features that are important are distributed control (i.e., there is no single centralised control mechanism that governs system behaviour), connectivity, co-evolution, sensitive dependence on initial conditions, emergence, the ability of CASs to survive and thrive under conditions far from equilibrium, and a state of paradox. The latter feature refers to a healthy combination of order and chaos, stability and instability, competition and cooperation, order and disorder.

Two indispensable properties of CASs are those of representation (the ability to gather, store and use information about the environment for later use) and self-organisation (the ability to develop an organised structure that can adapt to cope with changes in the environment) (Cilliers, 1998:10-12). This ability to adapt in the face of internal and external (environmental) disturbances and changes is the result of many decisions made continuously by many dispersed agents.

Another important feature of a CAS is that of robustness. Robustness is the ability of a system to maintain its functionality across a wide range of operational conditions, including environmental variation, input perturbations, sloppiness of system components, subversion, and internal changes (Hammerstein *et al.*, 2006:90-93; Northrop, 2011:156-157). Hammerstein *et al.* also refer to learning as a strategy to achieve robustness, especially if learning and subsequent response times are faster than the rate of change in the environment. Robust systems have a low sensitivity to stressors and destabilising forces.

Co-determinants of robustness (in biological systems at all levels of scale) are modularity, redundancy, and degeneracy (Northrop, 2011:136-165). Modularity refers to the hierarchical, nested architecture of systems within systems – it helps to reduce damage caused by malfunctioning parts and it localises damage to a system (Hammerstein *et al.*, 2006:92). Redundancy could be described as insurance against failure of identical components or elements of a system. It refers to the availability of more than one identical system component performing the same functions. Degeneracy can be defined broadly as the ability of elements that are structurally different in a system to perform the same functions or yield the same outputs.

Preiser *et al.* (2018:48) identify six organising principles of CASs that underly causal explanations of CAS features. These organising principles are based on the characteristics of a CAS as suggested by prominent scholars in the field, including Holland (1995) and Cilliers (1998; 2001; 2005; 2007) quoted above. The six organising principles are the following: CASs are constituted relationally in terms of the relationships among their constituent components; CASs have adaptive capacities that are activated by interactions between actors internal and external to the system; CASs behaviours emerge as a result of non-linear dynamic processes; CASs are radically open systems that allow for the flow of mass, energy and information across fuzzy boundaries; CASs are determined contextually in the sense that the internal structure of

a CAS emerges from patterns of interaction between system elements and elements in the environment; and novel qualities of CASs emerge through complex causality and non-linear, multidirectional interactions. The authors discuss these principles in terms of related concepts and characteristic features of a CAS.

### **3.2.5.2 Determinants of adaptive capacity**

Adaptive capacity enables a system to be more innovative, flexible and independent in adapting to increased risks (Warrick *et al.*, 2017). Adaptive capacity tends to reduce vulnerability to environmental perturbations and promotes sustainable development (Smit & Pilifosova, 2018:879). The adaptive capacity of a CAS is co-determined by several interrelated contributory factors or determinants that relate to the context of a CAS and to the components of a CAS (Gupta *et al.*, 2010; IPCC, 2014; Jones *et al.*, 2017; Warrick *et al.*, 2017; Smit & Pilifosova, 2018; Mullen & Kirchhoff, 2019; Alfaqiri, 2020; Cottrell *et al.*, 2020). These authors have studied the adaptive capacity of socio-ecological systems (SESs). They also developed several frameworks that share many core categories of co-determinants of the adaptive capacity of a SES. The adaptive capacity wheel, for example, was developed as a comprehensive framework to evaluate the adaptive capacity of institutions (Gupta *et al.*, 2010). Jones *et al.* (2017) developed the local adaptive capacity framework as a conceptual framework to evaluate adaptive capacity of communities; and Warrick *et al.* (2017) developed the Pacific adaptive capacity analysis framework to do the same in Pacific Island communities.

Although the different frameworks share common categories or dimensions of co-determinants, the exact determinants per category are highly context-specific (Vincent, 2007; Jones *et al.*, 2017; Warrick *et al.*, 2017). Core categories/dimensions and corresponding criteria included in these frameworks have been adopted by the researcher to construct a novel adaptive capacity framework for this study (see the following section). This framework will be applied in Chapter 6 to evaluate the adaptive capacity of the Hessequa municipality.

### **3.2.5.3 Constructing an adaptive capacity framework in terms of a causal layered analysis**

The adaptive capacity of a CAS can be evaluated in terms of a normative PESTLE framework (PESTLE Analysis, 2020), a Biomatrix framework (Dostal *et al.*, 2005), an integral framework (Esbjörn-Hargens, 2009), or a CLA framework (Inayatullah, 2004). The adaptive capacity framework of a CAS developed for this study, however, is unique and novel. It is structured in terms of a CLA at three causal levels to emphasise its systemic nature and leveraging effects (Meadows, 1999; Inayatullah, 2004). The CLA framework is discussed in Section 4.2.2.

Co-determinants of adaptive capacity are identified at the semantic level or surface level, the level of systems and social causes, and the cognitive level of discourse, worldview, paradigms, myth, and metaphor. Cross-cutting co-determinants span all three levels. The adaptive capacity of an institution is defined by co-determinants in different dimensions at each level. Different context-specific criteria in each dimension can be applied to evaluate the adaptive capacity of an institution in its context, as summarised in Table 3.3, below, and demonstrated in Chapter 6.

**Co-determinants at the semantic level:** Adaptive capacity at the semantic level is addressed in terms of two dimensions, namely *resources and assets*, and *ability to implement*.

*Resources and assets:* The availability of, or access to, a wide spectrum of political, economic, social, technological, legal and environmental resources, contributes to the adaptive capacity of institutions and communities (Gupta *et al.*, 2010; Warrick *et al.*, 2017; Smit & Pilifosova, 2018). Institutions that can harness these resources effectively and efficiently are relatively more adaptive than resource-poor institutions. Adaptive capacity requires some forms of flexibility and responsiveness, which in turn demands that some degree of redundancy must

be built into the system (Gharajedaghi, 1985:80). The availability of a redundant capacity of infrastructure, abundance of resources, flexibility and substitutability of resources and infrastructure that can ensure security of supply of important products and services under different and changing environmental conditions, enhance adaptive capacity (Gupta *et al.*, 2010; Jones *et al.*, 2017). Poor communities and communities without access to basic services and resources (e.g., income, health, and education) are very vulnerable and experience very low levels of adaptive capacity (Magadza, 2000; Warrick *et al.*, 2017). Enhancement of adaptive capacity involves similar requirements as the promotion of sustainable development (Smit & Pilifosova, 2018). The adaptive capacity of a complex system is enhanced through the involvement and participation of interconnected stakeholders that are free and capable of interacting according to appropriate rules (Rihani, 2002:11).

Criteria to assess the dimension of *resources and assets* include the availability of economic, natural, technological, and financial resources, and infrastructure. The availability of social capital, human talent and skill are critical resources that can leverage other resources. Health status and education levels and access to proper housing, basic services, health, and education facilities co-define the adaptive capacity of stakeholders and exposed individuals (Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017; Smit *et al.*, 2018). More criteria are listed in Table 3.3, below.

*Ability to implement*: To have value, a decision has to be implemented as part of the decision process (Simon, 1949:2; Drucker, 1967). The capacity of an actor to implement decisions effectively and efficiently is co-defined by the availability of a combination of resources that include physical resources, human skills, knowledge, and expertise. The availability of social capital and the capacity of actors to self-organise, innovate and improvise, enhance the ability of a community to implement adaptation initiatives (Gupta *et al.*, 2010). The ability to collaborate with diverse actors from different domains, strengthens adaptive capacity (Alfaqiri, 2020).

Criteria to evaluate *ability to implement* include the availability of a spectrum of diverse and substitutable resources and the human skills and talent to coordinate the implementation process. The ability to collaborate with diverse role players from different sectors also indicates a degree of adaptive capacity (Gupta *et al.*, 2010; Warrick *et al.*, 2017). Examples of successfully implemented adaptation projects confirm the capacity to implement.

**Co-determinants at a systems level:** Adaptive capacity at the systems level is addressed in terms of the dimensions of *institutions and governance, experimentation, innovation and learning, future-conscious decision making, and information and KM*.

*Institutions and governance*: It is assumed that institutions and governance systems enhance adaptive capacity when they meet fair governance criteria (Magadza, 2000; Gupta *et al.*, 2010). Governance institutions that are legitimate, responsive, accountable, and non-discriminatory are likely to create an environment that is conducive to adaptation. Institutions that apply rules, norms and policies that promote equitable and fair access to capital, resources, key assets, and facilities in non-discriminatory ways by different groups of stakeholders also enhance adaptive capacity (Jones *et al.*, 2017). Institutional support systems constitute a key aspect of adaptive capacity (Smit & Pilifosova, 2018:896).

Criteria to evaluate the contribution of *institutions and governance* to adaptive capacity include the legitimacy of, and public support for governance institutions. The transparency and inclusiveness of decision making and policymaking processes, the responsiveness of the institution to society, and the way institutions support their exposed members co-define adaptive capacity (Gupta *et al.*, 2010; Jones *et al.*, 2017; Smit & Pilifosova, 2018).

*Experimentation, innovation, and learning*: An environment and a culture that foster experimentation, innovation and learning on different scales contribute to adaptive capacity

and enable community development (Gupta *et al.*, 2010; Jones *et al.*, 2017). Adaptation flourishes in environments where there is freedom and experimentation, and a certain amount of disorder (Meadows, 2008:80) – this is typically found within the complex transitional region at the border between order and chaos (Kauffman, 1993:174). Rigid order in a system takes away its feature of plasticity which is a prerequisite for self-organisation (Cilliers, 1998:12). Enhancement of adaptive capacity directly contradicts the principles of blueprint planning (Swanepoel & De Beer, 2011:25).

Chapman (2015) proposes that the concept of *creative capacity* be used as an alternative to *adaptive capacity* to evaluate resilience in SESs. Senge (2006:364) emphasises that learning goes beyond intellectual understanding only. Learning is about the building of capacity for effective action over (considerable) time. Innovation is about the commercial exploitation of inventions in the form of novel ideas, products, processes, services, or practices (Smith, 2010:5). The innovation process or innovation chain, however, includes processes of learning and experimentation (Burgelman *et al.*, 1996; Smith, 2010). These processes are more productive in an enabling environment and within a learning-oriented culture (Senge, 2006).

Criteria to assess whether *experimentation, innovation, and learning* contribute to adaptive capacity include the existence (or not) of adaptive spaces and the availability of a safe environment that fosters these practices. Organisational and procedural changes associated with an adaptive approach, and that apply to municipalities, include the following (Swanepoel & De Beer, 2011:25):

- A flexible and collaborative process of developing an IDP;
- A bureaucracy that is flexible and responsive to community needs; and
- Integrated development planning, implementation, and learning.

Examples of process, product or service innovations, evidence of learning from experiences, and experience of successfully dealing with disruptive events, confirm a certain level of adaptive capacity (Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017).

*Future-conscious decision making:* Future-conscious decision making considers possible, probable, and desired longer-term futures. Effective leaders need contextual intelligence which is the ability to anticipate and to interpret emerging trends (Schwab, 2016:99). Lombardo (2006) refers to this capacity as a future consciousness, and Poli (2010; 2019) uses the term anticipatory capacity. Leaders who are contextually intelligent participate in diverse networks of collaborators and stakeholders across traditional boundaries and flattened hierarchies. They develop and implement integrated ideas based on holistic perspectives (Schwab, 2016:99-100). A foresight process and an anticipatory capacity inform future-conscious decision making (Horton, 1999; Voros, 2003; Lombardo, 2006; Bigley, 2018; Poli, 2019). Future-conscious governance is guided by a long-term vision, an environmental scanning capacity, and flexible, collaborative learning-based decision making (Gupta *et al.*, 2010; Jones *et al.*, 2017).

Criteria to evaluate the contribution of *future-conscious decision-making* include the extent to which decision-making benefits from environmental scanning, foresight practices, future consciousness, a longer-term perspective, visionary leadership, and scenario thinking (Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017; Bigley, 2018).

*Information and KM:* The IPCC has demonstrated that the proactive management of information and knowledge may significantly enhance the adaptive capacity of a complex system (IPCC, 2022). Effective information and KM enable actors to generate and access, share, assess and utilise relevant information and knowledge in support of adaptation. Actors who generate accurate data and information about environmental changes, risks and threats have to share it with stakeholders. These stakeholders need the skills, knowledge and understanding to access, analyse and interpret relevant information. They also need the



capacity to develop, evaluate and choose appropriate adaptation options wisely (Gupta, 2010; Jones, 2017; Warrick *et al.*, 2017).

Criteria to assess the contribution of *information and KM* include the availability of relevant information, the ability of institutions to package the information appropriately for consumers, the ability of exposed actors to understand the information and to then implement adaptive action. The ability of decision makers to apply systems-thinking principles and a complexity perspective contributes to adaptive capacity (Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017).

**Co-determinants at a cognitive level:** Adaptive capacity at the cognitive level is addressed in terms of the following dimensions, namely *paradigms and worldviews*, *myths and metaphors*, and *organisational culture*.

*Paradigms and worldviews:* From a CLA perspective, paradigms and worldviews inform the design of institutional systems (at a systems level) that produce the visible results at the semantic level (Inayatullah, 2004). Belief systems, worldviews, and values constitute a very important dimension of adaptive capacity (Warrick *et al.*, 2017). Rittel and Webber (1973:166) note: “The analyst’s ‘world view’ is the strongest determining factor in explaining a discrepancy and, therefore, in resolving a wicked problem”. The way the analyst perceives, interprets, and understands the problem co-defines the approach followed in addressing the problem. “The principle of adaptiveness requires a change of mindset. It demands a willingness to learn as you go along. It stands for experimentation and therefore disjointed, sometimes dirty, short-term, trial and error planning and implementation” (Swanepoel & De Beer, 2011:58).

In the dynamic context of 4IR, leaders’ success will be co-determined by an ability to continually learn, adapt and challenge their own conceptual and operating models of success (Schwab, 2016:52). Institutionalised and ongoing self-reflection evaluates the appropriateness of the current ethos, paradigms, and worldviews, assumptions, and beliefs within a dynamic context (Dostal *et al.*, 2005:237). The ability to change mind models, paradigms, and worldviews through critical self-reflection and learning has the most powerful leveraging effect on the adaptive capacity of systems (Meadows, 1999).

Future leaders need the ability to change their mental and conceptual frameworks in order to be effective in an increasingly complex and disruptive environment (Schwab, 2016:100). Schwab adds that “in today’s disruptive, fast-changing world, thinking in silos and having a fixed view of the future is fossilizing” (Schwab, 2016:100). A holistic, flexible, and adaptive approach is required to address complex issues.

Criteria to assess the contribution of *paradigms and worldviews* include the willingness of institutions to involve stakeholders with diverse paradigms and worldviews in decision making and the willingness to consider different perspectives, worldviews, problem frames, definitions, frames of reference and solutions (Dostal *et al.*, 2005). An advanced level of self-agency and willingness of communities to accept change and to employ new knowledge to deal with their challenges contribute to adaptive capacity (Gupta *et al.*, 2010; Warrick *et al.*, 2017).

*Myths and metaphors:* These are the deeper assumptions, stories, and verbal pictures that are held as fundamental truths by actors. The way actors use myths and metaphors reflect how they understand and interpret reality and how they deal with reality. Myths and metaphors underlie the behaviours and decision making of actors (Inayatullah, 2004; Dostal *et al.*, 2005).

Criteria to evaluate the contribution of *myths and metaphors* to adaptive capacity include the willingness of actors to reconsider and to reflect upon the relevance and appropriateness of their current myths, metaphors, and dominant belief systems within a dynamic VUCA context.

*Organisational culture*: Organisational culture is part of the conceptual reality of an organisation. Culture is co-defined by the cohering values, mutual trust, respect, norms, and guiding and regulating principles of a system (Dostal *et al.*, 2005). Culture informs and shapes the future unfolding and development of a system as a physical reality. The ability to change an organisation's culture has great leveraging effects on its adaptive capacity (Alfaqiri, 2020).

Criteria to assess the contribution of *organisational culture* include the level of trust and respect among actors. It includes the degree to which an institution allows its actors to explore, to experiment and to innovate whilst risking failure, to collaborate with external actors, and to share information with them (Jones *et al.*, 2017; Warrick *et al.*, 2017; Alfaqiri, 2020). It includes the extent to which an institution fosters adaptive spaces where "conflicting" and "connecting" can take place (Uhl-Bien & Arena, 2018).

**Cross-cutting co-determinants**: Co-determinants of adaptive capacity that cut across all three the above levels are *power and agency*, *leadership capacity*, and *variety and options*.

*Power and agency*: The adaptive capacity of an organisation is co-defined by the way in which actors perceive and use their power and agency to pursue their own aims and the aims of the organisation. Perceptions of self-agency co-define an actor's motivation to take control over circumstances and to implement adaptive actions that are likely to increase the probability of realising desired futures. Self-agency reflects actors' confidence in their ability to be self-sufficient. The application of personal power and agency by actors that are aligned with the ethos and aims of the organisation enables the organisation to carry out adaptive actions (Dostal *et al.*, 2005; Jones *et al.*, 2017; Warrick *et al.*, 2017).

Criteria to evaluate the contribution of *power and agency* to adaptive capacity include actors' perception of their self-efficacy, ability, and power to influence the future through their actions and initiative. Examples of cases where actors have taken initiative and deliberate action to address disruptions reactively or proactively may confirm the presence of this dimension of adaptive capacity. A deterministic approach to adaptation, in contrast, tends to increase vulnerability (Warrick *et al.*, 2017).

*Leadership capacity*: The adaptive capacity of an organisation is enhanced through the application of effective and visionary leadership, adaptive leadership, and complexity leadership styles (Heifetz *et al.*, 2009; Warrick *et al.*, 2017; Uhl-Bien & Arena, 2018). Adaptive, visionary, inspirational and complexity leadership spans all three causal levels of adaptive capacity. Adaptive leadership provides adaptive spaces from where a variety of adaptive responses may emerge (see Section 3.5, below, on leadership theories). Complexity leadership and transformational leadership tend to transform mind models, governance systems and the ways in which all types of resources are employed (Uhl-Bien *et al.*, 2007; 2018; Marion & Uhl-Bien, 2011; Arena & Uhl-Bien, 2016).

Criteria to evaluate the contribution of *leadership capacity* to adaptive capacity are the following (Gupta *et al.*, 2010; Warrick *et al.*, 2017; Alfaqiri, 2020):

- The availability of visionary and adaptive leadership capacity, and good and effective management systems that are distributed throughout the CAS;
- The ability of leaders to devise and use effective communication processes;
- The availability of flexible and adaptive high-level strategies and plans that define responses of a CAS to a spectrum of possible disturbances;
- Leadership that initiates partnerships, engages stakeholders, and manages resources effectively;
- Readiness of leaders to consider different perspectives and opinions;
- Willingness of leaders to discuss doubts with stakeholders;
- Availability of entrepreneurial leadership that demonstrates a can-do attitude; and

- Leadership that fosters collaboration with key actors to achieve common goals.

*Variety and options*: Adaptive capacity allows a system (or a CAS) to move around within the Ashby space in order to match the variety or complexity that confronts the system (Ashby, 1961; Boisot & McKelvey, 2011). The availability of a spectrum of options to choose from, and to combine, enhances adaptive capacity. It adds more flexibility to adaptation strategies. This implies that a wide spectrum of internal and external substitutable resources and many degrees of freedom to think, act, behave, implement, and evaluate, exist (Gupta *et al.*, 2010; Warrick *et al.*, 2017). Also important is a culture that appreciates the principle of variety of perspectives, ideas, futures, and options.

Criteria to evaluate the dimension of *variety and options* include the following: The availability of a range of adaptation options, policy options, solutions, and initiatives to reduce vulnerability and to enhance sustainability in the face of disruptions; access to a range of resources (e.g., water, energy, food, finances, and facilities); and the application of multiple perspectives and approaches to frame issues of concern (Gupta *et al.*, 2010; Warrick *et al.*, 2017).

In terms of the CLA philosophy, the dimensions of adaptive capacity discussed above are interconnected, interrelated and interdependent. Combinations of myths and metaphors, worldviews and paradigms, constitute the mental models that co-produce the conceptual reality that is reflected in the design of corresponding systems in physical reality (Dostal *et al.*, 2005). Therefore, the culture and ethos of a system co-define what type of leadership, governance institutions, decision processes, KM processes, and innovation and learning processes are employed at a systems level. These systems and mental models co-define the capacity of a system to access resources and assets, and to implement adaptive measures.

The co-determinants of adaptive capacity, in terms of this innovative CLA model, are summarised in Table 3.3. The dimensions are arranged according to three causal levels. Several cross-cutting dimensions span all three levels. The table contains a brief description of each dimension and criteria to evaluate adaptive capacity in each dimension. Together, these contributory factors co-determine the emergent property of adaptive capacity of CASs and SESs (Dostal *et al.*, 2005; Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017). These factors may either constrain or enhance adaptive capacity. The diverse nature of the different dimensions and their associated aspects make it almost impossible to implement them all at the same time. Therefore, the aim should be to improve adaptive capacity by focusing on a single characteristic with leveraging effects (Meadows, 1999; Jones *et al.*, 2017).

**Table 3-3 Dimensions of adaptive capacity at three causal levels**

Dimensions	Description of dimension	Criteria to evaluate adaptive capacity
<b>Co-determinants at the semantic level</b>		
<b>Resources and assets</b>	Access to and availability of a wide spectrum of resources and infrastructure with redundant capacity and flexibility that can ensure security of supply of important products and services under different and changing environmental conditions.	Availability and distribution of knowledge, education, skills, expertise, human capital, and labour. Availability of and access to economic, natural, technological, and financial resources and infrastructure. Distribution of income and physical resources and assets. Strength of collective action and social cohesion. Availability of robust, interchangeable infrastructure and technology with redundant capacity and back-up systems. Access to housing, health services, education facilities, clean water and sanitation, electricity, transport infrastructure and ICT. Ability of stakeholders to access, control and utilise resources. Availability of infrastructure that connects actors, e.g., ICT, roads, railways, harbours, and airports.

<b>Ability to implement</b>	Capacity to implement decisions effectively and efficiently as the final step of the decision process depends on the availability of a spectrum of resources and implementation systems.	Availability of resources and human talent to implement decisions. Ability to collaborate with key, diverse actors at different levels from different sectors to implement decisions. Degree of empowerment of individuals to improvise, to self-organise, to innovate and to implement. The level of success of communities in dealing with disruptions such as droughts, floods, storms, and diseases in the past.
<b>Co-determinants at the systems level</b>		
<b>Institutions and governance</b>	Institutions that provide legitimate, fair, responsive, and accountable governance and equitable opportunities to access and use key assets, capital, and resources.	Stable and reliable political and legal resources. Level of public support for the institution. Levels of legitimacy and transparency of policymaking processes. Whether or not institutional rules and policies are fair and accepted. Responsiveness of the institution to society. Level of institutional support to communities. The presence of norms, rules, policies, and laws that promote adaptive capacity. Extent to which inequalities in society and equitable access to resources are addressed. The level of care for the poor and vulnerable groups.
<b>Experimentation, innovation, and learning</b>	An enabling environment, ethos and culture that promotes and supports innovation, experimentation and learning at both a small and a large scale.	Whether adaptive spaces are created and utilised. Extent to which actors are encouraged to learn and experiment. Evidence of institutional learning from past experiences. Willingness to question current assumptions, insights, paradigms, policies, and procedures, and to update them. Existence of learning networks with diverse collaborators from diverse sectors and levels. Evidence of process, product, or service innovations.
<b>Future-conscious decision making</b>	An anticipatory and foresight capacity that informs decision making. Governance guided by a long-term vision, a future consciousness and flexible, collaborative and learning-based decision making.	Extent to which decision making is informed by environmental scanning (i.e., situational awareness), an anticipatory capacity and foresight. Evidence that key stakeholders collaborate in decision making. Evidence of a range of proactive policy options, strategies, and measures to exploit opportunities and address possible risks. Examples of initiatives to foster the autonomous capability of individuals to improvise.
<b>Information and KM</b>	Ability of stakeholders to generate, access, share, assess and utilise relevant information and knowledge in support of adaptive action.	Level of understanding of reality in terms of a complex systems perspective. Level of understanding the consequences of decisions. Level of institutional knowledge about drivers of change, complex causality, and adaptation options. Ability of the institution and stakeholders to access, receive, generate, assess, share, and disseminate information and knowledge regarding adaptation options available to exposed individuals. Examples of residents' ability to analyse information and to devise and implement adaptation options for critical, basic needs. Examples of cases where the institution shares information with stakeholders to enable them to act proactively in anticipation of perturbations.
<b>Co-determinants at the cognitive level</b>		
<b>Paradigms and worldviews</b>	Discourses, ideologies, and perspectives that are mental constructs that constitute the mind models which actors use to	Frequency of continuous reflection and evaluation of current paradigms, worldviews, and mental models. Willingness to participate in multiple discourses with diverse stakeholders. Willingness to consider diverse perspectives, problem frames, and solutions.

	understand and shape the worlds they live in.	
<b>Myths and metaphors</b>	Beliefs and symbols that underlie behaviours and decision-making.	Openness to acknowledge and review the relevance and applicability of current myths and metaphors.
<b>Organisational culture</b>	The ethos, values, shared belief systems, mutual trust and respect, risk perception, respect, norms, and guiding principles of a system.	Level of trust and respect observed. Extent to which experimentation, learning, teamwork, collaboration, information sharing, and transparency are promoted.
<b>Cross-cutting co-determinants of adaptive capacity</b>		
<b>Power and agency</b>	Power and self-agency of actors as sources of inspiration and motivation to take control and to plan and implement adaptive actions.	Degree to which power and influence are used to enhance the adaptive capacity of the institution at all three levels. Levels of self-agency, i.e., people's perception of their self-efficacy and power to control the future through personal motivation, initiative, and drive to carry out adaptive actions. Extent to which actors initiate and act in response to stressors.
<b>Leadership capacity</b>	Distributed leadership that is adaptive, visionary, and inspirational co-creating system-wide adaptive capacity and developing a variety of possible responses.	Availability of good and effective management and leadership capacity distributed in the CAS. Effective communication. A high-level strategy that defines CAS responses to disturbances under different scenarios. Leaders initiating partnerships, engaging collaborators and stakeholders, and managing resources effectively. Extent of visionary, adaptive, collaborative and complexity leadership practices. Willingness to consider different perspectives and opinions, and to discuss doubts. A can-do attitude among leaders.
<b>Variety and options</b>	A spectrum of options to choose from and to combine. Abundance of resources, perspectives, ideas, plans, and futures providing many degrees of freedom.	Availability of a range of adaptation options and initiatives. Availability of a range of resources and substitutes. Access to a range of food supplies, water and electricity supplies, transport facilities and land. Diversity of means to earn an income and to source funding under different scenarios. Multiple perspectives, truths, insights, and ideas informing decision making.

Sources: (Hatfield-Dodds *et al.*, 2007; Gupta *et al.*, 2010; Jones *et al.*, 2017; Warrick *et al.*, 2017; Mullen & Kirchoff, 2019; Alfaqiri, 2020; Cottrell *et al.*, 2020)

The adaptive capacity framework in Table 3.3 can be applied to evaluate the coping capacity of a social system to get a baseline or reference point regarding coping capacity (Warrick *et al.*, 2017). It can also be used to assess the vulnerability of systems to current and future environmental changes (Smit & Pilifosova, 2018). Such a baseline study could identify weaknesses in adaptive capacity and could suggest initiatives to enhance adaptive capacity. It could also be used as an input into the IDP to raise awareness of critical adaptation issues.

The enhancement of adaptive capacity reduces vulnerability and promotes sustainable development (Smit & Pilifosova, 2018:879). Most, if not all the adaptive strategies alluded to in Table 3.3 are no-regret adaptations that will result in immediate benefits while future adaptive capacity is also addressed (Smit & Pilifosova, 2018).

In terms of the principle of general complexity (Morin, 2007), the dimensions of co-determinants of adaptive capacity should apply to all kinds of CASs. One class of CASs is social systems, which includes human social systems with human agents (Northrop, 2011:12).

### 3.2.5.4 Application of a complex adaptive system modelling framework

Although computer simulations are used as a research tool to study CASs, this study is based on a qualitative evaluation of a CAS in relation to decision making (Chan, 2001:1). A CAS model or framework should have enough specificity to guide practical data collection and analysis and it has to bridge the gap between general complex systems theory and the constructs of CASs (Rhodes *et al.*, 2011:200).

Rhodes *et al.* (2011:3-15) apply a CAS-modelling framework consisting of the following basic elements and behaviours to model a governance process perceived as a CAS: **The system** is defined within its boundaries, separate from its environment. **Factors and rules in the exogenous environment** refer to external factors within the domains of the PESTLE framework, such as external rules, laws, codes, assumptions, and norms that govern agent behaviours and the outcomes of the system. **Factors and rules in the endogenous environment** include internal and external factors perceived as being important for decision making by participating agents. It also includes the characteristics of agents, competition or cooperation among agents, and organisational structure. Internal rules define agent and system behaviours. **Agents** are individuals or groups that participate in processes within the scope of the system in pursuit of individual or joint objectives. **Purposeful processes** relate to purposeful action and interaction of agents that connect agent behaviour with the outcomes of the system. **Impactful outcomes** are the direct results of the processes of the system whereas outcomes are the impacts of the outputs on the relevant environment.

The presence of the above six elements in bold print is a necessary but not sufficient indicator of the existence of a CAS. To qualify as a CAS, the radically open system has to demonstrate the behaviours of self-organisation, adaptation, emergence, path-dependency, and bifurcation.

Teisman *et al.* (2009:57-58) identified and studied three sources of dynamics in complex systems: These are small variations in initial conditions in the internal and external environments, multiplicity of contexts, and disturbances through change events that may have unforeseen and significant impacts on the system. Dissipative or self-organising structures focus on the property of complex systems that enables them to develop or change internal structure spontaneously and adaptively in order to cope with or manipulate their environment (Teisman *et al.*, 2009:97-100). Co-evolution is defined as a continuous process of mutual adjustment among interconnected systems in order to fit better within their environment (Teisman *et al.*, 2009:134-135).

Gerrits *et al.* (2009:137) distinguish between actors and agents as system elements in the domain of public administration. *Actors* are defined as active and adaptive. *Agents* are defined as passive entities as they exhibit adoptive behaviour. Actors and agents may be individual people, nested systems such as organisations and departments, or even physical systems such as rivers or ports (Gerrits *et al.*, 2009:137). Agile actors or first movers introduce novelty and dynamic change into complex systems through their creativity and innovation at various hierarchical levels in society (Room, 2011:144).

Chan (2001), Ahmed *et al.* (2005) and Holland (2006) warn that the traditional technique of reduction does not work in the case of CAS research. To understand a complex system, one must study the system as a whole without decomposing it into its constituent components. Another characteristic of a CAS is its ability to *adapt in*, and *evolve with*, a changing environment. Chan's comment is worth repeating (Chan, 2001:2):

Rather, the concept to be examined is that of a system *closely linked with* all other related systems making up an ecosystem. Within such a context, change needs to be seen in terms of *co-evolution with* all other related systems, rather than as *adaptation to* a separate and distinct environment.

The implication of Chan's comment for this study is that the scope of the CAS model of municipal decision making in Chapter 6 must include consideration of its external environment.

### 3.2.6 Chaotic systems

The noun 'chaos' can be defined as a state of utter confusion, a confused mass or mixture, a state of things in which chance is supreme, and the inherent unpredictability in the behaviour of complex natural systems (Merriam-Webster, 2021). Synonyms for chaos include the words disorder, confusion, anarchy, turmoil, mess, and unruliness. However, in chaos theory the technical (mathematical) meaning of the term chaos refers to the behaviour of low-dimensional, deterministic systems that appear to be random but in fact show deeper levels of patterned order (Capra & Luisi, 2014:105).

In mathematical terms, chaotic behaviour results from the non-linear interaction of a small number of equations (Lewin, 1992:12; Cilliers, 1998:ix; Thietart & Forgues, 2011:55). The resulting behaviour is impossible to anticipate, even within the same strange attractor. Attractors are mathematical representations of the behaviour of a system over time within a phase space or phase portrait (Kauffman, 1993; Capra & Luisi, 2014:115). The behaviour of the same system can go through transitions or bifurcations, from stability to periodicity to chaos. The deterministic and patterned behaviour of chaotic systems is beautifully illustrated in the cases of the three-dimensional Lorenz attractor (Gleick, 1987) and the two-dimensional Ueda attractor (Capra & Luisi, 2014:112-113). These examples illustrate the unique characteristic of chaotic systems, namely, sensitive dependence on initial conditions. Sensitivity to initial conditions means that even tiny errors in initial measurements may lead to huge errors in subsequent predictions of the future behaviour of a chaotic system. Gleick (1987:23), Mitchell (2009:20), and Capra *et al.* (2014:114) refer to this sensitivity as the *butterfly effect*, first observed and studied by Lorenz in 1961.

The long-term behaviour of a chaotic system is impossible to predict. Small changes in system parameters can initiate entire transformations of such systems and may convert orderly behaviour of systems to disorderly and chaotic behaviour (Kauffman, 1993:174-180). In contrast to chaotic systems, complex systems are less sensitive to small changes in system parameters due to a built-in robustness based on their self-organising capacity (Cilliers, 1998:ix).

Kauffman (1993:173) observed that massively disordered systems can spontaneously 'crystallize' a very high degree of order. Simple systems can exhibit complex behaviour and complex systems can give rise to simple behaviour (Gleick, 1987:304). In his study of chaotic systems, Gleick (1987:56) concludes that islands of structure could appear within the disorder and that a complex system can give rise to turbulence and coherence at the same time. These changes in behaviour of non-linear systems can be explained in terms of different attractor basins, each with a separate attractor, within the phase space of a specific system. A dynamic picture containing all the possible attractor basins and attractors of a non-linear system is called a phase portrait (Capra & Luisi, 2014:115). Even small changes in system parameters can introduce dramatic changes to a phase portrait. Attractors may change or disappear, and new ones may appear in the case of structurally unstable systems. These critical points of instability are called bifurcation points.

In their study of system dynamics, self-organisation, and co-evolution of complex governance process systems, Teisman *et al.* (2009:15-16) found that the same process system (consisting of various interest groups, governance institutions, policy systems and physical systems) can go through four different system states in random order. The system states can be described as either stable and productive, inert and unproductive, dynamic and productive, or chaotic and unproductive (Edelenbos *et al.*, 2009:175)

A change in system parameters changes system behaviour. Changes in system parameters may introduce sudden, dramatic, and fundamental changes in system behaviour and, thus, in attractors. Such transition points in system behaviour are called bifurcation points (Kauffman, 1993:180). Three basic types of attractors have been identified, namely a point attractor with a stable equilibrium, periodic attractors exhibiting periodic oscillations, and strange attractors that are linked to chaotic systems (Capra & Luisi, 2014:112).

### 3.2.7 Strengths of complexity theory

The complex systems paradigm transcends and includes the reductionist worldview and integrates it with so-called holistic or integral approaches (Érdi, 2008:5; Wilber, 2007; 1996). The explanatory capacity of the complexity paradigm is much more comprehensive and powerful than the reductionist Newtonian paradigm (Teisman *et al.*, 2009:5). The complexity worldview has successfully challenged many long-held deterministic and reductionist simplifying assumptions and has demolished disciplinary boundaries in favour of interdisciplinary collaboration to deal with complex issues (Mitchell, 2009:300-301; Morçöl, 2012:143-145).

Morçöl (2012:268) refers to complexity theory as a positive theory, a theory that can help us understand why the outputs of governance processes often differ from initial expectations (Teisman *et al.*, 2009:5). Non-linear system dynamics associated with complex policy systems make it impossible for actors in governance structures to control such systems or to predict their future behaviour. The complex nature of policy processes is such that the links between governmental decisions and actions (i.e., causes) and planned outcomes (i.e., effects) are not linear anymore, but non-linear. Complexity theory provides a useful framework to study non-linearity in governance systems (Teisman *et al.*, 2009; Rhodes *et al.*, 2011).

Complexity theory provides conceptual and methodological tools that can be used to simplify, study, and understand complex natural and social systems as wholes, not as aggregations of their parts, within their contexts (Morçöl, 2012:7). Merali and Allen (2011:50) remark as follows:

Complex systems thinking is attractive because it gives us the concepts that have been used to characterize social behaviour in the human sciences (e.g., emergence, adaptation, evolution, diversity, serendipity), and allows the possibility of developing models that capture some of the richness and diversity of human existence.

Complexity science has a specific appeal to social scientists in search for systemic principles to explain the dynamics of socio-economic systems. Principles of complexity have “the potential to address the ideas of path dependency, creativity, disruptive change, unpredictability and self-determination that are characteristic of human activity systems” (Merali & Allen, 2011:43).

Complex systems exist simultaneously in multiple dimensions and at different hierarchical levels. Any approach to influence a complex system effectively has to meet the requirements of Ashby’s law of requisite variety, and the derived law of requisite complexity, in each of these dimensions and levels at the same time (Boisot & McKelvey, 2011:279).

Complexity allows us to recognise the true nature of the system. It provides some new tools to explore the system and it enables us to see the limits of traditional ‘orderly’-based interpretations (Geyer & Rihani, 2010:128). Complexity theory provides a vocabulary to discuss and to interpret the behaviour of non-linear systems and processes. It also provides guidelines for the improvement of the robustness, adaptability, and fitness of complex systems that the paradigm of order does not provide.



Complexity theory has practical benefits and advantages. Limitations of the complexity paradigm are associated with concerns about its academic and theoretical aspects. Often these concerns are expressed from the perspective of a reductionist, scientific paradigm.

### 3.2.8 Limitations of complexity theory

Critiques against 'complexity theory' revolve around the absence of a singular, agreed-upon definition of complexity, the absence of an associated theoretical framework, and the need for a supporting ontology, epistemology, and methodology of complexity (Pollit, 2009:213). Various authors agree that there is no single unified theory of complexity or complexity science or complexity theory (Mitchell, 2009:300-301; Morçöl, 2012). A claim is made that the complexity approach cannot be reduced and restricted to the confines of a theory, a worldview or paradigm, models, or methods. It should rather be defined as the main characteristic of a cognitive style and a project in evolution (Najmanovich, 2010:92).

Pollitt (2009) is very sceptical about the status and maturity of complexity science and complexity theory. He raises three concerns. First, he is uncertain about the epistemological and ontological foundations of the theory. He describes complexity theory as "very abstract and very general" and says that "[i]t is a theory about almost everything, rather than a theory about some specific sector, process or problem" (Pollitt, 2009:213). Second, he is uncertain about the appropriate and typical research methods associated with complexity theory. Third, Pollitt is not convinced that complexity theory adds real value over and above the value added by alternative existing theories. He argues that the explanatory value of complexity theory is limited because it does not describe causal mechanisms and it neglects power relations in social systems.

Complexity theory suggests that context-dependent generalisations about the properties of complex social systems can indeed be made but not context-independent theories or universal laws as in the case of the Newtonian sciences (Morçöl, 2012:265). Therefore, study findings of complex systems can only be generalised with caution.

### 3.2.9 Implications of complexity theory for case study research

The notion of complexity has implications for this study. The claimed certainty and objectivity of the scientific paradigm are being replaced by a realisation that epistemology becomes an integral part of scientific theories and observations. The epistemology of a complex systems approach implies that both the observer and the process of knowing co-define what is observed. Therefore, the researcher needs to adopt a reflective approach while realising that all knowledge is limited and approximate (Bryman, 2012:393-394).

The move from an intellectual perspective based on reductionism, simplicity, and orderliness to a non-linear, dynamic and complexity approach requires a radical transformation of perspective, paradigm, and strategy to address challenges and issues (Najmanovich, 2010:92, 99). Table 3.3, above, contrasts a reductionist paradigm with a complexity paradigm.

Complexity is neither an expansion of simplicity nor a complication of it, but a global transformation of the ways in which knowledge is created, validated, and shared. A complexity approach transforms the way decision contexts are interpreted, decisions are made, and problems are addressed (Dostal *et al.*, 2005:83; Najmanovich, 2010:104; Poli, 2013:142; Capra & Luisi, 2014:80-82).

The behaviours of complex systems, for example, adaptation, emergence, evolution, self-organisation, and bifurcation become the units of analysis at a macro scale rather than the actors involved. At a micro scale, the actors become the units of analysis in terms of Patton's case study rule (Patton, 2015:536).

The implications of a complexity epistemology are discussed by Anderson *et al.* (2005), Morgan (2006:287-289), Geyer & Cairney (2015:5-6) and Patton (2015:147, 293). Complex systems have to be studied together with the temporal and spatial contexts and environments with which they interact and co-evolve. Studies should focus on patterns of relationships, interactions, and interdependencies among actors, behaviours at a macro level, emergent phenomena, leverage effects, bifurcation points, and tipping points. The resilience and adaptive capacities of complex systems have to be understood as well.

The study of complex systems requires an open, emergent, and flexible research design as the system in focus co-evolves with its context. Thus, data collection and analysis happen together in an iterative, exploratory fashion (Patton, 2015:149). Snowden and Boone (2007) recommend a process of “probe”, “sense”, and “respond” in order to understand complex system behaviour. Patton (2015:147) advises that the inquiry into complex systems itself must be adaptive to facilitate “learning by doing and observing”. Tolerance for ambiguity and messiness is required. It is important to document the co-evolving interactions between researcher and participants as the entire qualitative inquiry is a co-evolutionary process (Patton, 2015:148).

Morçöl (2012:196-198) proposes a taxonomy of qualitative complexity research methods at three levels. Methods at the macro level focus on system dynamics and emergent patterns at the (whole) system level. Methods at the micro-macro level address interactions among system elements in order to identify the resulting patterns of systemic behaviours. Micro-scale methods are employed to study the features and behaviours of actors in a complex (social) system. Patton (2015:536) refers to case studies that are layered or nested at different hierarchical levels. According to Patton’s case study rule (Patton, 2015:536), data should be collected at the lowest unit-of-analysis level possible. This rule makes provision for the aggregation of case data collected at the micro level in order to identify emerging patterns at higher hierarchical levels.

Teisman *et al.* (2009:5) propose that complex systems “must be analyzed by studying their (self-organizing) parts as well as the emergent patterns that result from their co-evolution”. It should be noted that elements of a reductionist approach are proposed here, which creates the risk of losing relevant information when the focus is on isolated sub-systems or parts (Sahal, 1977:158; Rosen, 1991:21). The challenge posed by Teisman *et al.*, is to first study the governance system as a whole without separating it from its parts (thus a macro-level focus), and then study the relationships between the parts at a more detailed level.

Cilliers (1998:141) proposes a more sensitive connectionist approach (instead of an analytical approach) to complexity as the former “focuses on the behaviour of collections of many interconnected, similar elements that do not have (atomistic) significance by themselves, but that obtain significance through a complex set of non-linear, asymmetrical relationships in a network”. Important aspects of these networks include distributedness, self-organisation and operating on local information without central control. Cilliers continues by arguing that it is impossible to compress or simplify complex systems without losing some of their essential properties.

Northrop (2011:370-371) and Dörner (1996) refer to some common problems people have when dealing with complex systems. These include oversimplification of problems, over-generalisation, narrow extrapolations from the present, insensitivity to the dimension of time and ignoring basic premises. According to Northrop (2011:14-18), this inability to deal effectively with complexity is the result of reductionism and oversimplification – a tendency of humans to only focus within the subjective boundaries of their area of responsibility, also called ‘silo thinking’ or a ‘not in my box’ mentality.

**Table 3-4 Features of systems in the domains of order and complexity**

<b>Systems aspect:</b>	<b>Systems in the domain of order</b>	<b>Systems in the domain of complexity</b>
<b>System boundaries</b>	Closed-system boundaries.	Open system boundaries.
<b>Relevance of context</b>	Context is irrelevant and static, i.e., <i>ceteris paribus</i> .	Context is very important and fluid, everything flows.
<b>Relevance of time</b>	Time is reversible, determinism renders the future predictable.	Time flows unidirectionally to the future, path-dependence is prominent. The future is unpredictable.
<b>Predictability and certainty</b>	Deterministic certainty.	Context is VUCA (volatile, uncertain, complex, and ambiguous) and unpredictable.
<b>Nature of data</b>	Quantifiable, objective data.	Qualitative, subjective data.
<b>Nature of knowledge</b>	Knowledge is universal and applies everywhere, anytime.	Knowledge is contextual and local.
<b>Cause-effect relationships</b>	Deterministic causality applies.	Contingencies and chance events influence multiple causality.
<b>Perspectives on a situation</b>	Only one right perspective.	Multiple complementary perspectives.
<b>Ways of thinking</b>	Linear, deterministic, and analytic thinking, focusing on constituting system parts.	Ambiguous, paradoxical, non-linear thinking. Focusing on system properties emerging from interacting parts and interaction with the environment.
<b>View of the world</b>	Static view of the world, i.e., <i>ceteris paribus</i> .	Process-oriented view of the world. The system co-evolves with its context.
<b>Research implications</b>	Research is a-contextual, value-free, scientific and without self-reflection by the objective researcher.	Research is contextual, value-based, and biased. Reflective researchers employ multiple perspectives and values. They recognise system learning and adaptation.

Sources: (Dostal *et al.*, 2005:14; Morin, 2008; Najmanovich, 2010:99; Capra & Luisi, 2014:80-82)

### 3.2.10 Summary of systems theory

There are fundamental differences between the nature of simple and complicated systems in the domain of order, and the nature of complex systems (Harvey, 2009:27). It is important to identify the kind of system and system behaviours that one is dealing with before an effort is made to address them (Snowden & Boone, 2007). In terms of Ashby's law of requisite variety (Ashby, 1961:207) and the law of requisite complexity (Boisot & McKelvey, 2011:279-298), any approach to address a complex decision issue has to match the complexity of the challenge it faces. Oversimplification of complex systems and a lack of understanding of system dynamics often lead to unintended consequences (Northrop, 2011:7-12) or decision errors (Boal & Meckler, 2010).

Essential features of the paradigm of order and the paradigm of complexity are summarised in Table 3.3, above. Distinguishing features of systems in the domain of order are compared with features of systems in the domain of complexity in Table 3.4. Essential features and characteristic behaviours of different kinds of systems are summarised in Table 3.5, below. These three tables contain information that is needed to understand and frame decision issues as required by the decision framework that is developed in Chapter 7.

**Table 3-5 Classification of systems in terms of features and behaviours**

Category of system	Essential system features	Characteristic behaviours
<b>Simple, clear, known systems</b>	Closed-system boundaries; objective external observer; linear relations among system elements; stable and equilibrium system states; variables described as 'known knowns'; clear and self-evident cause-and-effect relationships; right answers do exist.	Predictable and controllable orderly behaviour; repeating patterns; consistent events; stable systems that can become chaotic when the context changes.
<b>Complicated systems</b>	Closed-system boundaries; typically found in the domain of physics; can in principle be fully understood and modelled; can be decomposed without losing information; cause-and-effect relationships are not obvious; variables described as 'known unknowns'; more than one possible solution to a problem exist; decision issues can be structured properly; limiting constraints apply; expert knowledge and systems thinking required to address complicated issues.	System behaviour may change when the context changes; behaviour is predictable in a given context with given constraints; behaviour governed by limiting constraints.
<b>Physical complex systems</b>	Open system boundaries, causal relations among interconnected system elements are non-linear, multidirectional, circular, mutual, and often distant in space and time; variables are 'unknown unknowns'; cannot be decomposed without losing information.	Behaviour is complex, fluid, turbulent and dissipative, uncertain, unpredictable, non-linear, and subject to rapid change.
<b>Biological complex systems</b>	Open to the environment, irreversible system processes, dissipative structures that exchange material, energy, and information (MEI) with their environment, focused on system goals and on survival, feedback control is used to pursue goals, social organisations consist of hierarchically structured and self-similar subsystems.	Self-organisation, emergence, adaptation, co-evolution, and bifurcation.
<b>Human complex systems</b>	Systems are creative and goal-oriented; system elements are humans with their unique ideas, feelings, ethics, morals and values and objectives that are aligned with or antagonistic to those of the organisation; individuals can affect the evolution of the organisation.	Creative adaptation and interpretation, self-organisation, emergence, co-evolution, and bifurcation.
<b>Chaotic systems</b>	High turbulence and high tension; sensitive dependence on initial conditions; no clear relationship between cause and effect; variables are unknowable; effective constraints are absent.	Unpredictable behaviours limited to attractor basins within a phase space.

Sources: (Cilliers, 1998; Snowden & Boone, 2007; Buijs, Eshuis *et al.*, 2009:51; Geyer & Rihani, 2010:18-29; Morçöl, 2012:206-209; Poli, 2013; Patton, 2015:293; Greenberg & Bertsch, 2021)

### 3.3 Theory of decision making

Decision making is a complex phenomenon. No single document, no matter how thick, can cover all aspects of decision making (Morçöl, 2007). "The literature on decision making is multidisciplinary, voluminous, and complex ... It is at different times intuitive, mathematical, philosophical, and empirical. It is rooted in economic theory, political theory, organizational theory, and social psychology. In a word, it is daunting" (Tarter & Hoy, 1998:212). Miller (2010:435) remarks that the artificial construct of decision is both controversial and contested and difficult to define.

This brief review of decision theory provides only one possible perspective on the topic of decision making, namely that of the researcher.

This section contains a review of some of the prominent theories, models, and frameworks for decision making by groups of decision makers. Earlier models describe decision making in reductionist terms as a three-phase process, consisting of an awareness phase, an analysis phase, and an implementation phase. However, a complexity perspective of decision making considers the influence of contingent factors associated with the dynamic decision context, the decision makers, and the decision-making processes employed. A contingency approach is followed below to link contextualised decision issues with appropriate decision strategies. First, the notion of a 'decision' is addressed.

### 3.3.1 The notion of a 'decision'

Although most people do have an intuitive understanding of the concept 'decision', a proper, generally accepted definition of the term has remained elusive (Franz & Kramer, 2010:518). A decision can be defined narrowly as a choice among alternatives (Poole & Van de Ven, 2010:544). It can be defined in ways that accentuate its structural and/or its process properties. There is substantial support for the process perspective of decision making as a more comprehensive approach to the phenomenon (Nutt, 2010:600). A decision can also be framed as a perspective or as an emergent phenomenon.

The Concise Oxford Dictionary (1976:265) defines the term 'decision' as settlement (of question etc.), conclusion, formal judgement; making up one's mind, and resolve. The Merriam-Webster dictionary (2021) defines a decision as the act or process of deciding, a determination arrived at after consideration, and a report of a conclusion. This definition includes reference to the process aspect of a decision. The legal definition of a decision according to Merriam-Webster is an authoritative determination (as a decree or judgment) made after consideration of facts or law.

Nutt (2010b) studied decision making in terms of a process perspective. He considered the initiative and action to pursue a decision process, the contextual environment in which decisions were made, the content or type of decision, and the decision results. Decision making could also be used as a perspective or a lens. Simon (1949; 1976) studied and applied organisational decision making as an appropriate lens to understand organisational behaviour.

### 3.3.2 Different kinds of decision issues

Classification of an issue or problem or the way in which one frames a problem, as a first process step, is of utmost importance as it has crucial implications for the policy solution and the actors responsible for creating transformation (Inayatullah, 1998:820). Decisions can be classified in terms of different dimensions, categories, or rules, depending on the perspective of the decision maker and the context. Some of these approaches are reviewed below.

Morris *et al.* (2010:288-299) classify decisions according to a two-dimensional framework. The spectrum of decisions along the cognitive dimension ranges from trivial and routine non-strategic decisions to big, strategic decisions with significant long-term organisational impacts that may affect an organisation's vision, mission, and strategies. The second dimension, called the affective dimension, spans the range of decisions from easy (meaning logically easy or non-contentious) to hard (or difficult to enact).

Snowden and Boone (2007) classify decision types according to the nature of the relationship between cause and effect. Simple (or clear), complicated, complex, chaotic, and disorderly contexts are distinguished, each relating to a different kind of decision issue. Each type of contextualised issue demands a unique approach to decision making based on the social construction of the issue by the decision maker (see the Cynefin framework below).

A distinction is made between programmed decisions and non-programmed decisions (Jones, 2013:356-357). Programmed decisions are repetitive and routine in nature. They address properly structured decision issues within a stable and predictable context. Documented rules and standard operating procedures (SOPs) define how programmed decisions are made. Non-programmed decisions are creative, novel, and unstructured decisions taken under fluid and uncertain conditions. Unlike programmed decisions, it is impossible to know in advance if these decisions are the best ones or the right ones. Decision makers rely on judgement, intuition, and creativity to address this type of decision.

A decision can be defined as the result of a decision process. This process is discussed next.

### 3.3.3 Decision making as a process

Pool and Van de Ven (2010:544) describe a variance theory and a process theory of decision making. The variance theory explains decision making in terms of relationships between independent variables and dependent variables. A process theory of change conceptualises decision making as a series of process steps that lead to some outcome.

After considering both approaches to decision-making research, as explained in Nutt and Wilson's *Handbook of Decision Making* (2010) and in the article of Van de Ven and Poole (2005), the researcher decided to adopt the process approach to decision making, realising that the variance approach to decision making does in fact complement a process approach, and vice versa. The advantage of a process approach in comparison to a variance approach is that the former provides a richer narrative in qualitative terms and a sensitivity to the dimension of time. According to Nutt (2010a:589), time is meaningless in the variance approach but central to process approaches to decision making. However, from a complexity perspective, both process and structure perspectives are important.

Decision making can be described as a temporal process of movement that spans past, present, and future. The Bradford studies of strategic decision making in the United Kingdom identified three types of decision processes (Miller, 2010:439-440). These processes are characterised by discontinuity due to impediments and delays, and dispersion based on the degree of management's involvement in decision making. *Sporadic* decision processes are longer-term, high-level, negotiated processes that are often interrupted and relatively widely dispersed. These decision issues are typically highly political and complex. *Fluid* decisions are also authorised at the highest levels, but they are formally channelled through decision-making bodies, and they tend to proceed more continuously and speedily than sporadic decision processes. These decision issues are of lesser complexity and the least political. *Constricted* decision processes fit in mid-way between fluid and sporadic processes in terms of continuity, but their dispersion is very limited, and they are "narrowly channelled within the organisation". Constricted processes require much less negotiation than the other two and are based on information that is available in-house. These decisions are made at lower levels in the organisation. These decision issues are of least complexity but more political than in the case of fluid processes.

For Keast and Towler (2009:4-6), a decision process consists of an initial recognition process when a decision issue is observed, an argumentation process to justify a subsequent decision, and a concluding process of differentiating and selecting an alternative associated with a preferred outcome within a given context. This linear definition of a decision is quiet about the implementation stage of the decision taken and possible feedback processes involved. The linear decision process proposed by Noorderhaven (1995) consists of an awareness phase, followed by an analysis phase and concludes with an action phase that includes implementation (or at least a decision to implement the decision).

The decision process includes both the task of deciding, as well as the task of doing within the administrative organisation (Simon, 1949:2). Drucker (1967) confirms this view as follows:

“Unless a decision has ‘degenerated into work’, it is not a decision; it is at best a good intention”. Therefore, implementation of the decision by capable people is a major element of the decision process. In this study, the implementation step is defined as a part of the decision process.

### 3.3.4 Factors contributing complexity to decision making

From the review of complexity theory and CAS in Section 3.2 it can be concluded that complexity is introduced into the decision-making process by several interrelated factors. Rhodes (2007), Teisman *et al.* (2009) and Rhodes *et al.* (2011) describe how the nature of decision issues, the behaviours of powerful and influential decision makers and stakeholders, the decision processes, and contextual variables contribute complexity to the decision-making eco-system. Within this complex domain the phenomena of self-organisation, emergence, evolution and co-evolution, bifurcation, path-dependency, and chaos are observed.

Nutt and Wilson’s *Handbook of Decision Making* (2010) provides a comprehensive overview of decision-making theory, but without the application of a complexity perspective. In contrast, Morçöl’s *Handbook of Decision Making* (2007) dedicates several chapters to a complexity perspective of decision making. More recent publications that address decision making from a complexity perspective are cited below.

The next section contains a review of important decision-making models. The review illustrates how the decision models evolved over time to include more and more contingent factors.

### 3.3.5 Decision-making models

Over the ages mankind has developed and employed numerous approaches, frameworks, and models to enhance the effectiveness and efficiency of their decision-making processes under different conditions. A number of these models or approaches are reviewed, and salient aspects of each model are listed. In later chapters these models are used to interpret empirical data on municipal decision making.

#### ***The classical, rational model: optimisation***

The classical and rational approach to decision making has its roots in the scientific paradigm and logical positivism (Morçöl, 2007:3). The rational model is based on several assumptions (Lindblom, 1959; Etzioni, 1967; Simon, 1976; Simon, 1997; Morçöl, 2007; Rainey, 2009). It assumes that rational decision makers have the cognitive capacity and skill, time, and other resources to collect and process all the relevant information of the contextualised decision issue to find an optimal solution. Decision makers can rank-order their preferences. Decisions are taken based on factual evidence, logical calculations, and full knowledge of means-end relationships. A decision, when implemented as planned, should realise the objectives and outcomes of the decision optimally, as intended. The model assumes that the principles of rational decision making are universal, regardless of cultural and historic contexts.

The clearly defined elements (Drucker, 1967) or sequential steps in this straightforward and systematic process of rational decision making (Tarter & Hoy, 1996:212) are the following: Identify the problem, diagnose the problem, define the alternatives, examine the consequences, make the decision, and then implement it.

The rational model of optimising is appropriate for the rare occasion when a problem is concrete and all the consequences predictable (Tarter & Hoy, 1998:223). Although the rational model is appropriate to address relatively simple problems, it is inappropriate to deal with complex problems (Lindblom, 1959; Simon, 1976; Simon, 1997; Bendor, 2015). The assumptions do not hold under conditions of uncertainty and complexity (Jones, 2013:358).

Various shortcomings, biases, and Simon's need for a model that is more useful to deal with complexity, inspired him to develop his bounded rationality model (Tversky & Kahneman, 1974; Simon, 1976; Simon, 1997; Keast & Towler, 2009:9-11).

### ***Simon's administrative model: bounded rationality***

The bounded rationality model was developed to explain administrative behaviour in a complex world, and to show how organisations can be understood in terms of their decision processes (Simon, 1976:ix). Simon challenges the presumed objective rationality of decision making as applied in classical and neoclassical economic theory (Simon, 1949:81; Simon, 1976:xxix-xxx; Simon, 1997:277). Simon (1997:291-294) argues in favour of theories of bounded rationality to interpret decision making rather than rational theories. His arguments refer to the boundaries that man's limited cognitive capabilities place on the exercise of rationality (Simon, 1976:xxvii, 79-83; Simon, 1997:279, 291-294). As a result of these human limitations, decision making is based on a satisficing strategy (Simon, 1945; Simon, 1976:xxix; Simon, 1997:295-298). A decision maker following a satisficing strategy chooses an alternative that meets or exceeds specified criteria (Simon, 1997:295). An alternative that is satisfactory or good enough (Simon, 1976:xxix) along all the dimensions of concern (Simon, 1997:286) is acceptable. Satisficing therefore demands less information and management capacity than the rational model (Jones, 2013:359).

Rational decision making is therefore only appropriate if the tasks and the operating context afford relatively stable, clear, simple conditions (Rainey, 2009:183). Lindblom (1959:81), also aware of the limitations of the rational-comprehensive method, developed an incremental model to address complex policy issues.

### ***Lindblom's model of successive limited comparisons: Muddling through***

Lindblom's (1959) decision strategy, called successive limited comparisons, addresses both complex decision situations and the limitations of the rational model. This model, also known as disjointed incrementalism, or just incrementalism (Bendor, 2015:194), assumes that decision making is a low-risk, incremental process that progresses iteratively, step-by-step. Decision makers concentrate on increments to existing circumstances, or relatively limited changes from existing conditions (Rainey, 2009:184). Means and ends are intertwined, meaning that one has to choose among values and among policies at the same time (Lindblom, 1959:82). Lindblom (1959:86) describes policymaking as a process of "successive approximation to some desired objectives in which what is desired itself continues to change under reconsideration".

The muddling through model has several advantages relative to the rational model (Lindblom, 1959). Lindblom's model emphasises the implementation step and the continual learning that takes place, rather than the preceding analytical step (Lindblom, 1959). The need for the collection and analysis of information is drastically reduced. Therefore, the process is less resource intensive. This model works best in a relatively stable and predictable environment (Jones, 2013:361). Incrementalism makes the most of available knowledge and benefits from continual learning (Lindblom, 1959:85-86). The model defines a low-risk decision process.

The model has a few limitations. Bendor (2015:195) argues that disjointed incrementalism is not an integrated decision package but a toolkit of loosely connected heuristics (Bendor, 2015:195). Another limitation is that a decision maker may overlook excellent policies that are not suggested by the evolutionary chain of policy changes leading up to the present (Lindblom, 1959:88). The myth of incrementalism does not guide behaviour towards a shared future but promotes random behaviour based on past experiences (Michael, 1977:97). A disadvantage of incrementalism is that it can lead to unduly conservative decisions (Rainey, 2009:185).



Elements of Lindblom's model, especially local search, iterative adaptation, and distributed intelligence of multiple minds, have found wide application.

### ***Etzioni's model of mixed scanning: An adaptive strategy***

Etzioni (1967) defines mixed scanning as a mode of decision making that "combines higher order, fundamental decision making with lower order, incremental decisions that work out and/or prepare for the higher order ones" (Etzioni, 1986:8). Fundamental decisions set basic directions and define the context, whereas incremental decisions facilitate either implementation of fundamental decisions, or result in fundamental decisions (Etzioni, 1967:385). The idea is that decision makers mix both perspectives but that they first consider the many major issues and alternatives to prevent the short-sightedness of incrementalism (Rainey, 2009:185).

In this definition, scanning refers to search, collection, processing, and evaluation of contextual information as well as to the drawing of conclusions, all elements in the service of decision making (Etzioni, 1986:8). A nestling relationship exists when an incremental decision requires or supports a fundamental contextual decision (Etzioni, 1986:10).

For Etzioni (1967:386), the incremental approach is directionless, drifting – action without direction and leading to nowhere. It is conservative as it only considers limited variations from past policies, and as its focus is on the short term (Etzioni, 1967:387-388).

Mixed scanning addresses the limitations of both rational and incremental decision making through two interactive mechanisms, namely high-order, fundamental policy-making processes which set basic directions, and incremental processes that prepare for fundamental decisions and work them out after they have been reached (Etzioni, 1967:388). The model balances a high-level, all-encompassing mode of scanning in search for major decision issues in terms of limited details with a highly detailed level of scanning that is focused on the relevant decision issue only. In this way, the model balances the ratio of resources spent at different levels of scanning over time (Etzioni, 1967:389) and it gives direction, guidance, and purpose to incremental decision making (Etzioni, 1967:390; Etzioni, 1986:9). The model is compatible with a progressive, innovative viewpoint shared by actors with a capacity to adapt to changing circumstances, even major ones (Etzioni, 1986:11).

The following elements of Etzioni's model apply to this study: Environmental scanning should inform high-level decision making (Masini, 1993:102; May, 1996:170; Morrison, 1996:814). A framework for decision making should include a balanced scanning function to inform and guide decision making at a strategic level and at lower levels. The importance and role of a strategic intelligence scanning function is described by Horton (1999), Voros (2003) and Bigley (2018).

### ***Janis's model of groupthink***

Janis (1971) formulated the concept of groupthink as a framework to interpret and understand the catastrophic results following decisions by groups of highly intelligent people (Janis, 1971:84-90; Janis, 1972; Janis, 1982). Janis defines groupthink as "a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action" (Janis, 1972:9). In order to maintain harmony and solidarity within a very cohesive group, members suspend their independent critical thinking. This behaviour can cause them to make inferior decisions (Janis, 1991:235-246).

Symptoms of groupthink relate to members' overconfidence in the group's prowess, their close-mindedness, and tunnel-vision observations of the decision issue, as well as strong pressures upon members to conform to group norms and the leader's expectations. Conditions

that may contribute to groupthink, referred to as antecedent conditions, are structural defects of the organisation, and a provocative situational context (Janis, 1991:241). Various biases, poor information searches, insufficient evaluation of alternatives, poor risk analysis, and a lack of contingency planning, contribute to groupthink (Janis, 1991:241). Groupthink contributes to a low probability of successful outcomes in complex decision contexts. Recommendations to prevent groupthink focus on reflective thinking, leadership practices, dialogue, investigation of alternative approaches, risk analysis, consultation with external experts, and group diversity (Janis, 1971:89).

Aldag and Fuller (1993:543), and Tasa and Whyte (2005:120) propose more advanced models for group decision making that address the weaknesses of Janis's model. Janis's inductively derived groupthink theory had relevance and implications for this study (Janis, 1971; Janis, 1991; Aldag & Fuller, 1993). These implications informed the decision framework that was developed in Chapter 7.

### ***Cohen's garbage can model***

The garbage can model simulates decision making in organised anarchies under conditions where rational decision making is inappropriate and impossible (Cohen *et al.*, 1972). This model applies under the following conditions: First, there is no coherent and consistent set of objectives and shared goals but rather a variety of inconsistent and ill-defined preferences (Cohen *et al.*, 1972:1). Second, technology is unclear. Members of the organisation do not understand internal processes. Learning takes place through trial-and-error procedures, through accidents, and through pragmatic inventions of necessity. Cause-and-effect relationships are unclear amidst much random activity (Tarter & Hoy, 1998:217). Third, participation of decision makers and stakeholders is inconsistent and variable.

Cohen *et al.* (1972) define a garbage can as a choice opportunity. They define an organisation as "a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision makers looking for work" (Cohen *et al.*, 1972:2). Choice opportunities are like garbage cans in which problems, solutions, and participants come together in a jumbled fashion (Rainey, 2009:141). A decision is an outcome of the complex, fortuitous and random interaction of a stream of problems, a stream of solutions, a stream of participants, and a stream of choice opportunities (Cohen *et al.*, 1972:3).

The garbage can model provides a theory for interpreting and understanding the nature of the organisational contexts in which this kind of decision making flourishes (Cohen *et al.*, 1972:16-17). However, it does not provide a strategy for action (Tarter & Hoy, 1998:217). Due to the nature of the decision process, there is no continuity in decision making, and probably also not much learning involved (Cohen *et al.*, 1972:3). As a result, decision making becomes fluid, unpredictable, and even contradictory (Jones, 2013:363).

### ***A political model of decision making***

Literature about organisational power and politics forms an integral part of the study of organisational decision-making (Aldag & Fuller, 1993:542; Morgan, 2006:162-163; Rainey, 2009:172-173; DuBrin, 2016). Conflict, power, and politics affect decision-making in very important ways. "To understand them, one needs to understand organizational politics, just as to understand governments, one needs to understand governmental politics" (Pfeffer, 1992:29). Morgan (2006:149-150) analyses organisational politics in terms of the relationships between interests, conflict, and power. Organisational actors use politics and coalitions to acquire power that may enhance their chances to advance their own interests (DuBrin, 2016:223). Conflict arises whenever interests collide (Morgan, 2006:162-163).

**Interests:** Morgan (2006:157) refers to the notion of interests as “predispositions embracing goals, values, desires, expectations, and other orientations and inclinations” that lead a person to act in a preferred way. Interest groups that pursue opposing interests often get into conflict.

**Conflict:** Organisational conflict is an ever-present potentiality (Clardy, 2018:11) as organisational actors (e.g., different departments and functional units in an organisation) compete for limited resources, status, and career advancement (Morgan, 2006:163, 165). Although there is no agreed-upon definition of conflict (Samantara & Sharma, 2016:159), it can be defined as the clash that occurs when the goal-directed behaviour of one group blocks or thwarts the goals of another (Jones, 2013:413).

Pondy (1967:299-306) describes conflict as a dynamic process consisting of five sequential stages or episodes. Conflict that is managed constructively can stimulate productivity, stability, and adaptability (Pondy, 1967:308). However, conflict that is not managed properly can harm and impede the performance of an organisation (Jones, 2013:414; Clardy, 2018:10).

**Power:** “Power is the medium through which conflicts of interest are ultimately resolved. Power influences who gets what, when, and how” (Morgan, 2006:166). Rainey (2009:179) states that decision-making issues are closely related to power issues, because power determines who makes the decision. DuBrin (2016:211) refers to the concept of power as the potential or ability to influence decisions and control resources. He describes seven types of power and some of their subtypes. Pfeffer (1992:45) defines power as the potential ability to influence people’s behaviour, to change the course of events, and to overcome resistance. Power is used to get people to do things that they would not otherwise do. The topic of power is discussed in depth in the literature (Morgan, 2006:167; Landells & Albrecht, 2013:360; DuBrin, 2016; French & Raven, 1959).

**Organisational politics:** Organisational politics and influence are the processes, the actions, the behaviours (Pfeffer, 1992:45) through which power is applied to implement decisions within interdependent systems. Power and politics are the means to ends to realise organisational goals and to resolve conflicts. Often rules, regulations, and structural changes of the organisation are used as instruments of power in the hands of political actors (Morgan, 2006:172-173). Morgan (2006:163-166), Jones (2013:429-431) and DuBrin (2016:223-236) discuss factors that contribute to organisational politics.

Pfeffer (1992:45-47) offers a useful model for understanding organisational politics. The model considers the political landscape, important political clusters of interests, the underlying perspectives and paradigms of the different interest groups, power relations, and strategies and tactics to develop a power base in the organisation. Organizational politics is an integral part of decision making in an organization and needs to be managed well to benefit an organisation (Jones, 2013:431). The quality of decision making tends to be better when there is a good balance of power, and when alternative points of view and constructive debate are entertained. Unethical political behaviour can harm the organisation (DuBrin, 2016:241). Organisational politics is mind-boggling and has a direct influence on the decision-making processes of an organisation (Morgan, 2006:165).

### ***Checkland’s ‘soft’ systems model: A systems approach to decision making***

Checkland (1981:162-164, 253) demonstrates that within the domain of human activity systems, systems thinking is more appropriate to address the kind of complexity which defeats the reductionism of the classic scientific method (Checkland, 1981:245). Checkland’s “soft” systems-thinking methodology addresses unstructured and ill-defined complex problems of human activity systems in the real world. The methodology is based on systems thinking, and employs the essential features of systems (Checkland, 1981; Capra & Luisi, 2014) in trying to understand complex human social systems in terms of different perspectives or *Weltanschauungen*. The methodology describes an iterative action-learning process that

informs decision making. It values the multiplicity of perspectives, dialogue, and debate to inform decision making. Its output is “learning which leads to a decision to take certain actions, knowing that this will lead not to ‘the problem’ being now ‘solved’ but to a changed situation and new learning” (Checkland, 1981:17).

### ***Naturalistic decision making***

Naturalistic decision making (NDM) addresses the need for theory that can explain decision making under time pressure and uncertainty (Klein, 2015b:383). The approach rejects classic decision theory, and theory based on controlled laboratory settings (Gore *et al.*, 2006:926). It focuses on the way decisions are made by practitioners in a variety of real-world settings that are fast-paced, complex, and often dangerous and where there is no time for optimisation or elaborate calculations (Lipshitz *et al.*, 2006:917-918). NDM research seeks to understand how experience and expertise can detect important cues that can inform powerful heuristics as decision aids under stressed conditions (Gore *et al.*, 2006:927; Klein *et al.*, 1993).

The naturalistic approach to decision making addresses the features of the contextualised task at hand in naturalistic settings, and the decision maker’s knowledge and experience relevant to that task (Orasanu & Connolly, 1993:7). NDM adopts a very practical approach to decision making in organisational settings. Orasanu *et al.* (1993:7-10) and Klein *et al.* (1993) identified the conditions under which NDM would be an appropriate decision strategy. NDM is typically applied during crisis situations, catastrophic events, and in processes where the stakes are high (Shattuck & Miller, 2006; Klein, 2015b:382).

NDM appears to be a suitable process to apply to decision situations associated with the complex region and the chaotic region in the Cynefin framework (Snowden & Boone, 2007). Kurtz and Snowden (2003:469-470) only provide vague prescriptions of the way a chaotic and disorderly situation has to be managed within the Cynefin framework. The eight characteristics of naturalistic decision contexts proposed by Orasanu and Connelly (1993:7-10) can be used for sense-making and to categorise a decision issue within the Cynefin framework.

### ***Intuitive decision making***

Intuition is a highly complex and highly developed form of reasoning, based on years of experience and learning, and on facts, patterns, procedures, concepts and abstractions stored in a person’s head (Matzler *et al.*, 2007:14). These authors define intuitive decision making as the capacity of an individual to quickly size up situations, and to make decisions on complex issues based on the ability to recognise patterns, gained through experience. Intuitive decisions are almost as good as the choices obtained through laborious analysis (Klein, 2015a:164). Klein argues that intuition is based on the ability to retrieve and to match patterns, built up from direct experiences, rather than the application of heuristics.

Tversky and Kahneman (1974) focus on heuristics and biases that lead to predictable human errors and decision traps that have to be avoided (Hammond *et al.*, 2006). In contrast, NDM aims to strengthen and harness the power of intuition and heuristics, built upon experience and expertise, to enhance decision-making capacity (Klein, 2015a). There is some similarity between intuition and “system 1 thinking” (Klein, 2015a:165). Kahneman (2011) describes system 1 thinking as a fictitious cognitive system that allows us to make decisions quickly, automatically, instinctively, reflexively, and effortlessly. It is emotional. It allows us to interpret a situation instantly based on information immediately available, and to act quickly. “System 2”, the conscious self, is linked to system 1. System 2 is slower, more deliberative, more analytical, more rational, and more logical. System 2 monitors and moderates system 1 activity (Kahneman, 2011).

### ***Metaphors as models of decision making***

Abstract models are often used to draw out key characteristics of concern pertaining to a specific decision situation (Keast & Towler, 2009:14). Morgan (2006) uses eight complementary metaphors, perspective lenses, or images of the organisation to investigate the nature of decision contexts. Essential features of an organisation, perceived as a machine, an organism, a brain, a culture, a political system, a system of flux and transformation, an instrument of domination, and a psychic prison, are used to diagnose a situation. Morgan's machine metaphor applies to simple and complicated matters within the domain of order, whereas the other metaphors refer to complex situations. Each perspective is associated with one or more theories that can be used to interpret and to make sense of a situation.

### ***Process models of decision making***

A process theory of decision making explains qualitatively how a sequence of events leads to an outcome (Poole & Van de Ven, 2010:544-557). Process models depict decision making as a simple, temporal process consisting of interconnected process steps. Some models consist of unidirectional linear process steps while others contain feedback loops.

Decision making can be defined as a process consisting of a sequence of activities where each activity relates to a different phase in the decision process (Drucker, 1967; Noorderhaven, 1995:18-38; Poole & Van de Ven, 2010:544-557). The different phases or process steps can be clustered together in an awareness phase, during which issues and problems are identified; an analysis phase, for the generation of alternative solutions; and an action phase, during which choices are made and implementation initiated (Noorderhaven, 1995:18).

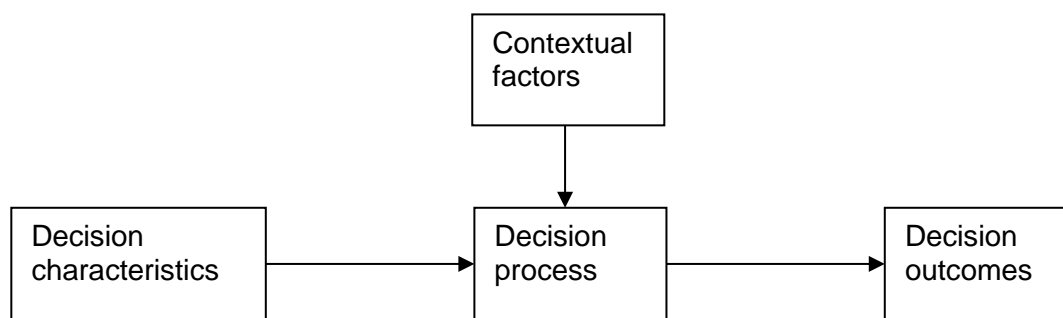
Reductionist approaches to study decision making often focus either on its process aspects or on its structural aspects (Nutt, 2010a:588). Nutt and Wilson (2010:646) criticize research efforts relating to decision making as follows: Traditional research efforts treat decision making as a structure or as a process, but seldom as both. These authors also find "a reluctance [among researchers] to deal with process" and note that "much of the research ... deals with generalizations about process (its political nature or its rationality), but not action steps". This critique is aimed at a reductionist approach to decision making among researchers which contrasts with a complexity approach to decision making as pursued in this study.

Nutt (2010a:586-589) argues for the "simultaneous viewing [of process and structure] because there is *structure in process* and *process in structure*". Here Nutt considers the co-existence of process and structure but remains silent about the other five Biomatrix systems aspects that co-define complex systems and phenomena (Dostal *et al.*, 2005).

Foresight models of decision making are based on time-series methods and explanatory methods to explore and anticipate possible future scenarios (Keast & Towler, 2009:15). These models are informed by a future consciousness (Lombardo, 2006) and an anticipatory capacity (Rosen, 1991; Poli, 2019). Both time-series methods and explanatory methods are used in the foresight process (Horton, 1999; Voros, 2003). The foresight process consists of three consecutive phases. Phase one consists of the collection, collation, and summarisation of relevant information and produces foresight knowledge. During phase two, decision makers interpret the foresight knowledge, they develop a proper understanding about the issues to be decided upon, and then they decide on actions for implementation. Phase three comprises the communication of the outcomes of phase two to a wider audience in order to build commitment to the implementation of decisions. The value of the foresight process is realised through purposeful action and applied wisdom.

The contingency model of decision making in Figure 3.2, developed by Franz and Kramer (2010:536) suggests the following relationships: The features of the contextualised decision issue should predict the appropriate decision process to be used. Proper pairing of the type of

decision issue at hand with the correct decision process normally leads to favourable decision outcomes. Contextual and environmental factors, such as personal or organisational factors, may affect the decision process, and hence also affect the decision outcomes. The basic logic of this model is captured in the Cynefin framework discussed in Section 3.3.6.



**Figure 3-2 Model of decision making (Franz & Kramer, 2010:536)**

### 3.3.6 Frameworks for decision making

Several frameworks that are used as decision-support instruments are discussed in this section. These frameworks are used to make sense of contextualised decision issues before an appropriate strategy is selected to address the issues. The way a contextualised decision issue or situation is framed has implications for the way the corresponding decision-making process is structured and managed. Any attempt to address a complex challenge or wicked problem should match its complexity (Rittel & Webber, 1973; Grint, 2005; Snowden & Boone, 2007; Geyer & Rihani, 2010). In terms of Ashby's law of requisite variety, adjusted for complexity, (Boisot & McKelvey, 2011:279), the complexity of the decision-making approach has to match the complexity of the decision situation in order to be effective.

A framework for decision making should capture the posited relationship between the decision process, the context within which the decision is made (e.g., importance and urgency), the content of the decision, and the costs and benefits of the decision outcomes (Nutt, 2010b:456). The frameworks reviewed in this section are based on the following two core principles:

- A decision issue embedded within its context must be framed accurately as simple, complicated, complex, or chaotic before action is taken to address it.
- The decision strategy selected and applied to address a framed decision issue must be adequate for the purpose.

These two principles are captured in Ashby's law of requisite variety (Ashby, 1961) and the derived law of requisite complexity (Boisot & McKelvey, 2011:279), the Cynefin framework (Snowden & Boone, 2007; Greenberg & Bertsch, 2021), and the frameworks proposed by Stacey (1996; 2011), Grint (2005) and Geyer and Rihani (2010:65-68).

The ability to differentiate between system types is co-defined by the paradigm according to which the contextualised system is evaluated and perceived (Rihani, 2002:233). Unfortunately, the distinction among these different kinds of system phenomena is not very sharp or definitive as much of the distinction depends on the perspective of the observer and the depth of the understanding required. Morçöl (2012:34-40) confirms that these distinctions are not obvious or clear-cut when he critiques the definition of simple, complicated, and complex systems formulated by Cilliers (1998).

Two-dimensional decision frameworks typically reflect the nature of the issue in focus as one dimension while the other dimension refers to appropriate approaches to address the issue. Thompson (1967) suggested a two-dimensional contingency framework to plot contextualised decision issues. One dimension indicates the level of agreement between decision makers on the goals to be achieved. The other dimension indicates the degree to which decision makers understand cause-effect relationships, namely, the level of sophistication of their technical knowledge and problem-solving skills to solve problems and to realise goals.

### ***Ashby's law of requisite variety***

Any approach to decision making and problem-solving has to be adequate to deal with the nature of the problematic situation. A more formal formulation of Ashby's law states that efficacious adaptation of systems occurs only when the variety of internal system responses matches the variety of stimuli from the environment (Ashby, 1961). Thus, an increase in the complexity of a situation, measured in terms of a variety of stimuli, should be matched by a corresponding increase in the variety of system responses. In terms of Ashby's law, the reductionist Newtonian paradigm is appropriate to address simple systems or decision issues but inadequate to deal with the complexity of real-world open systems.

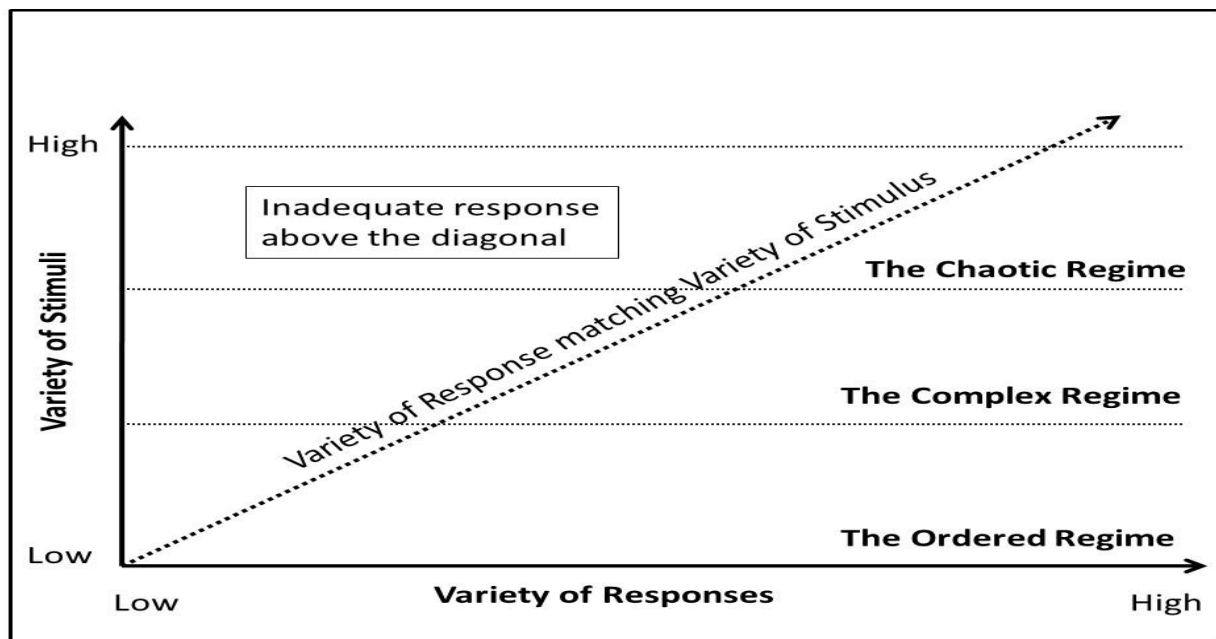
The law of requisite complexity, formulated by Boisot and McKelvey (2011:279-298), states that, to be efficaciously adaptive, the internal complexity of a system must match the external complexity it confronts. The variety of stimuli from the external environment (along the vertical axis) has to be matched by the variety of responses of a system (along the horizontal axis) for it to be efficaciously adaptive. A graphical representation of complexity in terms of the Ashby space distinguishes three ontological regimes along the vertical axis: the ordered regime, the complex regime, and the chaotic regime (see Figure 3.3).

The ordered regime is experienced as unproblematic, their outcomes are predictable and linear, and decision makers know how to deal with them effectively. The Newtonian paradigm applies to this domain.

The complex regime is home to a blend of stimuli that can initiate both predictable and unpredictable outcomes. In this regime an adaptive response rather than a reductionist approach, which typically leads to oversimplification, is appropriate.

The chaotic regime is characterised by stimuli that are experienced as chaotic. It is impossible to make sense of these stimuli and it is impossible to either anticipate or predict the system responses to these stimuli. Decision makers should either "wait for nature to show its hand" or should proceed by trial and error with careful use of resources. In this regime naturalistic decision making and intuitive decision making is appropriate (Klein *et al.*, 1993; Orasanu & Connolly, 1993; Gore *et al.*, 2006; Matzler *et al.*, 2007; Klein, 2015a; 2015b).

The risk associated with an oversimplified interpretation of stimuli from the environment is that systems either maladapt or fossilize (Boisot & McKelvey, 2011:289). In contrast, if a stimulus from the ordered regime is perceived and treated as a complex stimulus then resources are wasted unnecessarily. Kauffman (1993:644) warns that beyond a certain level of complexity the adaptive capacity of a population or system may not be sufficient to cope.



**Figure 3-3 The law of requisite complexity (Boisot & McKelvey, 2011:290)**

### ***The Cynefin framework for decision making***

Cynefin is basically a decision support framework. It is a practical aid to diagnose a contextualised decision issue accurately before action is taken to address it (Snowden & Boone, 2007; Snowden, 2021:61). Cynefin is a dynamic decision framework. The system states in Cynefin are dynamic and things move between them. The liminal zones between the domains are transformational (Greenberg & Bertsch, 2021:75) because “things transition between domains” (Snowden, 2021:59).

Cynefin typology describes three primary types of system domains: ordered, complex and chaotic. The domain of order is divided into two sub-domains, the domain of simple or clear systems and the domain of complicated systems. A fifth domain, the confused domain, represents the state of not knowing which domain you are in. Decision issues can evolve from one domain to another through transformations at the liminal zones.

The Cynefin framework consists of a sense-making phase followed by a decision phase. The value of this framework is that it matches decision strategies with the nature of the contextualised decision issue in terms of the law of requisite complexity (Boisot and McKelvey, 2011). The Cynefin framework links the paradigm of order and the paradigm of complexity with the theory of decision making and provides a very useful resource for sense-making during the decision-making process (Greenberg & Bertsch, 2021).

The Cynefin framework (see Figure 3.4) is used here for two purposes. First, it is used to frame decision issues within their contexts as simple or complicated (in the domain of order), and as complex or chaotic. It should be kept in mind that these contexts are defined in terms of their “cores” and not by their “boundaries ... because boundaries are always blurred, are always interfering” (Morin, 2008:48). Second, it recommends appropriate ways to manage each category of decision situation based on such framing (Kurtz & Snowden, 2003; Snowden & Boone, 2007). System dynamics can transform system behaviour from any one domain to any other domain. The effectiveness of decision makers then depends on their capacity to tailor their approach to fit the complexity of the situation confronting them.



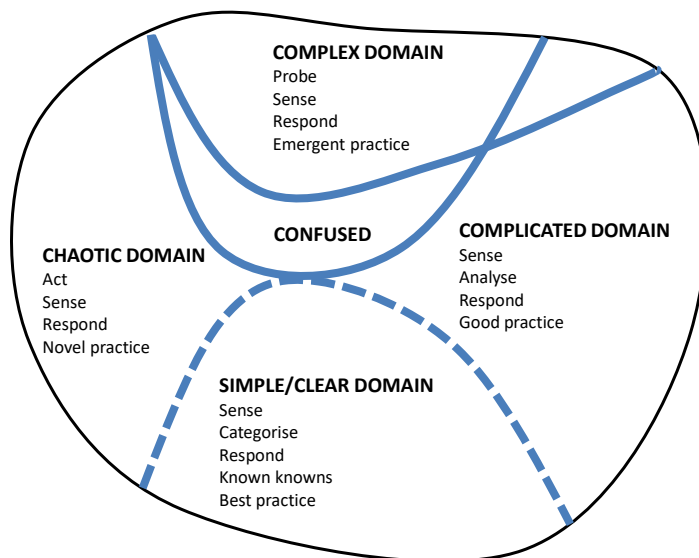
In a simple context, a decision maker has a detailed understanding of cause-and-effect relationships between variables that are characterised as “known knowns”. Best practices are used to “sense, categorise and respond” to problems.

Complicated contexts demand the involvement of experts to find cause-and-effect relationships between “known unknowns”. Experts use fact-based management to “sense, analyse and respond” to problematic issues.

The fluid and unpredictable domain of complexity, which is the focus of this study, is characterised by emergent patterns co-produced by “unknown unknowns”. Creative and innovative experimentation within a supportive environment is employed to “probe, to sense, and to respond” to emergent patterns. “Conscious complex systems respond better to light-touch styles of management based on constant monitoring of overall patterns of performance coupled with judicious small-scale incremental adjustments” (Geyer & Rihani, 2010:51). The zone of creative complexity, nested between the domains of stifling order and destructive disorder, is generally perceived as being the most productive for human activity systems (Geyer & Rihani, 2010:56).

In a turbulent and chaotic situation, no clear cause-and-effect relationships or patterns exist, and system variables are unknowable. Decision makers should act immediately to re-establish order and to communicate clearly in a command-and-control fashion.

The characteristics and behaviours of the various types of systems identified by the Cynefin framework are defined in Section 3.2 and are summarised in tables 3.4 and 3.5, above.



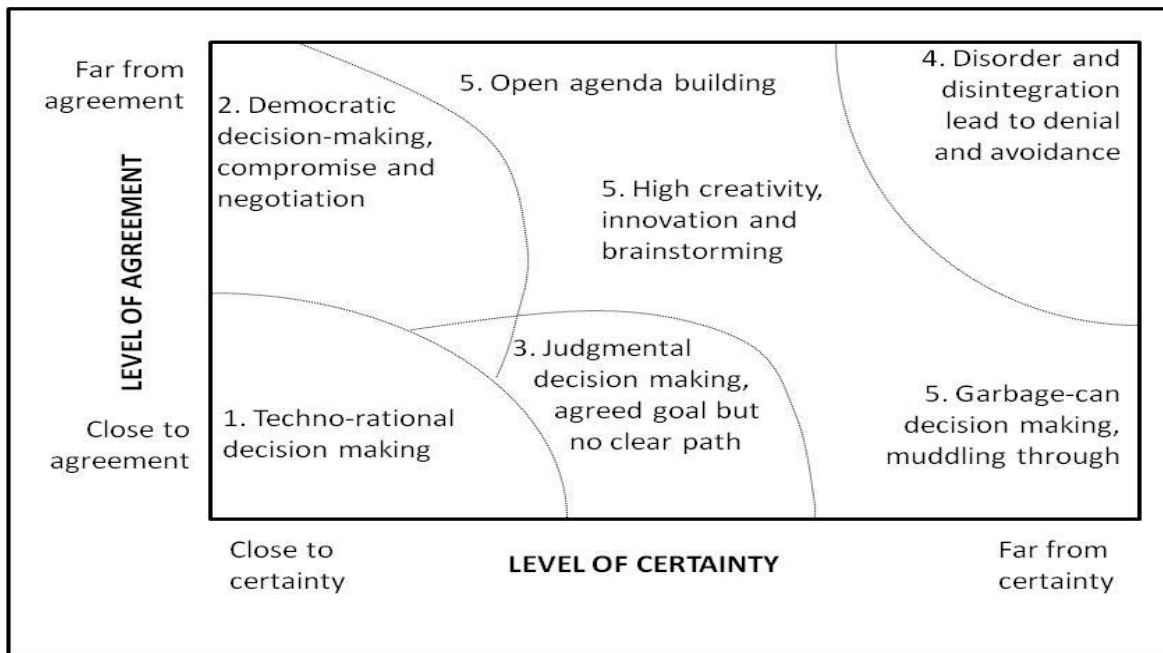
**Figure 3-4 Cynefin framework for decision making (Snowden, 2021:58)**

***The Stacey diagram for decision making***

The Stacey diagram provides another useful framework for decision making (Stacey, 1996; 2011; Geyer & Rihani, 2010). The horizontal dimension, the certainty axis, provides an indication of the certainty about expected outcomes of a decision. The vertical axis, the

agreement axis, provides a measure of the agreement among actors about appropriate actions or decisions to be taken to address the issue to be decided on (see Figure 3.5).

The Stacey diagram depicts the diverse types of decision issues that exist, and it proposes strategies to deal with each type of issue in terms of Ashby's law of requisite variety (adjusted for complexity). Rational decision making is appropriate to address simple systems, namely, when decision makers are certain about decision outcomes, and close to agreement on appropriate actions to be taken. The domain of complex decision issues is observed when decision makers are far from certainty about decision outcomes and far from agreement on appropriate action to be taken. The domain of complex decision issues is located between the domains of complicated matters and chaotic matters.



**Figure 3-5 The Stacey diagram (Stacey, 1996; 2011)**

Geyer and Rihani (2010:64-68) provide a comprehensive overview of the application of the Stacey diagram. They refer to the different zones on the diagram (see Figure 3.5) as follows: Zone 1 is the zone of order, simple systems, and the technical expert. Zone 2 is the zone of 'political' decisions and negotiation about complicated matters. Zone 3 is the zone of judgemental decisions about complicated matters. Zone 4 is the zone of disorder and anarchy. Zone 5 is the zone of complexity and learning.

### ***Grint's framework for decision making***

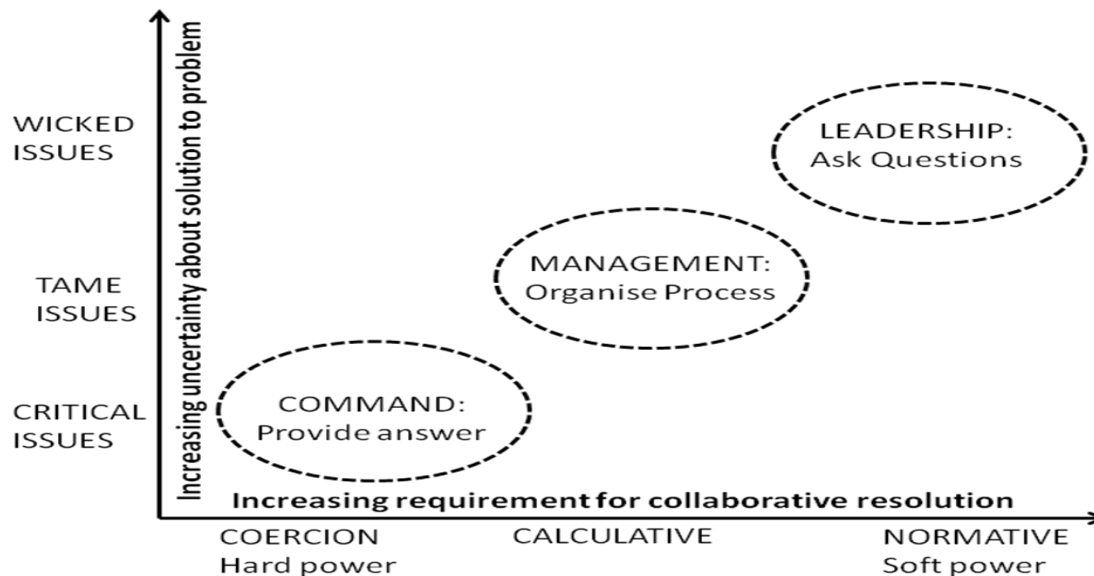
Grint proposes a decision framework that "depends upon a persuasive rendition of the context and a persuasive display of the appropriate authority style" (Grint, 2005:1477). Grint's decision framework is depicted according to two dimensions (see Figure 3.6). One dimension refers to the increasing requirement for collaborative resolution, and the other to increasing uncertainty about solution to the problem (Grint, 2005:1467-1494).

Grint suggests that a persuasive and correct interpretation of the problematic situation within its context should define the type of decision to be made and the appropriate form of authority to deal with it. In a critical situation (as in a crisis), the decision maker (as commander) should use coercion and a hard-powered commanding style of decision making.

In a tame and orderly situation, the decision maker (as manager) should employ good management principles to organise appropriate processes to address the decision issue.

In the case of wicked challenges and issues, the decision maker (as leader) should ask the right questions to facilitate an adaptive approach to address the situation.

Decision strategies have to match the degree of complexity of each zone. When the same system unexpectedly changes its mode of behaviour, decision strategies have to be adjusted.



**Figure 3-6 Grint's framework for decision making (Grint, 2005)**

### ***Decision frameworks and transformation of system states***

Various mechanisms can trigger an unexpected transformation of the behaviour of a system or a decision issue. The implication is that decision issues have to be reframed and decision strategies have to be adjusted. Frameworks for decision making must be able to accommodate such unexpected changes in system behaviour. Decision makers have to be aware of these realities, and their critical implications, for decision making (Poli, 2013). Cynefin provides a dynamic framework that captures system dynamics and transformation of system states in the "liminal" area (Kurtz & Snowden, 2003; Snowden, 2021:59).

A change in system parameters can transform "simple systems" into systems with complex or even chaotic behaviour, and complex systems may suddenly exhibit spontaneous orderly behaviour (Kauffman, 1993:174, 235; Capra, 2010:12). Complex systems, poised between the regimes of stable and chaotic behaviour, have a threshold sensitivity to disturbances that may cause them to adopt either chaotic or orderly behaviour. This threshold may range from an extreme sensitivity to small disturbances to a low sensitivity to large disturbances (Richardson *et al.*, 2007:26). Van Gils *et al.* (2009:93-96) illustrate how intended and unintended change events, that originate in social, physical, and natural environments may have determining impacts upon decision processes.

Systems, or framed decision issues, may undergo transformations at bifurcation points due to catastrophic events or "black swan" events (Nicolis & Prigogine, 1977:70, 74, 488; Taleb, 2008). A key result of elementary catastrophe theory is that "as a rule, the stability of a system breaks down only according to certain relatively simple patterns that can be described

explicitly” (Majthay, 1985:ix). A stable or “well-determined system may respond to very regular stimuli in a totally chaotic manner” (Majthay, 1985:ix). However, the system states before and after the turbulent transition may be very stable.

The property of emergence co-produces non-linear behaviour of complex systems (Rihani, 2002:90). The properties of non-linearity and emergence contribute directly to the inherent indeterminacy of complex systems.

### **3.3.7 Approaches to deal with different kinds of framed decision issues**

Rihani (2002:105) urges that one should determine first the nature of the system in question before an attempt is made to address its problems and challenges. Features of the domain of order and the domain of complexity that can be used to determine the nature of a system are described in Table 3.4, above, and the nature of different kinds of framed decision issues are summarised in Table 3.5, above.

Approaches recommended for addressing each category of framed decision issue are discussed next. Inappropriate approaches to address decision issues may result in several possible decision error types (Boal & Meckler, 2010:327).

#### **3.3.7.1 Dealing with decision issues framed as simple**

The features of decision issues framed as simple or clear or obvious (Greenberg & Bertsch, 2021) or trivial, routine, repetitive and programmed (Morris *et al.*, 2010; Jones, 2013), are summarised in Table 3.5, above. A reductionist and scientific approach can be applied effectively to address these structured issues. Snowden and Boone (2007) recommend a “sense-categorise-respond” strategy to address variables in this category of “known-knowns”. Geyer and Rihani (2010) advise that a techno-rational decision-making approach is appropriate in this domain. Public employees often engage in routine decision making that can be standardised and rationalised (Rainey, 2009:179).

#### **3.3.7.2 Dealing with decision issues framed as complicated**

Complicated decision issues can be framed and structured properly within the domain of order (Greenberg & Bertsch, 2021). Snowden *et al.* (2007) recommend a “sense-analyse-respond” strategy to be performed by technical experts. Grint (2005) recommends the application of a combination of hard and soft power to organise a process to develop a solution to a tame or complicated problem within the domain of order. Geyer and Rihani (2010), conversely, propose a democratic decision process of compromise and negotiation, or a judgemental decision-making approach to address complicated matters, depending on the specific context.

Ibarra and Hansen (2011:69-74) propose decision making based on consensus when experts are dealing with complicated issues, and command-and-control approaches when simple issues or crises are dealt with. According to Van Loon and Van Dijk (2015:67-68), discussion and debate will suffice to address tame problems whereas instruction and coercive power are called for when dealing with crises and when a quick response is required.

Both simple and complicated decision issues are tame and properly structured within the domain of order. Decision issues within the complex domain are unstructured. Therefore, fundamentally different strategies are employed to address them.

#### **3.3.7.3 Dealing with decision issues framed as complex**

The openness, non-linearity, emergent and adaptive properties of human activity systems contribute to the unpredictability of these systems. In addition, each complex system is unique and has its own emergent properties and unpredictability (Geyer & Rihani, 2010:50-51). Under

conditions of complexity, rigid plans and policies are inappropriate. Thus, Rihani (2002:235) argues that “the only evolutionarily stable strategy (ESS) open ... is to exercise flexibility and pragmatism in order to survive, learn and adapt over and over again in accordance with its ever-changing fitness landscape.”

Complex decision issues are unstructured and adaptive. In such cases, it is either impossible or difficult to find any solutions. Therefore, a satisficing decision strategy, namely, an approach that satisfies several constraints, may be appropriate, affordable, and executable (Simon, 1997:295). A satisficing course of action may involve an iterative search process to balance the level of constraints (or aspirations) with the effort and cost of a search for acceptable outcomes (Simon, 1997:296).

Nutt and Wilson (2010:660-667) recommend an action theory of decision making for complex issues. They describe two complementary kinds of studies: emergent and prescriptive. Each approach aims to develop an action theory for decision making by “seeking empirically grounded propositions in which action steps are identified that increase the prospect of success” (Nutt & Wilson, 2010:660). Action-taking steps are defined as a process. The intent is to identify actions that make up best practice through a descriptive approach and a prescriptive approach, respectively.

Decision makers dealing with complex systems should realise the following (Fernández *et al.*, 2010:178): It is impossible to forecast the future behaviour and evolution of a complex system with certainty. Knowledge of the history and past evolution of a complex system informs a proper understanding of it – even though such understanding is limited. Elements of social complex systems are usually complex themselves, and these elements are connected to other complex systems.

Command-and-control management processes based on linear thinking are useless when applied to CASs (Rihani, 2002:93), because they are of a different kind (Poli, 2013). The Cynefin framework proposes an iterative “probe-sense-respond” approach to address complex and adaptive decision issues in order to be sensitive to emerging patterns of behaviour. In the complex domain, the leader will employ a normative, inclusive, and consultative approach, use soft power and ask appropriate questions to deal with wicked and complex problems (Grint, 2005). Rihani further notes that CASs “respond better to light-touch styles of management based on constant monitoring of overall patterns of performance coupled with judicious small-scale incremental adjustments” (Rihani, 2002:93).

Ibarra and Hansen (2011:70) emphasise the importance of collaboration to address complex issues and wicked problems. Van Loon and Van Dijk (2015:62-75) introduce the concept of dialogue to deal with the “*problématique*” of complex contexts. Decision making based on dialogue emphasises the relational and contextual aspects of decision making and leadership. It refers to internal dialogue and reflection (aimed at reconciling different “I-positions” within the self) and external dialogue (between self and others). Dialogical leadership and decision making are effective in an environment where judgement is suspended and where new perspectives, narratives and meanings are nourished and shared.

Van Loon and Van Dijk (2015:62) argue convincingly that reflective and dialogical decision making, and not a single-focus approach, is required to deal effectively with wicked issues within a complex context. From the processes of dialogue and reflection, new insights, narratives, meanings and understanding emerge once participants in the decision-making process perceive the same wicked problem from different perspectives.

Arena and Uhl-Bien (2016) introduced the concept of an adaptive space to address complex and adaptive challenges within a complexity leadership context. Innovative and new solutions emerge from the adaptive space and are applied to address complex decision issues.

### 3.3.7.4 Dealing with decision issues framed as chaotic

Issues framed as tame, or complex, can transform very quickly into a chaotic state. Snowden *et al.* (2007) recommend an “act-sense-respond” approach to address chaotic situations. First, quick action is required to restore some order and to stabilise a bad situation. As soon as possible thereafter, while still in the confused domain, one should seek to make sense of the situation with the help of experts, either in the complicated domain, or within the complex domain (Wong & Cheveldave, 2021:367). Appropriate responses may then initiate a change in system behaviour towards the complicated or complex domain, and even the clear, simple domain.

The NDM model and the intuitive decision-making model can be applied during chaotic circumstances (Klein *et al.*, 1993; Orasanu & Connelly, 1993; Gore *et al.*, 2006; Shattuck & Miller, 2006; Matzler *et al.*, 2007; Kahneman, 2011; Klein, 2015b;).

Several possible decision errors have been identified. These errors can be avoided if the decision maker is aware of them and knows how to apply the theory and frameworks reviewed above.

### 3.3.8 Common errors in decision-making processes

Several significant errors in decision-making processes are listed (but not discussed) below. Hester and Adams (2014:10), and Boal and Meckler (2010:327-348) review seven different categories of typical errors related to inappropriate problem diagnostics. Categories of errors associated with systemic problem-(dis)solving are the following types: type I and type II errors (correlation errors), type III errors (solving the wrong problem very precisely); type IV errors (inappropriate action taken after an accurate problem analysis); type V errors (inaction when action is required); type VI errors (causation inferred when only correlation exists, i.e., unsubstantiated inference), and type VII errors (a system of errors resulting from a combination of the other error types). A number of these error types can be avoided when a problem or issue is framed accurately within an appropriate context.

Several other decision errors are noted:

- By “discounting the future”, decision makers reduce the significance of future challenges. It is like “look[ing] at the future as if through the wrong end of a telescope” (Linstone, 1977:5).
- A short-term focus may limit the options of future generations to address adaptive challenges.
- A reductionist approach to address complex problems often takes the form of analysing and subsequently optimising each isolated subsystem (Linstone, 1977:8). This may lead to sub-optimisation of the larger system.
- Only one perspective or *Weltanschauung* is considered when complex issues are addressed (Churchman, 1977:90; Checkland, 1981:18), instead of various diverse perspectives (Allison, 1971; Linstone, 1977:8).
- Decision issues are structured and defined wrongly (Simmonds, 1977:13). This results in inappropriate and inadequate approaches to decision-making (Snowden & Boone, 2007). Another consequence is that an “error of the third kind” is committed when the wrong problem is addressed (Mitroff, 1977:45).
- Decision issues are often addressed as closed systems without any consideration of the context within which they exist.

### 3.3.9 Gaps in decision-making literature

A few gaps in existing literature on decision making in general and decision making in a municipal context have been observed. This study addresses the following concern: “Process is a missing ingredient in the construction of decision-making theory. Excluding process has left this theory incomplete” (Nutt, 2010a:610). Process aspects are discussed in Chapter 5.

Nutt and Wilson (2010:20) refer to the “lack of relevance” of decision-making research due to changing contextual conditions. Globalisation, technological development, deregulation, re-regulation, recession, and competition introduce changes that reduce the value and relevance of decision-making research. They claim that “decision-making theory and empirical research say little about these factors”. These claims probably refer to research based on a traditional reductionist paradigm but not to research based on a complexity paradigm. The contextual influences that render decision-making research less relevant, according to these authors, are addressed in this study in terms of a complexity paradigm in later chapters.

The notion of a “master decision maker” or a “skilled decision maker” who takes care of *all* kinds of contextualised decision issues (Nutt, 2010a:607) is challenged in this study. A skilled “master decision maker” may be effective in solving simple or complicated matters (discussed above) but the role of a master decision maker in a complex context is challenged for reasons elaborated upon in this study.

Academic literature that covers the themes of decision making, complexity, contextual variables, and adaptive leadership within the SA municipal context in reasonable depth is very limited. Various authors address some, or combinations of these aspects to a certain degree (Van der Waldt, 2007; 2011; Davids & Theron, 2014; Schwella, 2015). This study addresses all these aspects in reasonable depth and provides an associated decision framework.

The next section focuses on the notion of context and its dimensions.

## 3.4 The notion of context

Context, derived from the Latin word, *contextus*, can be defined as “[t]he circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood and assessed” (Oxford English Dictionary, 2020). The word is also related to the process “to weave together”, for example, “[T]he decision was taken within the context of planned cuts in spending” (Oxford English Dictionary, 2020). Synonyms given include circumstances, conditions, surroundings, factors, state of affairs, frame of reference.

The notion of context is applied in Chapter 4 to examine the environment in which the municipality functions and in Chapter 5 to study the environment in which the municipality takes decisions.

### 3.4.1 The relevance of context

Context identifies the environment in which a decision is made. It provides a set of boundary conditions (Nutt & Wilson, 2010:17). The importance of a contextual understanding of decision making is confirmed and emphasised in seven chapters in Morçöl’s *Handbook of Decision Making* (2007) and throughout Nutt and Wilson’s *Handbook of Decision Making* (2010). Nutt and Wilson argue that decision-making research findings that are disconnected from the relevant contexts may render the findings questionable and possibly irrelevant (Nutt & Wilson, 2010:21).

Context refers to the domain that contains “the features that affect and are affected by the eventual outcome of the decision-making process” (Keast & Towler, 2009:6). Context refers to the internal and external environment in which decisions are made and implemented (Nutt,

2010b:455). Papadakis *et al.* (2010:33-34) propose an integrative framework that includes four contextual aspects, namely the external environment (outside the organisation), the internal environment (the organisational context), the nature of the decision, and the characteristics of top management. The importance of the explanatory value of context in the process of decision making is confirmed by Nutt (2010a:589).

Nutt and Wilson (2010) identify two kinds of contingencies namely content (or the type of decision) and context (or the environment in which a decision is made). Both aspects are discussed in this study.

According to Nutt and Wilson (2010:15-17), contingency approaches to decision making should include situational factors, or boundary conditions, such as importance, urgency, environmental stability, time pressure, novelty, and complexity, that can influence the process of decision making. Contingency can therefore be a source of change and the trigger of a creative process (Morin, 2008:xxxvi).

An important aspect of case study research is the relevance of context. The essence of case study research, according to Dyer and Wilkins (1991:614), is the careful study of a single case to develop a deep understanding of a particular social setting. In their classical paper, Rittel and Webber (1973:162) refer to wicked problems when they state the following: "One cannot understand the problem without knowing about its context". Thus, the notion of context is important because the knowledge of complex systems is contextual (Morçöl, 2012:17).

Public organisations are open systems, exposed to the directions and interventions from political actors and authorities who seek to direct and control them (Rainey, 2009:89). Therefore, these organisations have to be studied within their contexts.

Complexity theory demands a contextual understanding of phenomena. A comprehensive understanding of a complex context includes an understanding of the multidimensional, spatial, temporal, and conceptual dimensions of that context (Dostal *et al.*, 2005). System thinking (Capra & Luisi, 2014) and the use of metaphors (Morgan, 2006) provide additional frameworks and perspectives to interrogate contextual complexity. The integral framework (Esbjörn-Hargens, 2009) and the CLA framework developed by Inayatullah (2004) provide methodological tools that can be applied to develop complementary perspectives on complex contexts. These models uncover the invisible, interior world of the individuals, groups and communities involved and their visible domains of behaviours and existence. Aspects of these frameworks are applied in Chapter 4 where the municipal context is discussed.

A contextual analysis requires careful consideration of the following two questions posed by Linstone (1984:39-44), namely "what are we looking at?" and "how are we looking at it?". The "what" refers to the various aspects and elements of the context. The "how" refers to three complementary perspectives, namely a technical perspective, an organisational perspective, and a personal perspective. Linstone concludes that multiple perspectives normally reveal more dimensions of reality than a single perspective.

### **3.4.2 Dimensions of context**

It can be argued that any context exists ontologically within a temporal and a spatial domain with depth and breadth. The spatial domain can be described in terms of a PESTLE analysis (Roux, 2013; Botha, 2015:76-120), a Biomatrix perspective (Dostal *et al.*, 2005), and a CLA (Inayatullah, 2004). Epistemologically, contexts are framed as conceptual realities in terms of the paradigm(s) applied by the observer or researcher (Dostal *et al.*, 2005:224-225). The importance of a temporal consciousness, in terms of past, present and future, is emphasised by Linstone (2002), Lombardo (2006) and Schwab (2016). Past, present and future are interlinked (Chen, 2005), and complex systems are path-dependent. They have a history.



Aldrich (1979) distinguishes various dimensions of organisational environments. These dimensions refer to the *capacity* (the availability of required resources), *homogeneity-heterogeneity* (of important elements), *stability-instability* (the rate of change in the environment), *concentration-dispersion* (the distribution of important elements in the environment), *domain consensus-dissensus* (the extent to which the organisation is accepted or rejected), and *turbulence* (the degree to which changes in one area of the environment reverberate and spread to other areas in the environment).

Dess and Beard (1984:52) identify three dimensions of organisational task environments, based on the work of Aldrich (1979), that may have a strong influence on organisational decision making. These are munificence, dynamism, and complexity. Complexity increases as the heterogeneity and the geographical dispersion of an organisation's markets, customers, services, suppliers, and other stakeholders increase (Andrews & Johansen, 2012:178).

Understanding context also demands an understanding of the evolution of contextual variables along a unidirectional timeline. The dimension of time enters the domain of complexity through the arrow of time and the second law of thermodynamics (Hawking, 1988:145). The temporal dimension is closely connected to the path-dependency of evolutionary systems. Thus, policymakers never develop and implement policy on a *tabula rasa* or on a clean slate (Room, 2011:117). They have to deal with the remains of the connective geometry of the past.

Rihani (2002) refers to various co-determinants of the evolutionary process of development. These include "frozen accidents inherited from the past, such as history, religion and traditions", local opportunities and constraints, and the future behaviour of other co-evolving systems (Rihani, 2002:235). The property of path-dependency implies that knowledge of a complex system should include knowledge of its history and its past evolution. Such knowledge should include knowledge of both its recent and distant past (Fernández *et al.*, 2010:178). Pollit and Bouckaert (2011:40) employ the notion of path-dependency to explain how major investments in existing laws, rules and institutions, and the convenience of personal comfort zones contribute to large resistance to change.

In their pioneering study of numerous complex governance systems, Teisman *et al.* (2009) illustrate how contextual variables contribute to non-linear system dynamics, self-organisation, and co-evolution in decision making and project planning and implementation. One important conclusion from their research is that complex governance systems and processes cannot be understood without due consideration of their contexts.

It is of utmost importance that policymakers are aware of their own mental models and metaphors, as well as those of the people affected by their policies. Both the context of the observer or researcher and the context of the phenomenon studied impose limitations on the knowledge gained about complex systems (Morçöl, 2012:154). Our paradigms "shape our efforts to explain the regularities and patterns we observe. Thus, the metaphors of a mechanical equilibrium, a biological eco-system, a positional struggle among first movers in a race against time, will 'frame' the way that we 'see' a policy 'problem' in quite different ways" (Room, 2011:245).

### 3.4.3 Multiple perspectives on context

Any reality or phenomenon exists over time in multiple dimensions (Wilber, 1996; Slaughter, 2001; Dostal *et al.*, 2005:40-42). Often a contextual analysis is based only on a single perspective or framework. Such an analysis may lead to what is called a "flatland" view of the phenomenon (Slaughter, 1998). The quality of decision making may be significantly enriched when contextualised decision issues are evaluated and framed in terms of multiple perspectives that go beyond the flatland perspective (Hammond *et al.*, 2006) or *Weltanschauungen* (Checkland, 1981). Allison (1971) provides a comprehensive insight into the dynamics of the decision-making processes during the Cuban missile crisis of 1962 through

the skilful application of three perspectives, namely, those of a rational actor, the organisational process, and bureaucratic politics. Each of these perspectives reveals unique and complementary aspects of the decision process.

Linstone (1984) builds on Allison's analysis of decision processes and adapts the concept of multiple perspectives to the study of sociotechnical systems (Linstone, 1984:44). Linstone proposes a technical perspective (T), an organisational perspective (O), and a personal perspective (P), as complementary filters to observe the complex world or any of its elements in a balanced way (pp. 44-45). An overemphasis on any one perspective results in an incomplete picture of the world and its future.

In this study, a complexity perspective is used in combination with other perspectives to study the municipal context (in Chapter 4) and municipal decision making (in Chapter 5).

### 3.5 Leadership theory and models

Leaders play critical and determining roles in their organisations (Mandela, 1994; Welch, 2001; 2005; Branson, 2008; Vance, 2015; DuBrin, 2016). They cultivate and nurture the culture of their organisations and they have a determining influence on the functioning, operations and performance of the organisation. In this study leadership behaviours and qualities are considered contingent factors that influence decision making. Therefore, a review of relevant literature is deemed appropriate.

Over the years, the study of leaders and leadership has evolved from the study of "great power leaders" to the study of leadership traits and styles, and further to contemporary leadership theory that focuses on the systemic relations between leaders, followers, and context (Lee, 1980:220; Uhl-Bien *et al.*, 2007; Lee *et al.*, 2020).

Initially, the focus was on individuals perceived as leaders. Current leadership models consider leadership as an emergent phenomenon, an interactive dynamic, that produces adaptive outcomes within a specific context (Heifetz, 1994; Uhl-Bien, Marion & McKelvey, 2007; Rost, 2008). Individual leaders only influence this emergent phenomenon and the outcomes.

Various authors provide a summary of the evolution of leadership theory since the era of the "great man" theory up to the current understanding of leadership as an emergent, systemic phenomenon (King, 1990; Rost, 2008; Hunt & Fedynich, 2018; Cunningham *et al.*, 2020; Lee *et al.*, 2020; Early, 2021).

King (1990) identified ten evolutionary stages of leadership theory development. The initial stage, the *personality era*, included the great man theory and the trait theory of leadership. This theory was based on personalities and traits of leaders. This stage was followed by the *influence era* during which the focus was on power relations between leader and followers, coercion, influence, and persuasion.

The third stage was the *behaviour era* when leadership theories were based on the actions of leaders as opposed to personality traits. The managerial grid model (Blake & Mouton, 1964) and the theory X and theory Y models of McGregor (1960, 1966) were developed during this era. A two-dimensional framework for leadership behaviours was also developed in terms of consideration (i.e., concern for people) and initiating structure (i.e., concern for results) (Stogdill, 1957).

The fourth stage was the *situation era*. Leadership theory started to acknowledge the importance of contextual and environmental factors beyond leader and followers that influenced leadership effectiveness.

The fifth stage was the *contingency era*. More advanced leadership models, such as the contingency theory of Fiedler (1964), the path-goal theory of House (1971), and the situational leadership model of Blanchard (1993), were associated with this era.

The sixth stage was the *transactional era* when leadership theory was based on transactions between the leader and followers that impacted upon their relationship. This stage was followed by the *anti-leadership era* and the emergence of a leadership substitute theory (DuBrin, 2016:9).

The eighth stage was the *culture era* during which Peters and Waterman (1982) published, *In search of excellence*. Collins (2001) investigated how level 5 leadership developed a culture of discipline and entrepreneurship in great companies. It was proposed that leadership was omnipresent in the culture of the entire organization (King, 1990:49).

The ninth stage was the *transformational era* which was linked to charismatic and transformational leadership theory. King (1990) foresaw a tenth, emergent, stage, the *integrative era*. Leadership theories of this era, for example, complexity leadership theory (Uhl-Bien *et al.*, 2007), transcend and include former leadership theories. The main leadership theories are reviewed below.

A distinction is made here between the terms “leader” as a person, and “leadership” as an emergent phenomenon influenced by leaders (Uhl-Bien *et al.*, 2007). Both concepts are complex and multifaceted and lack a clear and generally accepted single definition (King, 1990; Hunt & Fedynich, 2018). However, a leader is defined as a person who leads and a person who has commanding authority or influence (Merriam-Webster, 2021), regardless of whether that person acts in a formal or informal position. An informal leader may not even have a title (Sharma, 2010). Both leaders and leadership appear to have a significant influence on organisations and the capacity of organisations to deal with complexity and uncertainty (Collins, 2001; DuBrin, 2016:7).

The term leadership has been defined in numerous ways but the emergent nature of the concept renders this aim an elusive target (Rost, 2008:94-99). DuBrin (2016:3) defines leadership as a process in which an individual leader influences a group of people within a specific context to act in a manner that should assist them to accomplish a common objective.

The leadership process can therefore be understood as a function of the following key variables: the characteristics and traits of a leader, leader behaviour and style, characteristics of the group members, and the internal and external contextual environment (DuBrin, 2016:28). These key variables correspond with the key variables of the “toxic triangle” model for toxic leadership developed by Padilla *et al.* (2007). A defining aspect of complexity leadership is that it emerges from an interactive, collectivist dynamic. It is a function of mechanisms and interactions among interdependent agents and is informal rather than formal in its nature (Marion & Uhl-Bien, 2011).

The following section contains a summary of important leadership theories.

### **3.5.1 Traits, motives, and characteristics of leaders**

For centuries the study of leadership has focused on the traits, motives, and characteristics of leaders (Lee, 1980:220; Maxwell, 1998; DuBrin, 2016:35) and individual differences (Judge *et al.*, 2009:855). Carlyle (1840) describes the leader as a hero and refers to leaders as the Great Men, men “of native original insight, of manhood and heroic nobleness”. The validity of this biased theory is not supported by empirical data (Hunt & Fedynich, 2018:22).

Trait theory was an extension of the great man theory. In his summary of trait research, Stogdill (1948) listed capacity (which included intelligence), achievement, responsibility, participation,

and status as desirable traits of a leader. Leaders adopting a Machiavellian leadership style use force, manipulation, intimidation, domination, as well as treachery, deception, and fraud to achieve their goals (Machiavelli, 1515). In their review of the leader trait paradigm, Judge *et al.* (2009) considered both the favourable (bright) and negative (dark) aspects of personality traits.

DuBrin (2016:37-46) classifies characteristics associated with leadership into three broad categories, namely personality traits, motives of leaders, and cognitive factors. Traits closely associated with task accomplishment include a proactive personality, passion for the work and people, emotional intelligence, flexibility and adaptability, and courage (DuBrin, 2016:47-53). A proactive personality refers to a person with a future consciousness (Lombardo, 2006), an anticipatory capacity (Poli, 2010), and self-initiated anticipatory action (DuBrin, 2016:47). The importance of emotional intelligence, motives, and mental abilities of leaders has been discussed by various authors (Goleman, 1998; Goleman *et al.*, 2001; Rajah *et al.*, 2011:1109; DuBrin, 2016:50-56). Effective leaders possess a well-developed analytical intelligence, an in-depth knowledge of the work environment, and a creative ability. They also possess the important cognitive skills of farsightedness and conceptual thinking.

The trait approach to leadership has a few strengths but also limitations. There is convincing evidence that successful leaders possess personal characteristics that non-leaders do not have (DuBrin, 2016:62). The trait approach can be used to identify and select potential leaders and to prepare them for taking on new leadership responsibilities (DuBrin, 2016:62). Unfortunately, the trait perspective cannot explain the sources of trait development and it does not adequately take context and circumstances into consideration (Judge, *et al.*, 2009:871; Hunt & Fedynich, 2018:22). The paradox of traits is that the favourable effects of a trait in one context may become irrelevant or even counterproductive when conditions change. Similarly, dark traits may be very effective when the context demands the need for them. Different situations require flexibility and insight so that appropriate combinations of traits can be applied (DuBrin, 2016:63). Although the trait approach indicates a reasonable correlation between several personal traits, behaviours and motives, and leadership effectiveness, it cannot guarantee leadership success.

### 3.5.2 Toxic leadership

Walton (2008:160) defines toxic leadership as “leadership behaviour which poisons, is disruptive, destructive, exploitive, dysfunctional and abusive”. It is based on the self-serving misuse of power and undermines the effective functioning of the organisation. Toxic and destructive leadership is often observed in SA (Plaut & Holden, 2012; Schwella, 2013). Toxic leadership is present when the behaviour of people in leadership positions is informed by dark traits (Pelletier, 2010).

Smith and Fredricks-Lowman (2020:539) state that the term toxic leadership can be used as an umbrella term for several distinct but related dimensions of negative leadership. The term refers to leader and follower behaviours that result in negative long-term effects for both organisational and individual performance, and unfavourable environmental conditions. Pelletier (2010:375) investigated the following dimensions of negative leadership: abusive and tyrannical leadership, destructive leadership, bullying, and toxic leadership.

Padilla *et al.* (2007) developed a systems model called the toxic triangle as an aid to understand the nature of toxic and destructive leadership. According to the model, *toxic leaders* interact with *susceptible followers* within a *conducive environment* to co-produce the destructive effects of toxic leadership that harm the organisation. Toxic leaders work for themselves, against the goals of their organisation and cause a poisonous, dysfunctional, and stressful work environment that adversely affects their subordinates (Winn & Dykes, 2019:38). Toxic leaders have susceptible and uncritical followers who are characterised as conformers

and colluders. Conformers passively allow destructive leaders to assume power. Colluders actively support destructive leaders for personal gain (Padilla *et al.*, 2007:183). Toxic leadership flourishes in unstable environments lacking checks and balances and where institutions are ineffective (Padilla *et al.*, 2007; Smith & Fredricks-Lowman, 2020:544).

Resilience strategies to prevent and curb toxic leadership include training and coaching in conflict management, creating a pleasant work style and work environment, interaction that embraces the human dimension of employees, and sensitivity for the harmful effects of toxic behaviours (Pelletier, 2007:386; Weberg & Fuller, 2019:24; Smith *et al.*, 2020:546).

### **3.5.3 Leadership behaviours, attitudes, and styles**

Researchers started to study leadership behaviours as indicators of effective leadership (Stogdill, 1957) because the results from earlier studies focusing on the trait theory of leadership were disappointing (Judge *et al.*, 2004:36). Stogdill (1957) developed a two-dimensional framework for the study of leadership behaviour. DuBrin (2016) used this same framework to discuss leadership behaviours and attitudes.

The two major dimensions of leadership behaviour are termed “consideration” and “initiating structure” (Stogdill, 1957; Judge *et al.*, 2004:36; DuBrin, 2016:110). Consideration refers to leadership behaviours that create an environment of warmth, friendliness, trust, respect, and emotional support. Consideration is associated with relationship-oriented behaviours and making connections with people. ‘Initiating structure’ refers to the degree to which a leader implements organisational processes and work relations, sets targets, assigns tasks, defines roles of team members, establishes communication channels, and specifies procedures. ‘Initiating structure’ is associated with a production emphasis and a task orientation (DuBrin, 2016:110).

This robust two-dimensional framework to categorise leaders in terms of leadership style remains useful and valid (Judge *et al.*, 2004). DuBrin (2016:112-121) lists several task-related and relationship-oriented attitudes and behaviours that characterise effective leaders. DuBrin (2016:124) defines leadership style as “the relatively consistent pattern of behavior that characterizes a leader”. Both personality traits and behaviours of a person influence the leadership style of that person. DuBrin (2016:125-136) describes several leadership styles and the conditions under which each style is applied. These styles include participative and collaborative leadership, autocratic leadership, leadership grid styles, entrepreneurial leadership, gender-based leadership and servant leadership.

DuBrin (2016:9) also raises an anti-leadership argument according to which substitutes for leadership renders leadership unimportant. Leadership becomes less important when closely knit teams of highly trained individuals experience intrinsic satisfaction in the work they do. Information technology may serve as substitute for some leadership functions, and employees with strong professional norms require minimum supervision and leadership. Substitutes for leadership may have been built into a situation by a leader at an earlier stage (King, 1990:49).

### **3.5.4 Contingency and situational theories of leadership**

Contingency and situational leadership theories provide a framework to identify leadership approaches that are appropriate and adequate to deal with contextual variables over which leaders have no control (DuBrin, 2016:148, 155). The nature of these situations is co-defined by contingent factors, such as the culture and nature of an organisation, characteristics of the workforce and employees, the nature of the tasks at hand, and the relations between leader and team members. An assumption of contingency theory is that leaders are most effective when they make their behaviour contingent on situational forces (DuBrin, 2016:146).

Fiedler's (1964; 1967) contingency theory of leadership effectiveness is based on the premise that a person's leadership style is relatively fixed and difficult to modify. Therefore, leadership effectiveness is determined by how well a leader's style matches the situation. The advantage of Fiedler's theory is that it incorporates contextual variables and leadership behaviours to better understand leadership. However, this relatively complicated model suffers from several critical limitations (McMahon, 1972:700; DuBrin, 2016:151). Research findings challenge the reliability and validity of the contingency theory of leadership.

### 3.5.5 Crisis leadership

Leadership is the key ingredient to successful crisis management (Kielkowski, 2013:65). Leadership during a crisis can also be regarded as contingency leadership since the situation demands certain leadership behaviours, attitudes, and traits (DuBrin, 2016:163). Crisis leadership includes proper contingency planning, building a culture of preparedness, effective communication at all times, and decisive leadership during a response to a crisis and during the recovery phase (Kielkowski, 2013). Cunningham *et al.* (2020:22) discuss the importance of the use of social media mobile devices for mass communication during crisis situations.

DuBrin (2016:163-168) discusses several attributes and behaviours associated with successful crisis leadership. These include decisive action during a crisis, having compassion with affected parties, strategic thinking, displaying optimism, staying calm, communicating effectively, establishing a climate of trust, and transforming disorder into order.

### 3.5.6 Evidence-based leadership

Evidence-based leadership is a type of contingency leadership (DuBrin, 2016:169). This type of leadership applies research-based evidence and empirical observations to deal with a given, similar situation. "Evidence-based management ... derives principles from research evidence and translates them into practices that solve organizational problems" (Rousseau, 2006:256-257). Such principles have to be credible and have to be based on clear and valid evidence. In addition, "practices that capitalize on a principle's insights must suit the setting". "Evidence-based management ... promises more consistent attainment of organizational goals".

These statements are critical and controversial for the following reasons: Complex and wicked problems are not "solved" but "dissolved" when the co-factors contributing to complex challenges are addressed (Rittel & Webber, 1973; Dostal *et al.*, 2005; Grint, 2008). Tame, structured, well-defined problems can be solved, but complex problems cannot be solved. Complex problems are unique and context-specific. By definition then, complex problems cannot be solved by applying evidence-based principles that suit the setting. Only tame problems, well-defined simple or complicated problems can be solved through the application of evidence-based leadership; or rather evidence-based management (Grint, 2008:12).

To conclude, evidence-based leadership (i.e., management) is appropriate and value-adding when applied to tame problems in the domain of order (Rousseau, 2006).

### 3.5.7 The path-goal leadership theory

The original path-goal leadership theory was developed to address inconsistencies and shortcomings of micro-theories of leadership that focused on task and person-oriented supervisory behaviours (House, 1996:324). This theory addresses "relationships between formally appointed superiors and subordinates in their day-to-day functioning" (House, 1996:325). The path-goal leadership theory of House (1971) proposed that a leader should choose a leadership style that complemented the characteristics of team members and the demands of the task in order to be effective. The original theory provided for four leadership styles: directive, supportive, participative, and achievement-oriented leadership (House, 1996:326-327). Leaders should pave the way and assist subordinates to realise

“organizationally-desired and individually-valued outcomes” (Schriesheim & Neider, 1996:317).

House (1996) addressed a few limitations of the original theory in a subsequently reformulated and expanded theory. Important aspects of the reformulated theory are the motivational behaviour of the leader towards subordinates, the leader’s role to establish an environment that is conducive to goal attainment, and subordinates’ intrinsic satisfaction when goals are achieved. The reformulated path-goal theory contains 26 propositions and is characterised by eight classes of leader behaviours regarded as independent variables (House, 1996:335-343).

An advantage of path-goal theory is that it goes beyond the earlier focus of leadership theory on task-oriented and people-oriented behaviours (House, 1996:333). Evolution of path-goal theory towards its reformulated version stimulated the development of value-based leadership theory and charismatic leadership theory (House, 1996:349). The reformulated theory can be entitled a theory of work unit empowerment (House, 1996:347) that specifies both the empowerment behaviours and the conditions under which such behaviours may be effective.

A disadvantage of the reformulated theory is that it lacks parsimony and that it is somewhat limited in scope (House, 1996:348). The theory does not address leadership across more than one hierarchical level. Path-goal theory does not consider political behaviour of leaders, change leadership, or even strategic leadership of organisations. Path-goal theory has attracted little interest from managers and researchers (Schriesheim & Neider, 1996:319; DuBrin, 2016:155).

Charismatic leadership theory (House, 1977), a legacy from path-goal theory research (House, 1996:333) is discussed next.

### **3.5.8 Transformational and charismatic leadership**

Transformational leaders possess many of the favourable characteristics of leaders mentioned above but specifically also the personal characteristic of charisma (DuBrin, 2016:77-97). Charisma is only part of transformational leadership (Bass & Riggio, 2006). Charismatic leadership and transformational leadership are therefore closely related concepts. The essence of transformational leadership is that leaders use charisma (and other related skills) to transform people and align their values and behaviours so that the organisation is transformed to perform better (King, 1990:49; Peters & Waterman, 1982:81-85; DuBrin, 2016:91). “Transformational leadership focuses on inspiring followers to see the higher purpose of the task at hand while also empowering each person to fulfil their potential” (Cunningham *et al.*, 2020:7). Transformational leaders develop leadership skills in those below them (Bass & Riggio, 2006:2).

Charismatic leaders are defined as dominant and self-confident; they have a strong need to influence others, and they appear to have a strong conviction in the moral righteousness of their own beliefs and values (House, 1976). They are visionary, inspirational, dramatic, energetic, and action-oriented; they are masterful communicators, and they can inspire trust among group members (DuBrin, 2016:77-79). Charismatic leaders take risks and use unconventional strategies to achieve their goals. They make extensive use of both face-to-face networks and virtual networks to project charisma and to spread their influence.

House (1976) discussed the effects of charismatic leadership, the characteristics and behaviours of charismatic leaders, characteristics of followers, and situational factors associated with the emergence and effectiveness of charismatic leaders (House, 1976). Note the similarity between House’s model of charismatic leadership and the leadership model of DuBrin (2016:21).

Charismatic and transformational leadership, regarded as an emergent phenomenon (House, 1976:2), can have very favourable long-term effects for the organisation provided such leadership is ethically and morally justifiable (DuBrin, 2016). There is remarkable power of character in socialised charismatic leadership when such character is built on strong values, morals, ethics, and principles (Munroe, 2014). Personalised charismatic leaders and celebrity charismatic leaders tend to serve their own interests at the cost of the organisation (DuBrin, 2016:76-77).

The above authors have listed several advantages of socialised charismatic and transformational leadership. This leadership style is appropriate for use in a complex organisational context. Transformational leaders interact and collaborate very effectively with people and network across boundaries. They can deal with fundamental change and uncertainty in a VUCA world. Transforming mind-models, attitudes and behaviours benefit both the individuals involved and the entire organisation.

DuBrin (2016:98-99) mentions major concerns about charismatic leadership. It is uncertain whether it is possible to accurately define the murky concept of charisma in operational terms and to measure it. Others postulate that charisma is an effect rather than a cause of leadership effectiveness. Charisma also has a dark side to it (Bass & Riggio, 2006). Some charismatic leaders are unethical and devious. They lead and inspire their followers to destructive, selfish, and evil ends. Their behaviour harms both the organisation and people involved.

### **3.5.9 Situational leadership**

There is no one best leadership style (Blanchard, 2008:19). Therefore, according to the situational leadership model, initially developed by Hersey and Blanchard (1979), leadership style is adjusted to match the level of development of individual group members with the degree of difficulty of a specific task (Blanchard *et al.*, 1993; Blanchard, 2008:19). This leadership style is dynamic and developmental. It responds to the needs of the situation and the characteristics of individual group members.

The model distinguishes four leadership styles (Blanchard *et al.*, 1993:25) that represent different combinations of two independent behaviours, namely directive and supportive (DuBrin, 2016:157-158). These styles are defined as directing, coaching, supporting, and delegating styles. The most effective of these is the coaching style, one that provides both directive behaviour and supportive behaviour (Blanchard, 2008:19). The appropriate style is primarily a function of the degree of difficulty of the task, and the developmental level, namely, the degree of competence and commitment of the person doing the task. Effective leaders know how to use all four styles depending on the situation (DuBrin, 2016:158).

This leadership model builds on other explanations of leadership that emphasise the role of task and relationship behaviours (DuBrin, 2016:158). The model has proved to be useful and is used widely. The model has a few limitations. Both the model and the instrumentation have changed over time. These changes have caused the research to be confusing and at times inconclusive (Blanchard *et al.*, 1993:34). The different leadership situations are less clear-cut than the model suggests (DuBrin, 2016:159).

### **3.5.10 Leadership as decision making**

An article by Tannenbaum and Schmidt (1958) inspired the development of the normative decision model by Vroom and Yetton (1973). The contingency viewpoint of the normative decision model is that leadership is a decision-making process in which the leader considers certain situational factors to decide on an appropriate decision-making style (Vroom, 2000; DuBrin, 2016:159).



The Vroom-Yetton model is in the form of an expert system or a decision tree (Vroom, 2000:84-89). Seven situational variables that may be relevant for a specific problem are considered in order to identify a recommended decision style (or leadership style) from five possible styles that vary from autocratic to participative. The leader may *decide alone*, or may *consult individuals*, or may *consult the group*, or may *facilitate a decision process*, or may *delegate* the decision to the group. Vroom (2000:85) has found that “increasing participation leads to greater ‘buy-in’, commitment to decisions, and motivation to implement them effectively”. The seven situational (or problem) variables render the model a contingency model (Vroom, 2000:89). The model has two versions. One version is used when time is critical, and the other more resource-intensive version is used to develop group members’ decision-making skills.

The model has several advantages. According to Vroom (2000:89), application of the model significantly improves the success rate of decisions taken. A computerised version allows for the inclusion of more situational variables, the value of time, and the value of development of team members.

Most of the leadership models discussed so far have focused on the role and characteristics of the leader, the characteristics of followers, and specific contextual variables that affect leadership effectiveness. These models are inadequate to deal effectively with the complex nature of decision issues and leadership issues of the postmodern globalised world (Uhl-Bien, Marion & McKelvey, 2007; Van Loon & Van Dijk, 2015). Instead, complexity science offers a fresh paradigm for the study of leadership and the development of new theories of leadership in a complex context. This new approach to leadership is discussed next.

### 3.5.11 Complexity leadership

Complexity leadership is the application of complexity science to the study of leadership in organisations and their environments (Marion & Uhl-Bien, 2011:386). Complexity leadership is based on a complexity paradigm that is appropriate for the challenges that characterise the fast-paced, volatile context of the knowledge-oriented era (Uhl-Bien *et al.*, 2007). It is concerned with leadership within CASs (Byrne & Callaghan, 2014). “Complexity Leadership Theory (CLT) focuses on identifying and exploring the strategies and behaviors that foster organizational and subunit creativity, learning, and adaptability when appropriate CAS dynamics are enabled within contexts of hierarchical coordination (i.e., bureaucracy).” (Uhl-Bien *et al.*, 2007:299)

Complexity leaders deal with decision issues defined as wicked (Rittel & Webber, 1973), adaptive (Heifetz, 1994; Heifetz *et al.*, 2009), and complex (Uhl-Bien *et al.*, 2007). Decision and leadership issues may be defined as critical, tame or wicked (Grint, 2008; Van Loon & Van Dijk, 2015), or clear, complicated, complex, or chaotic (Greenberg & Bertsch, 2021), or technical or adaptive (Heifetz *et al.*, 2009). The first step a leader should take when addressing an issue is to make sense of the issue in its context (Snowden & Boone, 2007), by identifying the true nature of the issue. Thereafter, appropriate action is implemented to address the issue.

Complexity leadership adopts a whole-systems perspective which is different from the more traditional approaches that focus on variables and component parts (Lichtenstein *et al.*, 2006:2). These authors define leadership as “an emergent event, an outcome of relational interactions among agents” (emphasis in original). A fundamental change in perspective is that “leadership is a dynamic that transcends the capabilities of individuals alone; it is the product of interaction, tension, and exchange rules governing changes in perceptions and understanding” (Lichtenstein *et al.*, 2006:2).

*Adaptive leadership* refers to leadership as an informal, emergent, adaptive, and dynamic process that occurs throughout the organisation in the face of adaptive and complex challenges (Heifetz, 1994; Uhl-Bien *et al.*, 2007:300). Adaptive leadership is the product of

relational interactions among agents, and it emerges in the interactive spaces between people and ideas (Lichtenstein *et al.*, 2006:2). It is a system phenomenon that originates in tensions and asymmetrical interactions among agents and groups, and it occurs informally among agents within a CAS (Uhl-Bien *et al.*, 2007:306-308). It is not an act of authority or of an individual but rather a dynamic of interdependent agents. Adaptive leadership is enabled through network dynamics, in particular, the contexts and mechanisms that co-produce adaptive outcomes such as system-wide learning, creativity, and adaptability. Emergence of adaptive outcomes, that may be unpredictable and non-linear, is made possible through two resonating processes, namely, the reformulation or transformation of existing elements, and self-organisation.

Originally, complexity leadership was framed in terms of three entangled leadership roles. These roles were adaptive leadership, administrative leadership, and enabling leadership (Uhl-Bien *et al.*, 2007). An updated version of the theory (Uhl-Bien & Arena, 2018) relabelled adaptive leadership as *entrepreneurial leadership*. Administrative leadership was changed to *operational leadership*, and the definition of *enabling leadership* was refined. These three leadership roles are defined as follows (Uhl-Bien & Arena, 2018:98):

*Entrepreneurial leadership* is leadership that creates new knowledge, skills, products and processes to sustain the future viability of the firm.

*Operational leadership* is “leadership in the formal systems, structures and processes that produce results through selection, refinement, execution and efficiency”. It is concerned with the hierarchical and bureaucratic functions of the organisation and is supported by authority and positional power to take decisions (Uhl-Bien *et al.*, 2007:300).

*Enabling leadership* is all about creating, engaging and protecting the adaptive space that is needed to nurture and sustain the adaptability process in organisations. Earlier, Uhl-Bien *et al.* (2007:305) defined three functions of enabling leadership. First, enabling leadership allows for emergence of adaptability. Second, it facilitates the flow and exchange of knowledge and creativity between the operational structures and the entrepreneurial structures of the organisation. Third, it ensures the simultaneous and mutually supportive execution of operational leadership and adaptive leadership functions. Enabling leadership, like adaptive leadership, spans all hierarchical levels in the organisation.

Adaptive space has been defined by Arena and Uhl-Bien (2016). Adaptive space bridges the entrepreneurial system and the operational system within an organisation. It embraces conflict and internal and external pressures that create dynamic tension in the interface between the operational and entrepreneurial domains. Adaptive space allows novel ideas to emerge and to diffuse into the rest of the organisation (Arena & Uhl-Bien, 2016). Adaptive space can also be defined as “the network and organizational context that allows people, ideas, information, and resources to flow across the organization and spur successful emergent innovation” (Arena *et al.*, 2017:41). It is within adaptive space that the creative forces of innovation are confronted by the forces of the bureaucratic operational system that tend to stifle the creative energy of the entrepreneurial system (Arena & Uhl-Bien, 2016:24). Enabling leadership is active within adaptive space which bridges and links the entrepreneurial domain and the operational domain (Uhl-Bien & Arena, 2018:99).

Adaptive space can be any type of environment as long as it creates an opportunity for ideas generated within the entrepreneurial domain of the organisation to migrate into its operational system. Leaders enable adaptive space by harnessing the processes of “*conflicting*” and “*connecting*” to advance innovative ideas that could be deployed in the operational system to create a new adaptive order (Uhl-Bien & Arena, 2018:99). *Conflicting* is about the use of tension within networks to generate the emergence of higher-order, adaptive outcomes. *Connecting* involves linking up agents (i.e., people, ideas, resources, information) in networks

across all kinds of organisational barriers in ways that scale novelty and innovation into beneficial new order in the operational system (Uhl-Bien & Arena, 2018:100). The role of brokers, connectors and energisers within these social networks are of specific importance (Arena *et al.*, 2017:41-43).

The above leadership roles are dynamically intertwined, or entangled. “Entanglement describes a dynamic relationship between the formal *top-down, administrative forces* (i.e., bureaucracy) and the informal, *complexly adaptive emergent forces* ... of social systems” (emphasis in original) (Uhl-Bien *et al.*, 2007:305).

CLT questions the assumptions underlying traditional leadership theories (Lichtenstein *et al.*, 2006). In contrast, it is based on premises that recognise the importance of relationships and interactions among agents within CAS, the dynamic nature of non-linear and complex processes, the dimension of time, and a whole-systems view. CLT spans all organisational levels and boundaries. It provides an integrative theoretical framework for explaining interactive dynamics associated with the emergent phenomenon of adaptive leadership (Lichtenstein *et al.*, 2006:3-4).

A complexity leader’s role is to ask the right *questions* rather than provide the right *answers* (Grint, 2008:13). They are authentic, ethical, and mindful, and they engage in generative dialogue when addressing wicked, complex issues (Van Loon & Van Dijk, 2015:73). Dialogical leaders create an environment in which new perspectives, narratives, and meanings are nourished and shared (Van Loon & Van Dijk, 2015:67). They initiate collaboration among stakeholders (Ibarra & Hansen, 2011), especially disciplined collaboration (Hansen, 2009) to address wicked issues. They apply an exploratory “probe-sense-respond” strategy to find emerging patterns when they address complex issues (Snowden & Boone, 2007; Greenberg & Bertsch, 2021). Schwella (2014) recommends an action learning approach to address complex decision issues.

CLT has certain managerial implications (Lichtenstein *et al.*, 2006:8). It encourages all agents or interconnected members to be leaders. It drives responsibility downward and takes pressure off formal leaders. This leadership approach should stimulate self-organisation and innovation and should enhance responsiveness and adaptive capacity. Tension can even be introduced to stimulate adaptive change. It also emphasises the importance of relationships and heterogeneity. The complexity leadership paradigm focuses on enabling the learning, creative, and adaptive capacity of CASs within a context of knowledge-producing organisations (Uhl-Bien *et al.*, 2007:298-304). In addition, it seeks to “integrate complexity dynamics and bureaucracy, enabling and coordinating, exploration and exploitation, CAS and hierarchy, and informal emergence and top-down control”.

### 3.5.12 The future of leadership

The development of systems theory, complexity theory, chaos theory and quantum theory produced new paradigms that replaced the Newtonian reductionist mechanical-universe paradigm that informed earlier leadership studies (Burns, 2008:22). As a result, leadership theory has developed from a simple, unidimensional focus on the individual leader’s personal characteristics and behaviours to a complex, dynamic and multidimensional arena (King, 1990; Hunt & Fedynich, 2018). Within this complex arena, leadership is defined in terms of relationships with followers, interactions with the environment, contextual variables, contingencies, adaptation, and transformation processes.

Future leaders will have to deal with several global challenges (Mack, 2015:10-15; Suderman & Foster, 2015). These include the challenge of an information overload and a growing loss of dialogue, global resource depletion, rapid and unplanned urbanisation, global warming, the exponential growth of disruptive technology in a digital era, and a more transparent world. Future leaders will need the ability to use big data and foresight tools to spot and act upon

weak signals linked to threats and opportunities. They will have to address the need for social justice, social cohesion, and fair treatment of all people (Noble, 2015:43, 52). The ability of leaders to leverage desired changes in a globalised, entangled world will depend on their ability to change their paradigms (Meadows, 1999; Satterwhite *et al.*, 2015:70-71).

The complexity of future global challenges will require strategist leadership competencies. “Strategist leaders have a world-centric, truly inclusive capacity to see, make meaning, and respond in a way that facilitates consistent, flexible, holistic, meta-systemic, broadly collaborative, and transformative problem-solving” (Cannon *et al.*, 2015:190). Wilber (2013) refers to this radically new and altogether revolutionary stage of adult psychological capacity as “a truly holistic or integral consciousness – meaning consciousness that is all-inclusive, embracing, caring, pervading, outreaching, enveloping”. Loevinger (1976:25) refers to corresponding stages of ego development as autonomous and integrated. Cook-Greuter (2013:6) refers to a state like the strategist stage as the autonomous stage of ego development. “Autonomous persons can perceive systemic patterns or long-term trends and are often valued for that ‘strategic’ capacity and vision” (Cook-Greuter, 2013:63).

All these scholars agree that people at the strategist level of ego development are flexible and able to think holistically. They can apply multiple worldviews and perspectives to a situation, and they have internalised systems thinking. Autonomous individuals begin to see paradox and ambiguity as an inevitable dimension of living (Cook-Greuter, 2013:66) and they increasingly tolerate these. They use polarity thinking wisely to address decision issues and tensions. Autonomous people deal effectively with long-term time frames, contexts that include multiple interacting systems, circular causality, complex relationships and global contingencies, and paradoxes, and they can tolerate ambiguity (pp. 71-72).

Future leadership will be characterised by ethically and socially responsible behaviour (DuBrin, 2016:178), adaptive leadership (Heifetz, 1994), “altrocentric” leadership which focuses on the interests of others, and practical wisdom (Amaladas, 2015:80). Future anticipatory leaders will need an anticipatory capacity (Doublestein *et al.*, 2015:111). Anticipatory leaders combine strategic thinking, strategic foresight, strategic alignment, and strategic action (Poli, 2010; 2019).

Future leadership development will have to stimulate both vertical development and horizontal development (Cannon *et al.*, 2015:196). Horizontal leadership development focuses on development of skills and competencies at a given level of maturity. Vertical leadership development transforms individuals’ worldviews and consciousness. “With an increase in the complexity of their consciousness, they perceive the world and respond to it in more skilful, wise, nuanced, and sensitive ways that were not possible before” (Cannon *et al.*, 2015:196).

The strategist competency model proposed by Cannon *et al.* (2015) is based on seven traits that both “differentiate their developmental maturity and contribute to their transformative effectiveness”. These traits are professional humility, commitment to their mission, a strategic perspective, intellectual versatility, authenticity and reflectivity, the ability to inspire followers, and a collaborative approach to find novel ways to address complex issues (Cannon *et al.*, 2015:198-200).

Piel and Johnson (2015:208) suggest that four key quantum theory principles may yield rich and novel insights into leadership theory. These principles are *duality*, *superposition*, *entanglement*, and *observation* of light waves.

Cunningham *et al.* (2020:7-8) refer to a critical turn in leadership studies. Critical leadership studies question the assumptions regarding the relationships between leaders and followers. It assumes leadership is relational and co-constructed through interactions among interconnected agents. Critical leadership studies include diverse perspectives such as feminism, post-colonialism, and environmentalism. Cunningham *et al.* (2020:19) observe the

emergence of digital leadership within virtual networks of leaders and followers who may never meet or know one another. In the digital domain, leaders need advanced communication skills.

Future leadership theories may include “a conceptual integrating framework which ties the different approaches together and makes possible the development of a comprehensive, sustaining theory of leadership” (King, 1990:50). CAS theory provides such a framework. In this framework, the leaders, namely “key position holders”, facilitate the adaptive processes according to the shared purpose and core values of the learning organisation (Burns, 2008:24-25).

Organisation theory, like leadership theory addresses contextual factors that affect decision making. Important aspects of organisation theory are reviewed next.

### 3.6 Organisational theory

Organisational theory provides a useful framework to study certain contextual aspects of municipal decision making. In this section, the notion of organisation is defined. Certain aspects of an organisation are discussed, and the role of power, politics, interests, and conflict in organisations is reviewed. Biomatrix systems theory is used as a framework for this review of organisation theory (Dostal *et al.*, 2005).

For Simon (1976:xvii), the term, *organisation*, refers to the complex pattern of communication and relationships in a group of humans. This pattern provides to each member of the group much of the information and many of the assumptions, goals, and attitudes that enter his decisions, and provides him also with a set of stable and comprehensible expectations as to what the other members of the group are doing and how they will react to what he says and does.

Maturana and Varela (1980:xix) define the term, *organisation*, simply as “[t]he relations between components that define a composite unity (system) as a composite unity of a particular kind, constitute its organization.” For Lee (1980:201), *organisation theory* means theory about the *combining of resources* available for achieving objectives.

A more recent and expanded definition of *organisational theory* by Jones (2013:30) is, “[t]he study of how organizations function and how they affect and are affected by the environment in which they operate”. This definition considers the dynamic interaction between the organisation and its environment, and the processes of self-organisation and evolution. The theoretical framework of Jones (2013) consists of the following interdependent organisational aspects: organisational structure, organisational culture, and organisational design and change.

Morgan (2006) uses the following eight metaphors as complementary images to describe the *organisation*, namely a machine, an organism, a brain, a culture, a political system, a psychic prison, as flux and transformation, and as instruments of domination. Each metaphor reveals an important aspect of the dynamics and complexity of an organisation. The image of flux and transformation focuses specifically on the complexity of organisational life and the dynamic processes associated with *organisation* (Morgan, 2006:241-290). Complexity theory offers useful insights into evolutionary processes of self-organisation and adaptation, processes of change and emergence, leverage effects through feedback loops, and organisational dynamics. The challenge for managers is to create contexts that stimulate behavioural patterns that are adequate to meet the challenges facing the organisation (Morgan, 2006) .

In the following sections, Biomatrix systems theory is used as an integrating framework to discuss several organisational aspects (Dostal *et al.*, 2005).

### 3.6.1 Aspects of organisational theory

Core aspects of organisational theory are reviewed here primarily in terms of the Biomatrix systems perspective (Dostal *et al.*, 2005). This perspective can be applied to all kinds of processes, systems, and organisations, including CASs.

Dostal *et al.* (2005) identify seven organisational aspects. All these intertwined organisational aspects co-define a complex organisational system. A simplifying analytical approach is adopted here as each aspect is discussed separately. The seven integrated organisational aspects refer to the organisational environment, the ethos of the organisation, aims and objectives, organisational processes, organisational structures, resources, and governance of the organisation. Each of these aspects is discussed next.

#### Organisational environment

Normally the organisational environment is discussed in terms of an external environment and an internal environment with fuzzy and subjective boundaries between them. An organisation operates, evolves, and adapts within a complex network of changing pressures and forces of the external environment with which the organisation interacts (Jones, 2013:81). The external environment is the source of major contingencies and the resources required by the organisation. Dynamic and unpredictable environmental forces introduce uncertainty and complexity into organisational life (Jones, 2013:82-88).

In terms of a complexity perspective, an organisation's structure and culture are continuously evolving and adapting as environmental factors influence and inform organisational redesign and change. As a result, organisations tend to become more complex (Jones, 2013:32). To survive and thrive, organisations have to monitor and analyse, or scan their environments for early indicators of changes or developments that may affect them (Voros, 2003; Bigley, 2018).

#### Ethos of the organisation

The ethos of an organisation refers to its values, guiding principles and culture (Dostal *et al.*, 2005:). Organisational culture refers to the set of shared values and norms (Jones, 2013:31), and the shared beliefs, shared meaning, shared understanding, and shared sense making (Morgan, 2006:134). These factors co-define how members of the organisation should interact with each other and with stakeholders. Organisational culture has a huge influence on the behaviour of employees, their motivation and decision-making, and their response to events internally and externally to the organisation.

Hamilton and Gioia (2010:139-152) emphasise the importance of organisational identity in decision-making. The identity of the organisation is expressed in terms of a set of beliefs and claims about the deeply held values, ideals, and principles. This identity is an influential precursor to organisational decision-making when there is consistency in aligning "who we are" with "what we do". Organisational identity, regarded as a contextual factor, will influence the characterisation of a problem and the decision process, and hence also the outcomes of the decision process.

Culture shapes the character of an organisation and allows people to construct their reality (Morgan, 2006:122). Morgan describes how rituals, the organisational chart, codes and procedures, individual attitudes and behaviour, the examples set by leaders, management styles, conflict, the use of power and language, the contents of organisational policies, the way meetings are conducted, documents, physical artefacts, and many other factors, reveal aspects of organisational culture. Similarly, stories, myths, legends, mindsets, paradigms, and metaphors convey something about the less visible elements of organisational culture.

An important aspect of culture is its ethical dimension. Organisational ethics has a fundamental impact on the way decisions are made and the way employees behave and interact with stakeholders (Jones, 2013:67). Ethical behaviour is such that it is aligned with relevant legislation, the moral principles and norms of the individuals involved, the organisation and the society involved (Jones, 2013:66-68).

Organisational culture evolves and changes over time as a result of internal and external factors. Organisational culture can be changed through deliberate intervention “by influencing the ideologies, values, beliefs, language, norms, ceremonies, and other social practices that ultimately shape and guide organized action” (Morgan, 2006:142). Normally, cultural changes affect organisational structure. “Ethos determines what the system *is* and will *become*” (italics in original) (Dostal *et al.*, 2005:60). Ethos is destiny!

### **Aims and objectives**

“Organizations are goal-directed, purposive entities, and their effectiveness in pursuing those goals influences the quality of our lives” (Rainey, 2009:145). The goals, aims and objectives of an organisation direct its activities and its resources. Aims motivate, aims attract resources and feedback, and aims create focus within an organisation (Dostal *et al.*, 2005:68-69). Aims of an organisation refer to the vision, mission, objectives, goals, and strategies of an organisation and are often stated in their strategic plans, mission statements, annual reports and on websites (Dostal *et al.*, 2005:67; Rainey, 2009:146). In a political context, alignment of aims can mask serious conflict in ethos, especially when political parties with conflicting ideologies align around a specific goal (Dostal *et al.*, 2005:68).

Although goal clarification is a controversial topic, organisational effectiveness is measured in terms of goal achievement (Rainey, 2009:154). Rainey describes a framework for measuring American government performance in terms of five management areas, namely financial management, human resources management, capital management, information technology management, and managing for results (Rainey, 2009:158-160). Kaplan and Norton (2001) developed the balanced scorecard as an instrument to measure organisational performance and effectiveness along multiple dimensions. Balanced scorecards can also be used to align key management processes and systems to the organisation’s strategy.

### **Organisational processes**

Dostal *et al.* (2005:282-287) distinguish three categories of interconnected organisational processes. These are self-directed processes, inward-directed processes, and outward-directed processes. *Self-directed processes* are self-referring organisational support processes that ensure the effective and efficient functioning of the organisation as a whole. The important processes of decision making, planning, OL, organisational design, and innovation belong to this category. These processes provide coordinating support for both inward- and outward-directed processes.

*Inward-directed processes* are the business support processes that provide resources as required by the outward-directed processes of an organisation. Financial and administrative processes, KM and human resource management belong to this category of processes.

*Outward-directed processes*, also called core business processes, are processes that deliver products and services to the external environment of a system in terms of its purpose. This category typically includes procurement, production, marketing, and distribution processes. These processes are associated with service and product delivery to communities by municipalities.

OL is an example of a self-directed process. OL can be defined as “a learning process within organizations that involves the interaction of individual and collective (group, organizational,

and inter-organizational) levels of analysis and leads to achieving organizations' goals" (Popova-Nowak & Cseh, 2015:299). Organisations learn through individuals who practise the discipline of personal mastery (Senge, 2006:129). Senge refers to group learning as the alignment of individual learning through team learning (Senge, 2006:216). OL is inspired by a vision that is shared by all involved individuals and groups (Senge, 2006:191). At the interorganisational level, learning is based on the principle of systems thinking. Systems thinking integrates learning at all levels within the organisation and among organisations.

Organisations turn to OL to remain competitive within a complex and uncertain context. Organisations with an adaptive culture structure themselves in a manner that facilitates OL (Jones, 2013:368). Learning is an emergent outcome co-produced by network dynamics and mechanisms within the context of an adaptive organisation (Uhl-Bien *et al.*, 2007:308). In fact, OL only becomes focused and productive through the adaptive capacity of learning organisations (Jankowicz, 2000:471). OL is an essential dynamic capability within the adaptive space of adaptive organisations that enables them to deal effectively with opportunities and threats (Uhl-Bien & Arena, 2018:92-94). Learning is entangled with the innovation process.

A culture of learning is of utmost importance in the realm of the current reality, or the New Normal (McCloskey, 2014:170-175). Intellectual flexibility requires unlearning of ineffective behaviour patterns, speed-learning of new behaviours and tolerance for good-hearted failure. Snowden and Boone (2007) and Pelrine (2011) recommend a "probe-sense-respond" cycle of learning consisting of safe-to-fail experiments under conditions of complexity. The action learning approach of Schwella (2014) poses four critical questions, namely: What happened? Why did it happen? What can be learned from the experience? How can the learning be used to improve the system involved?

*Organisational design* is another important self-directed process. This process is informed by the ethos of the organisation and by the guiding ideas, namely, the purpose, vision, and core values of the organisation (Dostal *et al.*, 2005; Senge, 2006:326-327). Organisational design and change refer to the adaptive capacity of the organisation. Organisational design is "the process by which managers select and manage aspects of structure and culture" so that the organisation can control the means and activities employed to achieve its goals (Jones, 2013:31). Competitive forces, other contingencies in the external environment, and internal dynamics may be instrumental in initiating organisational redesigns. The degree of complexity of an organisational context has important implications for all the other organisational aspects (Jones, 2013).

*Differentiation* is a self-directed process that allocates employees and resources to organisational tasks in terms of authority relationships and governance arrangements so that the organisation achieves its goals (Jones, 2013:114). Differentiation has important implications for the division of labour and the degree of specialisation. As complexity of an organisation increases, the degree of differentiation and specialisation increases.

### **Organisational structure**

Rainey (2009:204) refers to organisational structure as "the configuration of the hierarchical levels and specialized units and positions within an organization and to the formal rules governing these arrangements". Organisational structure is influenced by the processes and technologies employed (especially information technology), the size of the organisation, managers' strategic choices, and environmental factors. The more complex and uncertain the environment becomes, the more flexible and adaptable the structure and processes need to be (Rainey, 2009:211).

Various authors (Friedman, 2006; Martin, 2006; Rainey, 2009; Schwab, 2016) highlight the importance of technological innovation and 4IR as driving forces that affect organisations and their structures in multiple ways.



Organisational structure refers to both the formal control systems that determine how people coordinate their actions to achieve the goals of the organisation, and to the systems used to motivate people to act accordingly (Jones, 2013:31). Organisational structure controls both the coordination of activities within the organisation, and the motivation and behaviour of employees. Organisational structure may change and evolve in response to environmental contingencies and to strategic changes. There are close links between organisational structure, organisational culture, and organisational design and change (Jones, 2013:30). Cultural changes and organisational redesign initiatives normally result in structural changes.

The organisational model proposed by Dostal *et al.* (2005) has a different perspective of organisational structure compared to Jones' model. The Biomatrix systems model of Dostal *et al.* distinguishes between the seven entangled systems aspects mentioned above. The Biomatrix model allows for a more manageable approach to the redesign and change of organisations as the level of analysis focuses on more basic units of analyses.

Rainey (2009:209) identifies four dimensions of structure. *Centralisation* refers to the degree of centralisation of power and authority at the highest levels of the organisation. *Formalisation* refers to the extent to which an organisation's structure, processes, rules, and regulations are documented. *Red tape* refers to the burdensome administrative rules and requirements that entail a compliance burden without adding much value. *Complexity* refers to the number of organisational subunits and hierarchical levels, specialisation of labour, and horizontal and vertical differentiation.

Centralisation and decentralisation of authority and decision-making power is an essential structural feature. A fine balance is required between centralised decision making in order to maintain control, and decentralised decision making in order to promote flexibility and responsiveness (Jones, 2013:125-127).

A distinction is made between mechanistic and organic structures. Mechanistic structures are appropriate for organisations where people have to behave in predictable, accountable ways (Jones, 2013:132). Mechanistic structures characterise bureaucracies. In contrast, organic structures are designed to promote flexibility and adaptability in dynamic and unpredictable environments (Jones, 2013:132-133). Decision-making authority is decentralised to enhance organisational responsiveness, effectiveness, and efficiency. Organisational culture cultivates personal competence and expertise, teamwork, innovation, and risk taking. Organic structures are designed for organisations that operate in dynamic and complex environments.

Organisational redesign is a transformation process that adjusts the culture and structure of the organisation. Organisational redesign and change are interrelated processes that are applied to the structure and culture of an organisation in order to improve its performance, effectiveness, and efficiency (Jones, 2013:32).

### **Hierarchies of authority and control**

Hierarchical levels of authority, control and governance are designed to support effective communication and decision making in an appropriate and optimal manner (Jones, 2013:143). Key variables involved are the span of control, and the number of levels in an organisation. The aim is always to keep organisational structures as simple as possible. Additional measures to control and govern organisational functions include the use of rules, standard operating procedures, and norms (p.155).

An appropriate organisational structure is one that ensures a division of labour that increases efficiency and effectiveness and increases organisational performance (Jones, 2013:170-193). Typical structures include a functional structure, a divisional structure, a geographic structure, a matrix structure, and a network structure. Structures are evaluated in terms of variables, such as effectiveness of communication and coordination, distribution of decision-making

authority, ability to access resources and expertise from outside the organisation, organisational flexibility and responsiveness.

The informal organisation exists within the formal organisation as informal networks of social relationships (Jones, 2013:162-163). The informal organisation often influences decision making and behaviours in the formal organisation in meaningful ways, either positively or negatively. Informal structures can significantly enhance organisational performance when managed well.

### **Organisational resources**

Organisational resources refer to the material, energy, and information (MEI) required by a system to function properly (Dostal *et al.*, 2005). These MEI resources include all the hardware, software, human talent, and information employed by the organisation to function effectively.

Information resources include a wide spectrum of resources. The information captured within legislation co-defines most aspects of a municipality. Environmental scanning resources provide critical information for both foresight and normal operations. Perhaps the main sources and processors of information are the human actors involved. These actors are discussed first.

Stillman (1996) identifies five influential clusters of individuals within public bureaucracies. These are *political appointees* appointed for a term, *professional careerists* with specialised expertise, the *general civil service* appointed in hierarchical positions, *unionised workers* appointed in terms of contracts and who are politically connected, and *contractual employees* who render specific services for a limited time. These actors co-define the outcomes of an institution. Each of them competes for power, influence, and status in the institution. As political entities, they apply diverse political tactics and strategies, and they use power and influence to achieve different goals (Stillman, 1996; DuBrin, 2016:249). Interaction is characterised by conflict and demonstrations of power.

Material resources refer to the physical infrastructure employed to deliver services and the products associated with service delivery (Dostal *et al.*, 2005). Technological software and hardware have become essential components of the core competencies and infrastructure of organisations (Gouillart & Kelly, 1995:195). The incessant and exponential development of technology continues to influence organisations in fundamental ways (Martin, 2006; Schwab, 2016). Organisations make strategic choices to combine and mobilise core competencies and strategies to gain competitive advantages that may improve their performance within their domains (Jones, 2013:34; Stonehouse & Snowdon, 2007).

### **Governance aspect**

Governance refers to the management and control processes employed to ensure organisational objectives are realised effectively, efficiently, and ethically (Dostal *et al.*, 2005; Schwella, 2015:29). Jones (2013:38-40) proposed a method for measuring organisational effectiveness. This method evaluates the capacity of an organisation to manage its external environment, the effectiveness of the internal processes of the organisation, and the technical efficiency of the processes that convert inputs into desired outputs.

The organisational aspects discussed above are observed within different kinds of governance models. Several prominent government theories and models are discussed next.

## **3.7 Governance theory and models**

The nature of governance systems is a contextual variable that co-defines the adaptive capacity of an institution in a dynamic context (see Section 3.2.5). Several governance theories and models are reviewed below. This review considers the characteristic features, strengths

and weaknesses of each model. Adaptive capacity of the current governance model of the Hessequa municipality is investigated in Chapter 6. The closely related terms of governance and public administration are discussed first. Then the governance models are reviewed.

### 3.7.1 Governance and public administration

Wilson (1887) originally introduced the study of public administration. He offered a classical definition of the research field of (public) administration as the eminently practical science. Wilson (1887:197-222) described administration as government in action, and stated that “[t]he field of administration is a field of business. It is removed from the hurry and strife of politics”. Wilson argued that “administration lies outside the proper sphere of politics. Administrative questions are not political questions. Although politics sets the tasks for administration, it should not be suffered to manipulate its offices”. Wilson stated that public administration is detailed and systematic execution of public law. Every application of general law is an act of administration. Wilson made an important point, namely that administration must always be sensitive to public opinion and intimately connected with the popular thought through elections and constant public counsel.

Lynn *et al.* (2000) define governance as “regimes of laws, administrative rules, judicial rulings, and practices that constrain, prescribe, and enable government activity, where such activity is broadly defined as the production and delivery of publicly supported goods and services”. More recently, Rhodes (2007:5) has defined governance in terms of the following descriptors: “Government and non-government actors acting across blurry boundaries, continuing game-like interactions and transactions between network members that exchange resources to realise shared goals, and self-organising networks that operate in ‘the shadow of the hierarchy’ and autonomy of the state”.

Asaduzzaman and Virtanen (2016:5) argue that the term governance emphasises three important aspects, namely “decentralization, a people-oriented governance system, and enhancement of people’s participation through networking governance”. Other scholars offer definitions that are closely related and mutually reinforcing. For Schwella (2015:1), the concept governance refers to the system of values, policies, and institutions by which a society manages its economic, political, and societal affairs. Governance also refers to the principles of a properly functioning public administration that is characterised by the fair treatment of its citizens and an unambiguous organisation that adheres to the basic principles of the rule of law (Klijn, 2008:507).

According to Stoker (1998), governance refers to the autonomous self-organising network of actors and institutions from public and private organisations, and the power dependence involved in their relationships. Governance observes not only the vagueness of boundaries and responsibilities for issues of concern but also the ability of government to use new methods and actors to steer and guide service delivery. However, the concept remains blurry due to its constantly evolving and radically changing context (Stoker, 1998; Asaduzzaman & Virtanen, 2016:10). Both Klijn (2008) and Rhodes (2007) emphasise the shift away from government and its bureaucratic structures based on formal authority to the informal authority networks of governance networks. Good governance, a contested concept, is associated with ethical, effective and efficient administration in a democratic framework (Schwella, 2015:29; Asaduzzaman & Virtanen, 2016:7).

These descriptions of governance overlap with the description of public administration offered by Stillman (2005:4). Stillman links public administration with the formulation and implementation of public policies and laws, the production of public goods and services, and dealing with human issues within the legislative, judicial, and executive spheres of government.

Schwella (2015:45-59) briefly describes six governance models that have relevance for the SA context. These are the bureaucratic governance model, the new public management (NPM)

governance model, the network governance model, the market governance model, the public value governance model, and the learning governance model. A seventh model, the CAS governance model will also be reviewed.

These models are mere theoretical tools rather than pure reflections of reality (Schwella, 2015:59). Each of these models is reviewed here and the suitability of each model to deal with complexity is discussed. The bureaucratic governance model based on hierarchical coordination is reviewed first.

### 3.7.2 The bureaucratic governance model

The key elements of bureaucratic governance were documented thousands of years ago. Bureaucratic features still characterise numerous current and modern organisations (Lee, 1980:194; Thom, 1981:199; Serpa & Ferreira, 2019). About a century ago, management pioneers, Fayol and Weber, developed classical management principles, concepts and models that are still relevant (Jones, 2013:156; Ionescu, 2016:3). Weber developed an “ideal-type” model of bureaucratic governance as a rational means to control uncertainty by limiting variability (Stillman, 2005:50-53; Serpa & Ferreira, 2019). Fayol, a French industrialist proposed fourteen principles that describe a bureaucratic administration (Rodrigues, 2001). The models of bureaucratic management (or governance) proposed by Fayol and Weber emphasise hierarchical structures of authority, formalised control and responsibility, formalised policies, rules and regulations, hierarchical and formal communication structures, selection, appointment, and promotion of employees based on technical competence and skills. Work is specialised and standardised. Employees commit to the organisation for the longer term. Individual interests are subject to the common good of the organisation. Weber’s ideal-type bureaucratic model, based on bureaucratic authority, emphasises technical knowledge, discipline, order, and efficiency (Serpa & Ferreira, 2019).

The strength of the bureaucratic model is that it is effective when tasks are well defined in a stable and predictable environment (Morgan, 2006:27). It is appropriate when the same product or service is produced with precision and accuracy, and when the human “machine” parts perform as per design. Hierarchical authority, a shared vision, a strong culture, and the use of power and influence are important mechanisms to implement decisions (Pfeffer, 1992:44).

Although the bureaucratic model is geared to order and efficiency it is not always conducive to humane personal relations and it appears to be resistant to creativity and innovation (Thom, 1981:199). Bureaucracies tend to become ineffective when the organisational structures are not maintained and when employees become over-reliant on rules and procedures (Jones, 2013:160-161). Rodrigues (2001:881) argues that most of the principles proposed by Fayol were useful during the industrial society of a century ago. However, the more recent service and knowledge societies need a different set of principles, such as those proposed by Fayol. Mintzberg (1996:80) referred to the bureaucratic model as the machine model and stated:

It offered consistency in policy and reliability in execution. But it lacked flexibility and responsiveness to individual initiative, so now it has fallen out of favour. In one form or another, however, the machine model continues to dominate government.

The bureaucratic model works well in a stable and predictable environment but not under fluid conditions (Kim, 2006:21). It provides limited scope for innovation, and it is regarded as an impediment to successful service delivery (Coats, 2006:4). The poor performance track record of traditional governance and public institutions based on bureaucracies and central authority, and increasing complexity of public problems, stimulated the emergence of alternative models of government and governance (Kamarck, 2007; Kim, 2006). Government had to be reinvented. Some of the prominent and innovative governance models are reviewed next.

### 3.7.3 The new public management governance model

The NPM governance model was developed to address the limitations of the bureaucratic model and to produce a reformed government that works better and costs less than the rigid administrative bureaucracies (Denhardt, 2011:141). The idea was to make public services behave more like private businesses. The explicit aim of NPM theories is to improve the functioning and performance of the existing bureaucracy of public organisations (Klijn, 2008:509). Mintzberg (1996:80) refers to the NPM model as the Performance-Control Model.

Osborne and Gaebler (1992), and Osborne and McLaughlin (2002:9) discuss the operating principles upon which NPM, as a more entrepreneurial form of government, is based. According to these principles, government should be catalytic and should focus on “steering rather than rowing”. Empowered communities should take ownership of public initiatives and the challenges facing them. Government should be competitive and become a mission-driven rather than a rule-driven organisation. Successful government should focus on results and outcomes, not on inputs. Government should be customer-driven, enterprising, decentralised, pro-active (anticipatory), and market-oriented. This essentially means that entrepreneurial government should be both market-oriented and community-oriented. In fact, government should be run like a business (Denhardt, 2011:145) because markets are smart and governments are dumb (Coats, 2006:4). Entrepreneurial public service delivery should therefore be based on managed competition, public choice, market mechanisms, and performance management.

Although the practice of NPM has spread widely, some limitations have been observed and criticisms raised. Dissatisfaction with the limited focus of NPM has increased (Bovaird & Löffler, 2003:315). Mintzberg (1996:81) observes that the performance-control model or NPM, only reinforces the old machine model at the cost of flexibility, creativity, and individual initiative. Even sophisticated public sector organisations cannot adequately address wicked problems through the application of NPM. The conceived role of citizens as members of communities which co-planned, co-designed and co-managed public initiatives was largely ignored or undervalued (Bovaird & Löffler, 2003:315). Coats (2006:5) discusses several weaknesses of NPM, stating that it is not evident that NPM improves service delivery as expected. NPM is focused more on outputs than on outcomes that affect the quality of life of residents. NPM increases transaction costs associated with the negotiation of contracts and service standards.

Over time, an increasing variety of actors, groups, and organisations have become involved in the policy processes of government (Denhardt, 2011:193). Neither the NPM model nor the bureaucratic model could handle the challenges associated with these developments. The resulting complex governance networks require a governance model that is adequate to deal with the complexities involved in these networks. The network governance model addresses the need for a more flexible and participatory kind of interconnected governance (Kim, 2006:20; Denhardt, 2011).

### 3.7.4 The network governance model

The science of networks, which focuses on relationships between entities rather than the entities themselves, can contribute much to our understanding of complex social systems and to our ability to utilise complex networks effectively (Mitchell, 2009:233-239). The Governance-as-Network model is the opposite of the machine model. It is loose instead of tight, free-flowing instead of controlled, interactive instead of sharply segmented (Mintzberg, 1996:80). The network governance model (NGM) employs networks as organising mechanism to coordinate and integrate various autonomous and sovereign government and non-government actors to function as an organisational unit (Kim, 2006:23). According to the NGM, government organisations are regarded as open systems that are interconnected with dynamic environments and external contingencies (Morgan, 2006:37). In this model, a bureaucracy

funds other actors to carry out its tasks (Kamarck, 2007). The role of government has been changing from an original rigid bureaucracy that formulates and implements policy to networks of public and diverse non-public entities that co-produce policy and jointly implement policy (Denhardt, 2011:193). Recently, governments have become more dependent on social actors to achieve their objectives because of the increasing complexity of the challenges they face” (Klijn, 2008:506).

The interaction between the role players involved in policy formulation and implementation becomes more complex as the collaborative networks expand to include new stakeholders, including citizens. Within these networks, the diverse goals of interconnected actors have to be reconciled and managed (Denhardt, 2011:194-196). Therefore, the focus of an NGM is on “the complex interaction process and negotiation in a network of governmental organizations and other organizations, both private and not-for-profit” (Klijn, 2008:508). Another factor contributing to complexity of governance is the nature of the dynamic and unpredictable contextual environment and a globalising world (Jreisat, 2004; Benington & Moore, 2011).

In the NGM, the emphasis is more on the processes and transactions that deliver outcomes rather than on the powerful structures of government. These transactions are based on the principles of mutual interests, mutual benefits, cooperation, trust, and reciprocity (Kim, 2006:22). Governance networks are based on interdependencies and on horizontal rather than vertical relationships between governmental organisations and non-governmental organisations (Klijn, 2008).

Klijn (2008) identifies three types of governance networks, namely policy networks, service delivery and implementation networks, and governing networks. Benington and Moore (2011) define a networked community governance model as a specific type of NGM based on public value theory (Moore, 1995; 2014; Benington & Moore, 2011). (The public value model is reviewed below.) Benington’s model reflects a shift in the centre of gravity of governance away from the state towards civil society, and a consequent loss of control by government (Benington & Moore, 2011:36). The model emphasises the importance of innovative collaboration and co-production of products and services by interconnected stakeholders from both government and non-government organisations.

Kim (2006) discusses some key advantages of NGMs. These include the benefits of flexibility and adaptability of the system, and the benefit of having access to specialisation and experience of participating actors. The fact that NGMs accommodate diverse actors in policy formulation and service delivery renders it more democratic and representative. New resources can be mobilised readily through the involvement of new network participants. NGMs can help governments to address challenges associated with political legitimisation, economic innovation, and social problem-solving (Benington & Moore, 2011:40).

A limitation of NGMs is their instability and volatility which makes it difficult to manage these networks and to maintain clear strategic direction. In addition, it is difficult to allocate accountability to multiple stakeholders within a network (Benington & Moore, 2011).

Whereas networks are employed to regulate and coordinate interdependent actors in the NGM, market mechanisms are used to coordinate actors in terms of the market governance model.

### **3.7.5 The market governance model**

Citizen’s distrust of government and the perception that markets performed much better than government during the last decades of the previous century stimulated interest in the market governance model (MGM) and a simultaneous revolt against bureaucracy (Kamarck, 2002). The MGM assumes “that coordination can be achieved through the ‘invisible hand’ of the self-interest of participants’ in the policy making and implementation process” (Peters, 1998:298).

MGMs revolve around contractual relationships, and price mechanisms are used to mediate these relationships (Powell, 1991).

Markets and governance tend to be entangled with each other as the market is used to pursue the goals of governance (Donahue, 2002:2). The role of government, according to the MGM, is to use its power to create a market that fulfils a public need or purpose, but without employing public funds or public employees in the markets (Kamarck, 2007).

Market governance is furthest removed from bureaucratic governance and much more flexible than bureaucracies (Powell, 1991). Governance by market finds application in domains such as the provision of health care and old age security, childcare, the supply of energy and education services, the dissemination of information, and pollution control. A market-based approach replaces the traditional command-and-control instruments to address public needs. The assumption is that competition in these markets will incentivise better service performance and greater choice (Kamarck, 2007; Schwella, 2015).

An important disadvantage of the MGM is that it lacks the sophistication to deal with the challenges of the current complex context (Benington & Moore, 2011).

### **3.7.6 The collaborative governance model**

Collaborative governance has emerged in response to the increasing complexity and turbulence faced by policymakers (Ansell & Gash, 2008). These authors define the concept of collaborative governance as follows:

A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets. (p. 544)

Ansell and Gash (2008:549) emphasise that “institutionalization of a collective decision-making process is central to collaborative governance”. The term public agency includes public institutions such as bureaucracies and other governmental bodies at local level. The term stakeholder refers to individual citizens, organised groups, public agencies, and non-state stakeholders. Stakeholders are directly engaged in decision making and non-state stakeholders have real responsibility for policy outcomes (Ansell & Gash, 2008:547). However, ultimate authority to decide remains with the public agency.

Ansell and Gash (2008:549-558) propose a model for collaboration that contains fundamental or broad variables. These are starting conditions, institutional design, leadership, and collaborative processes. Starting conditions set the basic levels of trust, conflict, and social capital that become resources or liabilities during collaboration. Starting conditions also address the history of cooperation or conflict among role players. Facilitative leadership is a critical ingredient of collaboration. Institutional design refers to the basic protocols and ground rules for collaboration that legitimise the process and ensure the transparency and fairness of the process. The collaborative process integrates the building of trust, commitment to the process, building a shared understanding, intermediate outcomes, and face-to-face dialogue.

The above definition and statements confirm that the concept of collaborative governance goes beyond and transcends the idea of public-private partnerships and the consultation of communities on policy issues. The public value governance model is discussed next.

### **3.7.7 The public value governance model**

The concept of public value was developed and introduced by Moore (1995). Public value is a multidimensional concept that includes economic value, social and cultural value, political

value, and ecological value. Value is co-produced by interacting stakeholders (Benington & Moore, 2011:45-46).

The purpose of Moore's (1995) book was "to work out a conception of how public managers ... could become more helpful to society in searching out and exploiting opportunities to create public value" (p. 21). To create public value managers must find a way to integrate politics (for legitimacy and support), substance (i.e., the value created in terms of their purpose), and administration (to improve the organisation's capabilities for implementation) (pp. 22-23).

The logic behind the concept of public value was the following (Moore, 2014:465):

If *private* managers were committed to using their imagination and skills to produce *private* value for shareholders using *private* assets, then *public* managers should use their imagination and skills to produce *public* value for citizens using the *public* assets held by democratic governments (italics in original).

Here public assets refer to both public money and the authority of the state.

When the formal mandates of a public manager are not sufficient to realise the desired public value outcomes, it may be necessary for the policymaker and manager to build a network of partners and stakeholders, and to negotiate a coalition for support to achieve their goals (Benington & Moore, 2011:6). A coalition may consist of public, private, voluntary, and informal community stakeholders. The public value governance model aims to improve the efficiency, effectiveness, and responsiveness of government organisations through innovation and creativity. In contrast to the clear separation of, and distinction between the functions of politics and administration according to Wilson (1941:494), the public value model employs the strategic triangle as an integrative framework to create public value. This framework integrates and aligns three processes, namely, defining public value, authorisation, and building operational capacity (Benington & Moore, 2011:4-5). Alignment is achieved through coalition formation, negotiations, and the adjustment of public value outcomes. Like NPM, the public value governance model aims to simulate a more responsive, more innovative, more effective government with the *proviso* that the proper arbiter of public value should be society as a whole (Benington & Moore, 2011:10).

In contrast with the bureaucratic government model and NPM, the public value governance model recognises the current complexity, volatility, and uncertainty in the contextual environment. The public value governance model possesses the flexibility and innovative capacity that render it more adequate – in terms of Ashby's law of requisite variety (Boisot & McKelvey, 2011:279) – to deal with the current wicked (Rittel & Webber, 1973) and adaptive (Heifetz, 1994) challenges. The public value model provides both a paradigm and a framework "to analyse and understand the interconnections, interdependencies and interactions between complex issues, and across multiple boundaries" (Benington & Moore, 2011:15).

A key advantage of the public value model is that it addresses one of the shortcomings of both the bureaucratic and NPM models of governance. Public value is defined in terms of a spectrum of *outcomes* and public satisfaction over the short, medium, and long term rather than *output* in the short term (Benington & Moore, 2011:47-49). In addition, the public value governance model process of deliberative governance ensures that citizens influence the design and delivery of services and that they assist managers to develop targets that relate to outcomes that the public genuinely value (Coats, 2006:6).

The following model, the learning governance model, emphasises the learning process as a strategic organisational process. This model can be combined with any of the models reviewed above.



### 3.7.8 The learning governance model

Individual learning and team learning are essential disciplines practised within learning organisations. Morgan (2006:72) uses the metaphor of the brain to explain the information processing and learning capacities of the organisation. Mitleton-Kelly and Ramalingam (2011) present a theoretical overview of four theories of learning and a complexity perspective of each of these models. The behavioural approaches to OL focus on an incremental process of learning. It involves adjustment of goals, rules, procedures and routines in response to environmental challenges (Mitleton-Kelly & Ramalingam, 2011:353). The experiential learning model of Kolb (1983) belongs to this approach to OL. Cognitive approaches to OL explain the learning process in terms of changes to mental models held in long-term memory and corresponding changes in assumptions, policies, and practices of individuals (p. 355). Social construction approaches conceptualise OL as a continuous process of social construction of shared beliefs and meanings by individual social actors who actively participate and interact in a changing context (p. 357). Action learning models such as those proposed by Revans (1980) and Schwella (2014) belong to this approach to OL. Combined and gestalt approaches to OL synthesise elements from different schools. The influential work of Senge *et al.* (1994) and Senge (2006), integrating the five disciplines of personal mastery, mental models, team-based learning, shared vision, and systems thinking, also belongs to this category.

Mitleton-Kelly and Ramalingam (2011:361) argue that complexity theory provides a bridge between the behavioural, cognitive, social and gestalt approaches. Learning can be described as an emergent phenomenon among interconnected agents that try to maximise their fitness through adaptation to a dynamic fitness landscape representing a space of possibilities. Complexity theory provides a more comprehensive framework to understand the processes of learning and of OL.

Senge (2006:14) defines a learning organisation as an organisation that is continually expanding its capacity to create its future through learning. Schwella (2014) extends this concept to governance institutions and introduces a learning governance model that can benefit these institutions. He argues that effective and ethical governance will benefit from a learning process that captures relevant ideas, information, and knowledge. Such learning, that involves public participation, will improve the effective and efficient making and implementation of policies for service delivery (Schwella, 2014:55). The advantage of learning governance is that learning contributes to the quality and legitimacy of government (p. 84). It benefits democratic governance, effective and ethical policymaking, and service delivery.

Schwella (2014:56) refers to KM and action learning as complementary processes that can enhance OL. KM life cycle models describe the salient aspects of the KM process (Haney *et al.*, 2008:167). The KM process starts with an *initiation* step (i.e., the *creation* or *acquisition* of knowledge by an organisation), followed by a knowledge *refinement* step. The refinement step prepares the relevant knowledge to be entered into the memory of the organisation for later use. Refined knowledge is stored in a *storage facility* consisting of electronic repositories and the minds of individuals and groups or teams. Refined knowledge may also be embedded in internal and external relationships and the business's processes, products and services (Haney *et al.*, 2008:168). Stored knowledge has to be *transferred* or *shared* before it can be *utilised*. Utilisation of knowledge takes place only after it has been interpreted and understood. Application of knowledge takes place through innovation, individual and collective learning, collaborative problem-solving, and other value-adding processes. Knowledge is utilised to *impact on organisational performance*. The processes of OL and KM are interconnected, and the aim of both is to enhance performance. Adaptive capacity of an organisation is also influenced by the KM process described here (see Section 3.2.5 and Chapter 6 for determinants of adaptive capacity).

Organisations can learn through action learning. Learning takes place through an iterative, cyclical process of planning, acting, observing, and reflecting systematically and rigorously. This learning process is a powerful tool to find practical solutions to social problems (Jacobs, 2014:195). Schwella (2015:57) proposes four questions that inform the action learning process. These questions are the following:

- What happened? The answer to this question is a comprehensive and systematic description of events or trends or deviations.
- Why did it happen? The answer to this question results in a diagnostic analysis of cause-and-effect mechanisms.
- What can one learn from this? The learning associated with answering this question stimulates individual and team learning, systemic thinking, and OL.
- How can the learning be applied to improve the organisational system? The answer to this question can be used to enhance institutional capacity building.

The learning governance model emphasises the importance of evidence-based information (Sutcliffe & Court, 2005), knowledge, and learning to inform governance process improvement (Schwella, 2015:58). An advantage of the learning governance model is that it can be used in combination with any of the governance models discussed above (Schwella, 2015:58). A limitation may be that it is only a supporting process within the governance network of interconnected processes rather than a unique governance model.

### 3.7.9 The complex adaptive systems governance model

Complexity theory offers governing actors and leaders a profoundly different way of understanding governance in its contexts of open systems without fixed or simple boundaries. It offers a unique paradigm and perspective that actors can apply to enhance their understanding of the concept of governance, and to improve their capacity to govern (Duit & Galaz, 2008). The application of CAS-models to governance leads to an emphasis on building systems that can rapidly evolve effective adaptive solutions (Anderson, 1999:216). Anderson argues that a CAS perspective allows managers to alter the fitness landscapes for local governing actors, and to reconfigure the organisational architecture to accommodate adaptation.

A CAS perspective can inform governance in various ways (Richardson, 2011). Complexity theory demonstrates that governance processes are not independent, linear, and complicated but rather interdependent, complex, and non-linear. A complexity lens reveals relationships, interaction among non-linear feedback loops, interdependencies and the phenomena of emergence, self-organisation, learning and adaptation in governance systems. A CAS perspective enhances analytical leverage by acknowledging a much greater variety of system behaviours (Duit & Galaz, 2008:312). Richardson (2011:379) adds a few more implications of a CAS perspective. Changes in context may render each management intervention unique. Decision-making benefits from multiple perspectives, opinions, theories, and creativity. Managers' understanding of decision issues will always be bounded and limited as everything is connected to everything else. Therefore, different paradigms and management approaches have to be reconsidered as complex organisations evolve in unpredictable ways. An evolutionary view of human organisations introduces a view of pragmatic learning, for example, through action learning and OL (Richardson, 2011:371).

Room (2011:238-243) distinguishes three roles of the policymaker as actor within a CAS model. The policymaker as *tuner* adjusts system parameters by reference to critical thresholds which correspond to tipping points and phase changes in order to realise certain system objectives. The policymaker as *energiser* stimulates creativity and cultivates novelty in order to drive a community or society as a self-organising system in new directions. The policymaker as *steward* or *umpire* acts as judge and referee in a world pushed far from equilibrium by agile

and creative first movers who employ institutional and technological innovations in pursuit of their aims.

A CAS model of governance suggests a complexity leadership paradigm that frames leadership as a complex interactive dynamic from which adaptive outcomes emerge (Uhl-Bien *et al.*, 2007:298). The role of governance leaders in complex organisations is to “*enable* organizational effectiveness, as opposed to *determining or guiding* effectiveness” (italics in original) (Marion & Uhl-Bien, 2001:389). A CAS governance model requires from leaders to manage dynamic systems and interconnectivity. Leaders create transformational environments and the conditions that enhance innovation and interconnections in dynamic networks. The complexity leadership framework identifies three entangled leadership roles, namely, adaptive leadership, administrative leadership, and enabling leadership (Uhl-Bien *et al.*, 2007:298). Complexity leaders integrate and reconcile the rigid administrative bureaucratic organisational structures with the dynamics of CAS.

Policy decisions typically concern systems that are complex and open (Banks, 2011:570). Often policy decisions have to address complex adaptive (Heifetz, 1994) and wicked problems (Rittel & Webber, 1973). This means that “policy (must) be adaptive to cope with deep uncertainty and changing circumstance, but the analytic structures used to understand policy problems are context dependent and in need of adaptive response as policy coevolves with the systems being managed” (Banks, 2011:570). In terms of Ashby’s law of requisite variety (Boisot & McKelvey, 2011:279), the CAS governance model should be adequate to deal with complexity.

The CAS governance model appears to be more useful for dealing with the current complex governance challenges than the other governance models discussed above (Drucker, 1998; Marion & Uhl-Bien, 2001; Uhl-Bien *et al.*, 2007). Implementation of the CAS model has to be supplemented by complexity leadership and OL.

### 3.7.10 Observations

This review of governance models clearly demonstrates the evolution of governance contexts from stable and predictable to unstable, unpredictable, and complex. At the same time, governance models have evolved to become more complex. The review also illustrates that rigid and inflexible bureaucratic governance structures are inadequate and inappropriate to address the spectrum of current complex challenges. Several governance models contain novel elements that may enhance the adaptive capacity and the fitness of governance organisations on their fitness landscapes. A CAS governance model that contains these novel elements may be better equipped to deal with complexity. The more complex the governance context becomes, the more inappropriate the bureaucratic governance system becomes.

With reference to governance processes that tend to become more complex, Klijn and Snellen (2009:23) argue that government is not the main role player or actor in current policy theories anymore. Small groups, networks of interconnected actors, factors, systems, and circumstances tend to play dominant roles. The linear cause-effect approach to policy formulation has lost much of its validity. More often government-centred approaches to policymaking are being replaced by governance-centred approaches that include civil society in the process. A hierarchical, top-down approach to policymaking is replaced by an interactive, bottom-up and network approach that involves civil society.

## 3.8 Conclusions

Decision issues characterised as simple and even complicated can be aptly defined and precisely structured. Probability relationships are explicit. A competent observer can measure relevant variables and the results of an intervention can be communicated effectively. The scientific method and its paradigms are appropriate in such cases. The inverse applies to

decision issues characterised as complex. Complex decision issues cannot be defined and structured properly. Probabilities of success and failure are unknown and do not add up to 100 per cent, and it is difficult to communicate complex issues effectively. In such cases, a decision approach is required that is adequate to deal with complexity. A key finding, therefore, is that a different paradigm, namely, the complexity paradigm, which differs fundamentally from the mechanistic and linear Newtonian paradigm, is required to deal with complex decision issues.

The logic of mutual and multiple causality, non-linear interaction and feedback loops of complex systems challenges the notion of causality being the causal relationship between independent and dependent system variables in complex systems.

The contextual environment within which governance processes take place has evolved from a relatively stable environment to one that is continually becoming more complex, dynamic, and unpredictable. The nature of the governance models discussed above has moved away from bureaucratic models to flexible and self-organising network governance structures that are much better equipped to function in complex environments. Another trend has been that governance institutions have had to share more power and authority with non-government stakeholders and with citizens. It appears that rigid, bureaucratic government is least able to deal with complexity. In contrast, the public value governance model and the CAS governance model with flexible and networked structures appear to be more suitable for dealing with complexity.

The development of alternative governance structures has resulted in “hollowing out the state” (Rhodes, 2007:6). The state has been hollowed out from below through market mechanisms and networks, and from above through globalisation. It has been hollowed out sideways by agencies and parastatal bodies. As a result, citizens and private institutions have positioned themselves as significant participants in policy formulation and implementation.

The governance models discussed above are only theoretical approximations of a perceived set of realities (Schwella, 2015:59) and not watertight definitions of each. Therefore, in real life, elements of each of the above governance models may be observed in organisations in combination with a dominant governance model.

The evolution of the governance context towards more complexity has stimulated the continual emergence and co-evolution of new administrative concepts and models. This trend is expected to continue. It is concluded that the CAS governance model is more suitable for dealing with the complexity of dynamic, open systems than the other governance models. A CAS perspective on governance permits understanding and insight that the other models cannot provide.

This concludes the three introductory chapters. The next four chapters address the four research sub-questions. The nature of the context within which the Hessequa municipality is embedded is evaluated first in terms of different perspectives.

## CHAPTER 4 FEATURES OF THE MUNICIPAL CONTEXT

The often-observed pattern of small, isolated islands of excellence and refinement in a large sea of deprivation and misery is a familiar feature within less developed communities (Rihani, 2002:209).

The world is fast changing, hyper-connected, ever more complex and becoming more fragmented (Schwab, 2016:103).

### 4.1 Introduction

This chapter explains the relevance and importance of the notion of context for municipal decision making (Patton, 2002:59; Byrne, 2009:101). In addition, it locates this study in practical terms within a specific context so that the reader can make sense of the results of the study (Bazeley, 2013:375). Nutt (2010a:588) asserts that “[t]o study a decision-making process, decision maker-related factors, the context, the history of the firm, and many other influences must be included”. This contextual review reflects the complex completeness of the municipality’s context and its multidimensionality and should not reduce the understanding of it to that of an impoverished, fragmented and unidimensional perspective (Morin, 2008:46). A sufficiently detailed description of the internal and external contexts of the municipality may provide particularly helpful insights into the other research questions (Bailey, 2007:138).

Gaus (1947:6) makes the point that the study of public administration must include its ecology which deals with all the inter-relationships of living organisms and their environment. Governance does not take place in a vacuum but is deeply intertwined with the critical dilemmas confronting an entire society (Stillman, 2005:1). Public organisations are open systems that are exposed to environmental forces that can either harm or benefit the organisation (Meier & O’Toole, 2008:931; Rainey, 2009:89). Against this background, this chapter addresses the first research sub-question:

*What are the main features of the current context within which the municipality takes decisions?*

The corresponding research objective related to this question is to identify the main features of the internal and external context within which the municipality takes decisions. What follows is not a comprehensive analysis of the municipal context. Only some of the salient aspects are investigated from multiple complementary perspectives.

The researcher assumes that the Hessequa municipality is an open system that interacts with its context (COGTA, 2009b:26; Rhodes *et al.*, 2011; Morçöl, 2012:55). The boundaries between the organisation and environment are arbitrary as everything is connected to everything else from a complexity perspective (Morgan, 2006:208; Richardson *et al.*, 2007:26-27). Establishing provisional boundaries around the Hessequa municipality is for the purpose of sense-making and for convenience only. The notion of context as defined in Chapter 3 is adopted for the purposes of this chapter. The terms environment and context are used interchangeably.

The researcher acknowledges that the observations below reflect the self-identity of the observer, personal biases, and his preference for the application of certain observational lenses (Morgan, 2006:248-249).

This chapter consists of four main parts. First, six complementary frameworks are applied to observe the external municipal environment from different perspectives: a PESTLE analysis, a CLA, a systems perspective, a CAS perspective, a temporal perspective, and an integral perspective. The integral perspective is used as a meta-framework to integrate all the other perspectives. The first part is based on a review of available literature and municipal documents.

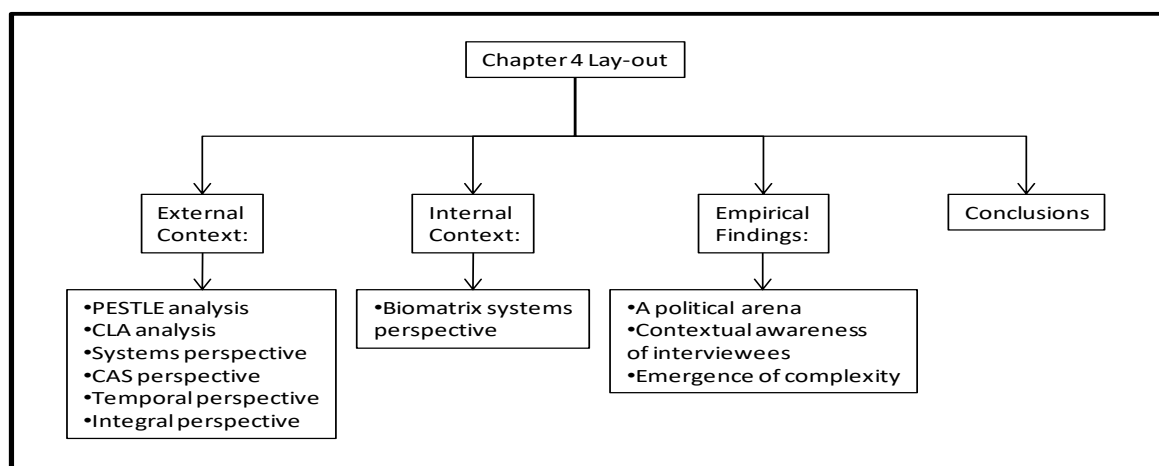
Second, the internal environment of the municipality is discussed in terms of a Biomatrix systems perspective. The second part is primarily based on documentary data about the municipality.

Third, empirical findings regarding the municipal context and the decision makers are presented in terms of three main themes. The third part is primarily based on data from depth interviews, focus groups and documents (Mahood *et al.*, 2014:222).

Fourth, the chapter concludes with important findings.

The breadth and depth of this contextual analysis is limited to its essential aspects. The full review of the external context is attached as Appendix L.

The layout of the chapter is captured in Figure 4.1.



**Figure 4-1 Layout of Chapter 4**

The following section contains relevant background information for each analytical perspective and the key findings on each perspective.

## 4.2 The external context of the Hessequa municipality

The unit of analysis is the external context of the municipality. A principal requirement of a complexity-based epistemology is the exploration of multiple complementary perspectives to capture the inherent intricacies of complex systems (Richardson *et al.*, 2007:30-32). By considering different perspectives of the context a richer appreciation of the situation will be developed, and this will inform better decision making (Richardson *et al.*, 2007:30-31). This section illustrates how different perspectives reveal diverse but interrelated and complementary aspects of the context. Each perspective is limited to essential aspects only. A PESTLE framework is applied first.

### 4.2.1 A PESTLE analysis

The PESTLE perspective is applied to a hierarchy of nested contexts surrounding the Hessequa municipality. In this review the hierarchy expands outwards from the local or 'internal context' of the municipality itself. The hierarchy spans the local, provincial, national, continental, global and even solar boundaries. Normally, the PESTLE analysis starts with a global perspective and then moves towards a local perspective. The order is reversed here to emphasise the importance of certain variables affecting the local context.

This PESTLE analysis is focused on different dimensions of the hierarchically structured external environment as indicated in Table 4.1. Cells marked with an 'X' indicate which contextual dimensions may influence municipal decision making to some extent. These cells are discussed below. Empty cells signify small potential influences and are ignored.

Detailed PESTLE analyses of the SA and global contexts have been performed by Roux and Haldenwang (2016) and Botha (2015).

**Table 4-1 Dimensions of the hierarchically constructed contextual environment**

	Political dimension	Economic dimension	Social dimension	Technological dimension	Legal dimension	Environmental dimension
<b>Local</b>	X	X	X	X	X	X
<b>Provincial</b>	X	X	X	X	X	X
<b>National</b>	X	X	X	X	X	X
<b>Continental</b>	X	X	X	X		X
<b>Global</b>	X	X	X	X		X
<b>Solar</b>						X

#### **4.2.1.1 The political dimension**

The political dimension addresses power relations among actors in the contextual environment. In the Hessequa municipal area, the political arena is dominated by the DA and the ANC. Minority parties have influenced local politics through alliances with both the DA and the ANC until 2021. The manifestos of the DA (2021) and the ANC (2019) contain the values, vision, and strategies of each party to build a better SA. The political aims of the national ANC government and provincial DA government are contained in legislation that applies to the municipality. Traditional leaders will enter the political domain soon when the Traditional and Khoi-San Leadership Act 3 of 2019 is implemented (RSA, 2019b).

The alliance between the ANC, the South African Communist Party (SACP) and the Congress of South African Trade Unions (Cosatu) has been at the centre of political power in the New South Africa (Plaut & Holden, 2012:xi). Under the political leadership of ANC President Jacob Zuma, several constitutionally enshrined institutions were seriously compromised by state capture (Basson & Du Toit, 2017; Jonas, 2019). Poor and corrupt political leadership in all three spheres of government has been contributing largely to the three great evils of poverty, unemployment, and inequality in SA (Roodt & Retief, 2017:82). "Local government is characterised by accountability and service delivery failures, poor governance, weak institutional capacity, and instability" (AG, 2021).

Du Toit and Sithole (2016) and Schwella (2015) provide a comprehensive overview of SA's current political context. The Fragile States Index ranks 178 countries in terms of twelve social, economic, and political pressures that affect state stability, fragility, vulnerability, and the capacity of a state to manage those pressures (Messner, 2020:39). Most of Africa and the SADC countries are in a very critical condition (Messner, 2020:6-7). SA is ranked in position 85 in a category defined as elevated warning, together with Russia, Brazil, and India. Unfortunately, SA is also among a group of countries identified as long-term most worsened (p. 11) when their performance since 2010 is considered. SA runs the risk of becoming a failed

state if this trend continues. SA's position on the Ibrahim Index of African Governance (2020) has deteriorated since 2015.

Continental and global politics and power are not on the radar of decision makers at Hessequa municipality. However, the powerful effects of globalisation are experienced locally (Friedman, 2006; Schwab, 2016; DTI, 2018). Specific implications of globalisation for SA are discussed by Du Toit and Sithole (2016).

One of the aims of the NDP is to reposition SA as a powerhouse in Africa, and in the world, through strategic alliances with the BRICS (Brazil, Russia, India, China, South Africa) trade bloc and SADC (NPC, 2012: Chapter 7). Agreements among the BRICS trade bloc members and numerous agreements between the SA government and foreign countries do have direct effects at a local level (Carmody, 2013). The rise of the BRICS power bloc is reshaping Africa's development, governance, and geopolitical and geo-economic relations.

The New Partnership for Africa's Development (NEPAD) is a self-empowerment and novel development strategy crafted by Africans for Africa (Akinola & Ndawonde, 2016:38-39). It aims to harness Africa's enormous natural resources and human talent for economic prosperity, social development, peace, and prominence in the global theatre.

Four decades ago, Naisbitt (1982) and Naisbitt and Bisesi (1983) observed several megatrends. Centralised hierarchical structures are being replaced by decentralised, network governance systems that are better positioned to deal with accelerating change. They also saw a trend from representative toward participatory democracy where people demand a role in decisions that affect their lives. These megatrends continue today.

Empirical data confirms that decision makers at Hessequa municipality only consider national and provincial politics during their decision processes and not continental and global politics.

#### **4.2.1.2 The economic dimension**

The economic dimension addresses markets of goods and services. It deals with economic growth, inflation, interest rates, employment, imports and exports, and related matters (Dornbusch & Fischer, 1987). The Hessequa economy is among the worst-performing municipalities in the Western Cape (Hessequa municipality, 2021a). The average annual economic growth rate of just more than one per cent since the year 2000 is among the lowest in the Western Cape and below the local population growth rate of about 1,8 per cent per year. The tertiary sector contributes two-thirds of the local gross domestic product (GDP) and is growing faster than the primary and secondary sectors. The primary sector is small but labour intensive (Western Cape Government, 2020c:16). The informal sector functions as an important provider of self-employment opportunities. Economic development in the area is constrained by low skills levels, long distances to markets for local products and the high costs of electricity, and municipal red-tape (Hessequa municipality, 2016:56-64). The three most serious risks for the area are the Covid-19 pandemic, low economic growth rates, and increasing pressure on household income.

The GDP growth rate trended downwards since 2011 to become negative in 2019. The Covid-19 pandemic has eroded much of the economic progress made between 2014 and 2018 (Western Cape Government, 2020b:486). The local economy is characterised by low growth, income inequality, crime, drug abuse, unemployment, and a high percentage of indigent households receiving free municipal services. About 38 per cent of all employed people occupy informal positions in the Hessequa area and only about one-fifth of all employees are skilled (Western Cape Government, 2020b:487, 489). The municipality experiences serious pressure on its sources of income while costs escalate. Economic infrastructure in the area is in a relatively good condition and service delivery is of a high standard. The ten-year financial plan protects the longer-term financial viability of the municipality (Hessequa municipality, 2021a).



The strategic objectives of the Hessequa municipality and the Western Cape Government for socio-economic development are aligned with the seventeen Sustainable Development Goals (SDGs) of the United Nations (2015), the seven aspirations of the Africa Agenda 2063 (African Union Commission, 2015; NEPAD, 2021), the policy frameworks of the NDP (NPC, 2012), and the South African Economic Reconstruction and Recovery Plan (RSA, 2020; Western Cape Government, 2020a; 2020b).

During the past few years, the local, provincial, and national economies were in a recession, weakened by Eskom's load-shedding, national credit rating downgrades, service delivery protests, severe droughts, fluctuating exchange rates and a decline in business and consumer confidence (Western Cape Government, 2020b). The national and provincial economies have been burdened by the wicked problems of poverty, inequality, unemployment, crime, and low economic growth rates (NPC, 2012; Roux, 2016; Western Cape Government, 2020a). The Western Cape economy is expected to grow by around one per cent during the next few years. Unemployment in general is high. More than half of the youthful population is unemployed.

The Covid-19 pandemic created "a multi-layered crisis comprising a health shock, domestic economic disruptions, domestic economic disruptions, plummeting external demand, capital flow reversals, and declines in commodity prices" (Stats SA, 2020; Western Cape Government, 2020a:4-5). The Western Cape has an open economy and is vulnerable to external shocks. The national GDP dropped just over 16 per cent between the first and second quarters of 2020 as a result of the Covid-19 pandemic (Stats SA, 2020). This is the biggest fall in GDP since 1960.

Important economic variables at a national level are consumer price inflation (CPI), GDP growth rates, employment rates, business confidence, interest rates and Gini coefficients. The NPC (2012) and Roux (2016) provide a comprehensive overview of the SA and global economic context.

Aspects of the SADC economy, and the African and global economy are discussed in Appendix L. Global economic variables that affect local municipal communities directly include foreign exchange rates, crude oil prices, global economic cycles, trade agreements, tourist visits, imports and exports of commodities, international prices of commodities and food, tariffs and quotas (Du Plessis, 1987; Roux, 2016).

#### **4.2.1.3 The social dimension**

The social dimension addresses various aspects, such as socio-politics, demographics, migration, education and health, poverty, urbanisation, safety and security, and human development.

A report compiled by the Western Cape Government (2020c) on the socio-economic profile of the Hessequa municipality shows the following. The population of about 52 000 people shows a small negative growth rate that is expected to continue. Unlike the other age groups the population size of people aged 65 years and older is increasing, and the total dependency ratio of 60 per cent is expected to increase. The male-to-female ratio is 89 males per 100 females. About 78 per cent of the population is urbanised. The current household size of 3,4 people per household continues to decrease. Population density is below ten persons per square kilometre. Although the matric pass rate is above 80 per cent the learner retention rate is below 70 per cent. HIV/AIDS and tuberculosis pose health risks to communities. Good standards of child health and maternal health are maintained but a teenage pregnancy rate of 20 per cent is a cause of concern.

In 2018 the per capita GDP of R41 000 in Hessequa was lower than the average figure for the Garden Route District Municipality and the Western Cape. The local Gini coefficient of 0,56 was the lowest in the Garden Route area (Western Cape Government, 2020c). Hessequa's

Human Development Index (HDI) trends upwards and has exceeded the HDI of all the other local municipalities in the region. More than 90 per cent of the local households, receive basic services and live in formal housing. Apart from drug-related offences, the incidence of all other categories of crimes and offences follow a downward trend in Hessequa. Safety and security statistics of the Hessequa municipality are more favourable than those of the district municipality and much more favourable than those of the Western Cape.

The Western Cape Government (2020a) provided an overview of the social dimension of the province. About 12 per cent of the SA population resided in the Western Cape where about seven per cent of the population was 65 years and older and 24 per cent was younger than 15 years. Life expectancy at birth was 68 years. The declining provincial fertility rate of 2,0 children per woman was below the national figure of 2,3 children per woman. In-migration of working-age people as the primary driver of population growth in the province tended to lower the dependency ratio. Despite a deteriorating Gini coefficient, the provincial HDI had been increasing until 2019. It was expected that the Covid-19 pandemic would impact negatively on the HDI. In 2019, more than 99 per cent of provincial households had access to clean water, 93 per cent had access to electricity, and 92 per cent had access to sanitation. Unfortunately, Cape Town and neighbouring areas were known for high rates of violent crime and drug abuse. The city was experiencing rapid urbanisation. The Western Cape Government aimed to create a safe, attractive and enabling business environment for private investors and for foreign direct investors (Western Cape Government, 2020a). The relatively good performance of the Western Cape Government and the education sector attracted an inflow of migrants.

The local, regional, and provincial social contexts were discussed in detail by the Western Cape Government (2020a; 2020b; 2020c). The social contexts of SA, Africa and the world were discussed in the NDP (NPC, 2012) and by Haldenwang *et al.* (2016). The social environment had a direct influence on municipal decision making.

The detailed studies of the SA social context by the NPC (2011; 2012) and Haldenwang *et al.* (2016) reflected extreme inequality, poverty, unemployment and unemployability of large sections of the population, especially the youth. In stark contrast, the Institute of Race Relations (IRR) (2017) reported that twenty-six national socio-economic variables had shown very favourable trends from 1994 to 2016. The NPC (2011) identified the following additional challenges, namely substandard school education for black South Africans, inadequate public infrastructure, unsustainability of the resource-intensive nature of economic growth, and separate spatial development. Other challenges included the ailing public health system, underperforming public services, corruption, and racism. The same kind of economic and social challenges and risks spanned all municipal, provincial, and national boundaries (Plaut & Holden, 2012; Basson & Du Toit, 2017; Jonas, 2019). The social unrest in Kwazulu-Natal during July 2021 illustrated the critical and fragile nature of the socio-economic and political SA context (BER, 2021; 2021b).

Global drivers of socio-economic and demographic change include the following (WEF, 2016:6): Changing work environments, flexible work arrangements, the rise of the middle class in emerging economies, climate change, a transition to a greener economy, rising geopolitical volatility, longevity and ageing societies, youthful populations in emerging markets, gender equality, the rising economic power of women, and urbanisation. Migration, and especially forced migration, is on the rise due to humanity's impact on the natural environment (McKinsey Global Institute, 2019). The effect of these drivers is observed globally and locally.

Global demographic megatrends of population growth, population ageing, population migration and urbanisation are reviewed in Appendix L (UN, 2019b: iii). The effects of these global trends are observed locally.

#### **4.2.1.4 The technological dimension**

The technological dimension addresses technological developments and trends in different technological domains and the associated impacts on society. Technological development is pervasive. The municipality and its communities are embedded in a global information society in which information is mass-produced and disseminated instantly (Naisbitt, 1982; Naisbitt & Bisesi, 1983:69-70). The effects and impacts of technological innovation and the convergence of technologies span all hierarchical and geographical boundaries (Friedman, 2006; Schwab, 2016). Friedman (2006:x) explains how new technology allowed several billion people from China, India, and the former Soviet Empire to compete and to collaborate in the virtual job market (Friedman, 2006:202-203). A more recent review of the impacts of 4IR is provided by Schwab (2016).

Drivers of technological change include mobile internet and cloud technology, advances in computing power and big data, new energy supplies and energy technologies, the internet of things (IoT), crowdsourcing, advanced robotics, autonomous transport, artificial intelligence, machine learning, advanced manufacturing, three-dimensional printing, advanced materials, biotechnology, and genomics (WEF, 2016:7). Contrary to the common-sense, intuitive linear view, the rate of technological innovation and change is exponential. It is leading to the singularity – technological change so rapid and profound it represents a rupture in the fabric of human history (Kurzweil, 2001). The singularity is explained by Martin (2006:239-242).

Technological innovation, as foreseen by Kurzweil (2001) and Martin (2006), is currently taking shape in the form of 4IR (Schwab, 2016). The 4IR and IoT may fundamentally change the way humans live, work and relate to one another. This technological revolution will rely on highly skilled human resources and will have a profound influence on the nature of work. Technological development is expected to increase inequality between low-skilled labourers and members of innovation-driven technological ecosystems (Schwab, 2016; McKinsey Global Institute, 2019).

A review of the technological landscape from an SA perspective, with specific reference to enabling and new technologies, is provided by Butler (2016).

#### **4.2.1.5 The legal dimension**

The legal dimension considers legal frameworks, legislation, regulations, circulars and reporting demands that are relevant for decision-makers. Often, the reporting demands from these different documents contradict one another. SA is a constitutional democracy in terms of its constitution (RSA, 1996). Hessequa municipality is a local municipality within the sphere of local governance (Schwella, 2015). The Constitution of the Republic of South Africa (hereinafter 'the Constitution') is the supreme law of the Republic of South Africa (RSA, 1996). All other laws are derived from the Constitution and reflect the values stated in Chapter 10, the founding provisions, and the Bill of Rights therein. For illustrative purposes only a few important acts that co-define the legal dimension are discussed below.

Constitutional values and performance criteria inform the following acts that apply to the municipality:

The **Local Government: Municipal Structures Act 117 of 1998** (RSA, 1998b), hereinafter referred to as the Structures Act, provides the structural framework within which a municipal entity must perform its functions.

The **White Paper on Local Government** (RSA, 1998a:66) provides the context and framework for the municipal acts that would follow. It addresses the transformation of local governance after the dawn of democracy in SA and lays the foundation for developmental and

cooperative governance. It addresses institutional, political, administrative, and financial systems relating to municipal governance.

The **Local Government: Municipal Systems Act 32 of 2000** (RSA, 2000), hereinafter referred to as the Systems Act, contains numerous stipulations that co-define municipal decision-making processes and structures, and its efficient operation. This act establishes a framework for planning, performance-management systems, effective use of resources, and organisational change in a business context (Main, 2020:13).

The **Local Government: Municipal Systems Amendment Act 7 of 2011** (RSA, 2011) aims to professionalise local government. The act requires that the administration of municipalities is staffed by persons with appropriate skills and competencies that are adequate for the appointments.

The **Local Government: Municipal Finance Management Act 56 of 2003** (hereinafter called the MFMA) aims to secure sound and sustainable management of the financial affairs of municipalities and to establish treasury norms and standards for the local sphere of government (RSA, 2003:2). This act defines in relatively detailed terms the legal framework, governance structures and processes associated with municipal financial and fiscal affairs.

The **Public Audit Act 25 of 2004** (RSA, 2004), and the amended act, the **Public Audit Amendment Act 5 of 2018** (RSA, 2018b), establish and assign auditing functions to the AG who is appointed in terms of Chapter 9 of the Constitution.

The **Intergovernmental Relations Framework Act 13 of 2005** (RSA, 2005) provides a framework for the three spheres of government to facilitate intergovernmental coordination of the implementation of policy and legislation. This act facilitates coherent governance, effective provision of services, and the realisation of national priorities.

These laws are entangled with one another and are derived from the Constitution and the White Paper. They constitute the basis of local government and governance in SA. Important aspects of these laws are covered in more detail in Appendix L.

Government is considering new legislation that may have implications for municipalities. A National Water Security Framework (NWSF) for SA is being prepared to ensure that existing legislation is implemented properly. One of the recommendations is to align local government legislation with national legislation in order to ensure freshwater security in the long term (NPC, 2020:35). The Carbon Tax Act 15 of 2019 (RSA, 2019a) imposes a carbon tax on the carbon dioxide equivalent of greenhouse gas (GHG) emissions resulting from fuel combustion and industrial processes. The aim is to limit GHG emissions into the atmosphere that cause global warming. On 10 June 2021, President Ramaphosa announced that the Electricity Regulation Act 4 of 2006 will be amended to increase the licence-free threshold for embedded generation from 1 MW to 100 MW (Lilley, 2021). This will allow investors to install up to 100 MW generation capacity and to connect these power plants with the national power grid. Municipalities may benefit from this initiative. Suggested changes to section 25 of the Constitution in the Constitution Eighteenth Amendment Bill may result in dramatic changes in ownership of land, expropriation of land without compensation, and changes in asset values that may affect municipal income (Jeffery, 2021; RSA, 2021).

SA legislation that informs local government provides a comprehensive definition of an integrated governance system in terms of the seven aspects of the Biomatrix systems framework. These aspects are addressed in Appendix L.

#### 4.2.1.6 *The environmental dimension*

The environmental dimension focuses primarily on sustainable human development and the interaction between human activity and planetary ecosystems (Roux & Hichert, 2016). Hessequa municipality is situated in a pristine area in the southern Cape on the Garden Route (Hessequa municipality, 2021a). The region has limited supplies of fresh water and is exposed to frequent and severe droughts, field fires, and storms. Agricultural practice is the most common form of land use in the area. The availability of mineral resources is very limited, but the Western Cape area has sufficient supplies of wind and solar power potential to justify viable investments in renewable energy installations (International Trade Administration, 2021; Knorr *et al.*, 2016). Limited volumes of biomass are available. Although the hydro-electricity potential is low, the potential wave energy in the ocean is unlimited. Small communities at Still Bay, Melkhoutfontein and Witsand depend on fishing for a living.

Local and global ecosystems are being affected by the escalating effects of climate change and global warming (IPCC, 2018). The global ecological footprint of humanity, biodiversity loss, and the demand for fresh water supplies are increasing rapidly (WWF & African Development Bank, 2012). Climate change is causing rising land surface temperatures, lower precipitation rates, and increasing sea levels. A comprehensive overview of the natural environmental context and the impacts of global warming and climate change appears in Du Toit *et al.* (2016).

The era of the Anthropocene or Human Age marks the first time in the history of the world that human activities are the primary force in shaping all life-sustaining systems on earth (Schwab, 2016:103). Increasing levels of global resource-intensive economic activity are having severe impacts on the natural environment, industries, and on people (Gore, 2006; Martin, 2006; Stern, 2006; Laszlo, 2010; McKinsey Global Institute, 2019). Stern (2006:vi) concludes that climate change is a serious global threat, and its demands an urgent global response. The IPCC warns that “rapid, far-reaching and unprecedented changes in all aspects of society” would be required to limit further global warming to 1,5 degrees centigrade (IPCC, 2018). The IPCC also warns that many of the impacts and implications of global warming “fall disproportionately on the poor and vulnerable”. Climate change is already affecting the availability, quality, and quantity of fresh water for human consumption in all spheres of society (UNESCO, 2020). Water-related climate change impacts on sub-Saharan Africa and southern Africa are already acute. A recent decrease in rainfall in southern Africa and a rapid increase in the African population are posing serious challenges for meeting the development targets of the 2030 Agenda (UNESCO, 2020: 132). Low levels of adaptive capacity, especially in agriculture, as well as complex socio-economic and political dynamics leave the African people highly exposed to the impacts of climate change and water shortages.

“Climate change is the greatest market failure the world has ever seen, and it interacts with other market imperfections” (Stern, 2006: viii). Swilling and Annecke (2012:74-75) argue that resource decoupling and impact decoupling are prerequisites for a more sustainable global society.

Earth Overshoot Day (EOD) is an estimate of “the date when humanity’s demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year” (Global Footprint Network, 2020; 2021; 2022). EOD for 2020 was on August 22. EOD for 2021 is on 29 July and on July 28 for 2022. The ecological footprint in terms of the number of earths that are required to satisfy humanity’s need for resources has increased from 1,0 in 1970 to 1,69 in 2016 (Wackernagel & Beyers, 2019). The gap between the biocapacity of the planet and the ecological footprint of humanity continues to increase. The net effect is an increase in the ecological deficit.

#### 4.2.1.7 Strengths and limitations of a PESTLE analysis

A PESTLE analysis provides a convenient framework to examine the contextual environment in terms of six separate domains. The analysis provides an informative presentation of global and local events, trends, and patterns within different domains without investigating the underlying driving forces or the causal links at work within or among these domains. A PESTLE analysis provides decision makers with *information* and *knowledge* about the contextual environment without an accompanying *insight* or *understanding* about the dynamic context. This kind of analysis does not expose leverage points or causal factors in the contextual arena. A PESTLE analysis provides early warning about numerous risks and threats for humanity to address.

A key disadvantage of a PESTLE analysis is that it evaluates events and trends in each domain without an analysis of the interaction among these domains. The PESTLE framework is analytical in nature as it only observes the “flatlands” of reality and not its deeper levels (Slaughter, 1998). The analysis does not normally consider the underlying mental and cultural processes that inform the systems that co-produce the events and trends in each PESTLE domain.

A CLA complements the PESTLE framework and addresses some of its limitations. The CLA framework is discussed next.

#### 4.2.2 A causal layered analysis of contextual aspects

The main purpose of this section is to illustrate how a multilevel perspective can reveal important aspects of a contextual issue that are not observed by means of a PESTLE analysis. The primary focus of the PESTLE analysis, above, is mainly on the ‘surface level’ and to a lesser extent on the ‘systems level’. The CLA delves deeper. It aims to discern what deeper invisible mental positions are shaping the systems that co-produce the effects at the surface level.

This section constitutes a summary of the more detailed CLA analysis that appears in Appendix L. The CLA method is also described in more detail in Appendix L.

A close study of the world should include a careful examination of the ways of thinking that shape it. Collectively held ideas about the world as axioms, metaphors, images, or taken-for-granted assumptions are enormously powerful and inform systems in the real world (Chapman, 1991:263; Sinclair, 2012:5). The most powerful levers to effect systemic change are hidden at this invisible level of mental constructs (Meadows, 1999).

A CLA exposes the underlying assumptions, axioms, myths, metaphors, and worldviews that inform the systems that produce visible results and effects at a surface level. A CLA can be performed by means of the “five why’s” technique (Senge *et al.*, 1994:108), the iceberg model (Academy for Systems Change, 2021), by means of the CLA method (Inayatullah, 1998; 2004; 2014) or by means of structural mapping (Slaughter, 2002:494). CLA captures the logic of all these approaches (Inayatullah, 2014:26). The theoretical frameworks to understand the causality between the different levels of understanding are provided by Meadows (1999), Inayatullah (2004; 2014), Cook-Greuter (2005; 2013), and Beck and Cowan (2006).

The CLA will be applied to the wicked problem of unemployment first, and then to the local impact of climate change. In each case the issues, observations, events, and trends at a visible surface level are addressed firstly. The systemic factors that co-produce the visible effects are discussed secondly. The worldviews or paradigms that influence or co-produce the system(s) are reviewed thirdly. The corresponding myths or metaphors are identified fourthly.

## Unemployment:

At the *surface level*, unemployment is a great cause of concern, especially youth unemployment (Stats SA, 2021). Unemployment is identified as a national challenge and crisis that is getting worse (NPC, 2012; Roux, 2016; Jonas, 2019). During the first quarter of 2021 the national unemployment rate was 32,6 per cent, the youth unemployment rate was 46,3 per cent for those aged 15 to 34 years, and 63,3 per cent for those aged 15 to 24 years (Stats SA, 2020b).

At the *systems level*, numerous systemic factors contribute to unemployment (NPC, 2012; Plaut & Holden, 2012; Roux 2016; DTI, 2018; Jonas, 2019; Duvenhage, 2020). Unemployment is linked to low economic growth rates, poverty, inequality of ownership of productive assets, and economic exclusion of certain groups. Structural unemployment in SA is associated with an unfavourable gap between the supply of and demand for skills, expertise, and education. The primary sector of the economy has been shedding jobs while the tertiary sector has been creating employment for skilled and educated people. The manufacturing sector is underperforming and does not create employment opportunities as expected (DTI, 2018). The net effect is an oversupply of unemployable job seekers. Economic growth is stifled by the effects of state capture, low levels of business confidence, deteriorating international credit ratings, inappropriate legislation, and conflict among the coalition members of the ruling party (Plaut & Holden, 2012; Basson & Du Toit, 2017; Jonas, 2019).

Legislation discourages employers to employ more than the absolute minimum number of employees required. In addition, labour costs increase at a faster rate than labour productivity (Roodt & Retief, 2013). SA has been sliding back on the world competitiveness ranking from position 53 in 2017 to position 62 in 2021 (IMD, 2021). Low interest rates and escalating labour costs have favoured capital-intensive growth in SA rather than labour-intensive growth since the mid-1990s (Roux, 2016).

The education system does not equip matric learners with qualifications and (life) skills that are required in the workplace. The SA education and training system has failed the youth (Jonas, 2019:31). The SA education system is based on an outdated curriculum and does not equip learners with the core work-related skills that will be in demand soon (WEF, 2016). These core skills include cognitive abilities, basic skills, and cross-functional skills, such as social and systems skills, complex problem-solving skills, resource management skills, and technical skills.

The 4IR may have a significant influence on job markets globally and locally. It may throw millions of workers into structural and/or precarious unemployment (Schwab, 2016; WEF, 2016; Vargas & Teixeira, 2018). Unqualified job seekers will be excluded from the 4IR economy. To prevent a worst-case scenario of disruptive technological transformations accompanied by “talent shortages, mass unemployment and growing inequality – reskilling and upskilling of today’s workers will be critical” (WEF, 2016:v).

At the *level of paradigms and worldview*, it may be reasonable to state that a CAS paradigm would probably be more appropriate to analyse the issue of unemployment than the reductionist Newtonian paradigm. The historic *apartheid* paradigm laid the foundations of an unsustainable society and economy. During the *apartheid* era the focus was placed on economic growth and not on economic development. A claim was made that the compromised politico-economical deal of the post-apartheid SA was not sustainable either (Jonas, 2019:1-2). The consensus agreement of 1994 as captured in the Constitution did not reconcile the diverse and opposing interests and worldviews of the mainly white capitalists, organised labour, poor and unemployed people, and the upcoming black elite. These interests and viewpoints are still at loggerheads. Current SA legislation reflects the interests of a free-market economic perspective and capitalism but also socialism. It appears as if an entirely new

paradigm in the SA politico-economical-societal-technological domain is required to inform a new systemic framework that may produce desired outcomes (Swilling & Anneck, 2012:4).

At the *level of metaphor*, unemployment in SA has become “a ticking time bomb” (Roodt & Retief, 2013:180). Poor education and unemployment have transformed the SA youth dividend into a youth burden which may turn into a disaster (Jonas, 2019:196). The worsening socio-economic situation in SA is referred to as the “frog in the pot” and the “slow-puncture” effect: a gradual deterioration in circumstances (Jonas, 2019:3). The 4IR has brought the global economy and global society at a “crossroads” (Vargas & Teixeira, 2018). It has vast potential to improve living conditions, but it holds “lamentable potential risks”. Duvenhage (2020) refers to “South Africa at a tipping point”, namely, a bifurcation point that may end up as “a bad case scenario” equivalent to the “Arab Spring” when he evaluates the socio-political-economical SA context. The ideals of “a rainbow nation” as set out in the NDP (NPC, 2012) are threatened by dark clouds.

### **Impacts of climate change:**

At the *surface level*, the Hessequa area, the Western Cape province and large areas of SA have been experiencing severe droughts, extreme veld fires and frequent freshwater shortages (Dallas & Rivers-Moore, 2014). Local effects of rising sea levels have also been experienced. The increasing trend in the world’s weather-related natural catastrophes (by peril) is a cause of great concern. These events increased from just over 200 in 1980 to 800 in 2018 (UNESCO, 2020:23). The corresponding global effects of climate change on food supplies and freshwater availability, the health of ecosystems, the occurrence of extreme weather events, and the onset of irreversible and rapid climate change effects have been examined by Stern (2006:v), Gore (2006), Laszlo (2009:8-21), Swilling and Anneck (2012) and the IPCC (2013; 2018). Both the Stern review and the IPCC reports confirm that the impact of global climate change is already being experienced at a local level.

At the *systems level*, climate change and global warming are blamed for these local effects (Stern, 2006; Laszlo, 2009; Laszlo, 2010; Slaughter, 2010; IPCC, 2013). All these authors use persuasive scientific evidence to substantiate their claims that anthropogenic substances and processes are major drivers of climate change. Pollution, deforestation, population growth, economic growth, globalisation, and technological development produce increasing volumes of GHG emissions and reduce the planet’s capacity to capture carbon. Gore (2006:249) states that “our new technologies, combined with our numbers, have made us collectively, a force of nature”. Gore concludes that factors such as “the population explosion, the technological revolution, and a willingness to ignore the future consequences of our present actions” (p. 8) contribute to global warming and climate change. Human civilisation is on a collision course with the planet’s ecological systems. A very important yet subtle factor contributing to this crisis is “our fundamental way of thinking about the climate crisis” (p. 254) and a lack of wisdom to deal with modern “technologically enhanced power” (p. 232).

In their report, *Limits to Growth*, Meadows *et al.* (1972) warned about the effects of the overconsumption of earth’s resources. Earth Overshoot Day falls on 28 July 2022 because humanity consumes the equivalent amount of resources that 1,7 planets produce (Global Footprint Network, 2022). The systemic interaction between different sectors and domains are discussed below under the heading ‘A systems perspective’.

It is at the *level of paradigm, worldview, values, ethics, perceptions, motivations, and consciousness* where the real causes of both unsustainability and sustainability are to be found (Laszlo, 2009:73-90; Slaughter, 2010). Self-centred values and a materialistic consciousness fuelled global economic growth in what was perceived as a vast machine-like universe. The obsolete values that characterise our modern society are based on the “the value of getting”, “the paramount value of money”, “the indiscriminating valuation of technology” to solve all



kinds of problems, “the worship of the latest and newest”, and “the fetish of efficiency” (Laszlo, 2009:46-47). The outdated Newtonian paradigm upon which modern society has been built has to be replaced by a theory of CAS as a basis for sustainable development (Swilling & Annecke, 2012:3-4).

Future sustainability will be based on holistic and systemic thinking that encompasses ecological sustainability, prosperity, and cross-cultural understanding. Wilber (2007) and Beck and Cowan (2006) refer to a corresponding consciousness, called integral and holistic thinking. A future SA should be built upon the values stated in the NDP (NPC, 2012) and the Constitution.

*At the level of myth and metaphor*, a few widely shared metaphors and myths very aptly describe the mental models according to which local and global business decisions are taken. Laszlo (2009:48-51) refers to the following myths: The earth is an inexhaustible, infinite source of raw materials. Nature is a giant Newtonian mechanism that can be manipulated at will. Life is a struggle and only the fittest creatures survive. Global markets correct imbalances and injustices through the ‘invisible hand’ of Adam Smith. The more you consume the better you are.

The climate crisis is “a true planetary emergency” (Gore, 2006:10). Martin (2006:294) refers to it as a “perfect storm”. Laszlo, a philosopher, system scientist, and futurist, argues that humanity has “entered a state of global emergency” (Laszlo, 2009:xvii), alternatively “a chaos point” or “a tipping point” (Laszlo, 2010:xxvii-xxviii) as the result of a materialistic, self-centred and unsustainable way of life. Meadows *et al.* (1972) affirm that a sustainable global society must ultimately be founded on a new set of values and goals at individual, national, and world levels. This will “require a Copernican revolution of the mind” (Meadows *et al.*, 1972:195-196). In SA, the metaphor of ‘state capture’ is used to describe the current criminal, unethical, and unconstitutional values and ethics that contribute to an unsustainable society and the deterioration of the environment (Basson & Du Toit, 2017; Jonas, 2019). McCord (1952) believes that “South Africa is a patient that is grievously ill”. However, the ideal of a “rainbow nation” prevails (NPC, 2012).

A more comprehensive CLA of unemployment and the local effects of climate change should also include a review of the horizontal and vertical causal linkages within the CLA framework. This cannot be done here due to space limitations.

### **Advantages and limitations of a causal layered analysis**

A layered contextual analysis offers several advantages. It unpacks the worldviews, discourses, ideologies, myths, and metaphors that co-define the system in focus (Inayatullah, 2004). It allows one to develop a broad and deep understanding of the current reality, and proposed futures. It allows a movement up and down the different layers of analysis. One can integrate analysis and synthesis, and horizontally one can integrate and combine alternative worldviews, systems, and ways of knowing. Scenarios can be developed at each level or across levels in order to develop new insight and understanding. Better policies can be developed for the longer term based on a multilevel, holistic understanding of contextual issues at multiple levels (Inayatullah, 2004:18, 47).

An additional advantage of a layered approach is that vertical movement between various levels and horizontal movement within each level allow the decision maker to develop multiple perspectives of the issue in focus. Different paradigms may correspond with alternative systemic approaches to achieve a specific desired outcome. Problems and aims can be formulated more comprehensively by considering the points of view of different stakeholders. CLA is a useful theory of knowledge to create new, innovative, and novel policies and strategies based on alternative paradigms and assumptions to address challenges of all kinds.

CLA can also be used to evaluate the robustness and expected effectiveness of strategies at each level of analysis (Inayatullah, 2014:26).

CLA has a few limitations (Inayatullah, 2004:41). Practitioners may not have the critical and hermeneutic skills required to explore the deeper levels of the analysis. Empiricists may find it difficult to appreciate the value of worldviews, myths, and metaphors in a CLA and may reject the levels of the analysis.

### 4.2.3 A systems perspective

This section uses several cases to illustrate how a general systems perspective reveals linkages between issues of concern in different PESTLE domains. These linkages would not be observed using a PESTLE perspective and probably not even through a CLA analysis. The following cases are reviewed, namely the Limits to Growth Report (LTGR), Laszlo's "clusters of unsustainabilities", implications of 4IR, global challenges and risks, the water-climate-energy-food-environment nexus, and SDGs. Lastly, a Biomatrix systems perspective is applied to unemployment in SA to illustrate a different kind of systems perspective. These cases illustrate the nature and value of a systems perspective in comparison to a PESTLE perspective.

#### The Limits to Growth Report

The *LTGR* presents an early systems perspective of the effects of human activity on the global ecosystem (Meadows *et al.*, 1972). A quantitative systems dynamics world model was developed "specifically to investigate five major trends of global concern – accelerating industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources, and a deteriorating environment" (Meadows *et al.*, 1972:21). The authors demonstrate the longer-term effects of the dynamic interactions among several physical global variables. They illustrate the simultaneous effect of natural delays in ecological processes, feedback loops, interactivity and causality, and the nature of exponential growth in the longer term. The key message of their study is that exponential population growth and accelerating industrialisation will lead to the catastrophic collapse of various global systems.

Meadows *et al.* (1972:23-24) conclude in the *LTGR* as follows: Continuation of current trends of rapid population growth, accelerating industrialisation, pollution, food production and resource depletion may lead to "a rather sudden and uncontrollable decline in both population and industrial capacity" within the next century. The authors plead for a great transition – a "transition from growth to global equilibrium". The "essential problem ... is exponential growth in a finite and complex system" (p. 145; italics in the original). The authors warn that continuation of this pattern will result in "a disastrous collapse".

Since the publication of the *LTGR*, many scholars shared their concern about the unsustainability of the Anthropocene in terms of a systems understanding. "This pervasive sense of the interconnectedness of the world, and therefore of the necessity for global solutions to problems, seems significant" (Sinclair, 2012:5). Many authors warn that the interconnected mega-problems of the twenty-first century may have catastrophic consequences unless human ingenuity curbs this progression (Gore, 2006; Martin, 2006:30-32; Slaughter, 2010).

#### Laszlo's 'clusters of unsustainabilities'

Laszlo investigated "systemic clusters of unsustainabilities" in the global ecology, economy and society (Laszlo, 2009: 8). Over-exploitation of natural resources, such as fresh water and productive land, pollution, population growth, and the effects of global warming and climate change are all symptoms of an unsustainable global society. Economic decisions are based on short-term benefits without regard for their longer-term implications. Unsustainabilities in society include the rich-poor gap, the breakdown of social structures, poverty, and

unemployment. Laszlo warned that the unexpected acceleration of global trends, and the disregard of feedbacks and cross-impacts among these trends were reducing the time horizon for a global breakdown. The only way to avoid this breakdown is to adopt a holistic, planetary consciousness and a new set of planetary values and ethics.

Laszlo's analysis of the current reality and his recommendations for desired and possible futures are based on a holistic complex systems approach at different causal levels. This approach links human consciousness, values, and ethics to human behaviour in a highly interconnected and sensitive global ecology. A desired future "world of high civilization" should be based on new sets of values and goals, new models of behaviour, and the beneficial application of powerful new technologies (Martin, 2006:493).

## Implications of 4IR

The 4IR provides another example of a global interconnected system with local impacts on all the PESTLE domains (Schwab, 2016). The effects of 4IR are spreading globally at the speed of light through interconnected networks in different dimensions and domains. Rapid and disruptive technological innovations constitute a source of constant surprise and uncertainty. Schwab (2016:8-9) identifies three unique features of this technological revolution, which builds on the digital revolution and interconnected ICT networks:

- **Velocity:** Technological development proceeding fast at an exponential rate.
- **Breadth and depth:** The fusion and interaction of diverse technologies leading to "unprecedented paradigm shifts in the economy, business, society, and individually".
- **Systems impact:** Transformation of entire systems spanning geographical borders, companies, industries, and society.

The implications of 4IR for employment, work force strategies, education, training, and skills development are discussed in a report on the future of jobs (WEF, 2016). Schwab's analysis indicates the systemic impacts of 4IR into the future.

## Global challenges and risks

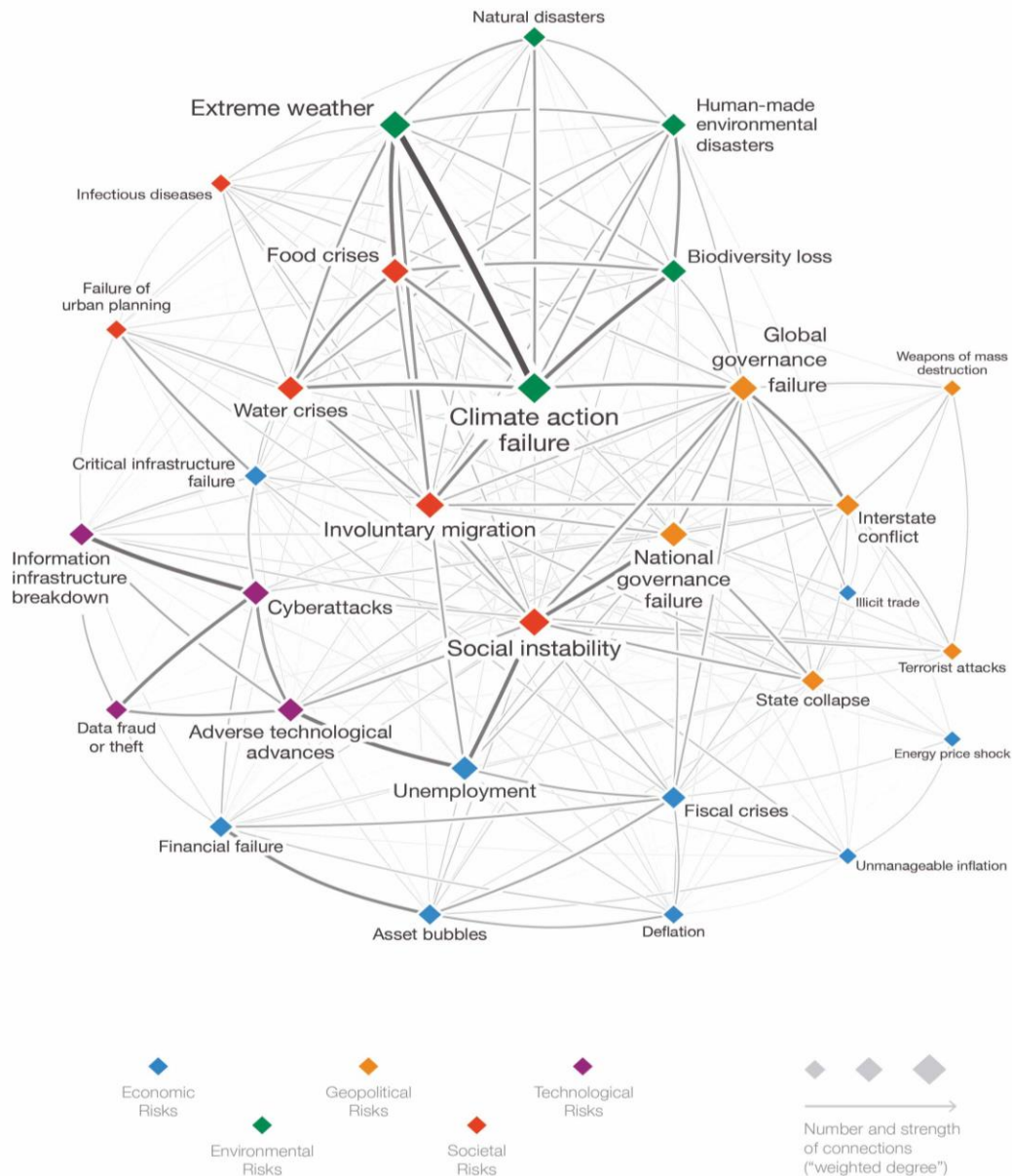
A study of global challenges and risks illustrates the systemic nature of local and global contextual variables. Challenges and risks present decision makers with remarkable opportunities to exploit, and serious threats to address. In *State of the Future* Glenn and Florescu (2017:iv-v) present an overview of fifteen global challenges as a "systemic framework for understanding global change". The challenges are interconnected and interdependent (The Millennium Project, 2020). They are "transnational in nature and transinstitutional in solution" (Glenn & Florescu, 2017:8).

The challenges span all kinds of planetary borders. Each of the challenges has been co-created by human behaviours, human value sets and paradigms. The environmental and socio-economic challenges are the consequences of the way humans think and act. The challenges and associated risks are interlinked through non-linear feedback loops (see Figure 4.2). The systemic interconnectivity among challenges and risks can only be addressed fruitfully through a collaborative and a systems approach by role players from all over the world.

The World Economic Forum (WEF, 2020) reports on the perceived likelihood and impact of global risks (WEF, 2020:86). Geopolitical, economic, societal, technological, and environmental risks are identified. For the first time, the top five risks in terms of likelihood are all environmental risks (WEF, 2020:ii). The systemic links between human activity, global warming, climate change and their effects are discussed in the IPCC reports (2013; 2018).

This list continues with the following risks, namely, massive incidents of data fraud or theft and large-scale cyberattacks (both technological risks), water crises (societal), failure of regional or global governance (geopolitical), and asset bubbles in a major economy (economic). The top five risks in terms of impact are the following (WEF, 2020:ii): Failure of climate-change mitigation and adaptation measures, deployment of weapons of mass destruction, major biodiversity loss and ecosystem collapse, extreme weather events, and water crises due to freshwater shortages. This list continues with more technological, political, economic, environmental and societal risks (such as the rapid and massive spread of infectious diseases). The report warns that the global community is ill-positioned to address vulnerabilities associated with these interconnected risks (WEF, 2020:5).

The powerful global forces, megatrends, challenges, and risks referred to above do not recognise borders and span the multidimensional domains of time and space. These economic, demographic, and technological driving forces are co-creating a turbulent and “unsettled geopolitical landscape” (WEF, 2020:6). The interconnected nature of the risks on this global landscape is indicated in the *Global Risks Interconnections Map 2020* (see Figure 4.2).



**Figure 4-2 The Global Risks Interconnections Map 2020 (WEF, 2020:iv)**

**The water-climate-energy-food-environment nexus**

Another excellent example demonstrating the complexity of the global context is the water-climate-energy-food-environment nexus (UNEP, 2013; UNESCO, 2020: 118-125). Sustainable development depends on a balanced water-food-energy nexus. The demand for all three resources is driven by a fast-growing global population, rapid urbanisation, and economic growth. Increasing demands for water for fossil fuel production and bio-fuels production compete with demands for water for sanitation and food production. “The inextricable linkages between these critical domains require a suitably integrated approach to ensuring water and food security, and sustainable agriculture and energy production worldwide” (UN-WATER, 2021). Efforts to improve food security “will depend on a better understanding of the complex relationships between food security and nutrition, the food systems in which they are embedded and the social, political and economic forces shaping

them” (FAO, IFAD, UNICEF, WFP & WHO, 2017:22). These examples show how human activity systems are systemically integrated with natural ecosystems, such as global climate systems. These systems span the borders of all nations and locations, including the borders of the Hessequa municipality.

### **The Sustainable Development Goals**

In 2000, world leaders adopted the MDGs to be achieved by 2015 in order to address the above global challenges and risks. In 2016, these goals were succeeded by the universal Sustainable Development Goals (SDGs) for the year 2030 (UN, 2015). The goals are “integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental” (UN, 2015:3). People-centred goals aim to eradicate poverty, hunger, and illiteracy so that all humans can live a fulfilling life in a healthy and non-discriminating environment. Planet-centred goals deal with sustainable production and consumption practices to protect the planet from biodiversity loss and from degradation. Several goals address global warming and climate change. Prosperity-centred goals are designed to facilitate economic, social, and technological development in harmony with nature so that all humans can flourish and enjoy fulfilling lives. Peace-centred goals aim to promote inclusive, just, and peaceful societies and institutions for sustainable development. Partnership-centred goals focus on revitalised global collaboration to address the needs of all vulnerable and poor people.

The following quotes illustrate the systemic interconnectedness of global issues, challenges, risks, and the development goals: “Cursory inspection of the world suggests that it is a giant complex with dense connections between its parts” (Checkland, 1981:60). Laszlo (2009:24) states that “there are multiple feedbacks and cross-impacts among the global trends”. “Complex crises are often closely coupled to other problems” (Teige *et al.*, 1977:230).

The systemically interconnected nature of the above cases illustrates the need for a systems perspective to inform an understanding of complex issues. A systems approach provides an understanding of the complex contextual environment that the PESTLE analysis cannot provide.

#### **4.2.3.1 A Biomatrix systems perspective of unemployment**

The seven Biomatrix systems aspects (Dostal *et al.*, 2005:47-128) are now applied to unemployment in SA as the issue in focus. These interconnected aspects co-define the decision issue in its context. Unemployment is embedded in a network of other challenges and contextual variables that can be depicted as a causal loop diagram or a qualitative (or quantitative) system dynamics model. A causal loop diagram illustrates the connectivity between issues of concern and the contextual variables involved. It also shows the positive and negative feedback loops with time delays among all the relevant variables.

What follows is a brief summary of the Biomatrix systems perspective of unemployment in SA. The more detailed review is attached in Appendix L. The Biomatrix systems perspective reveals systemic aspects that are not observed when a PESTLE or CLA lens is used.

**Environmental aspect:** The SA labour market is embedded in both the SA context and the global context (NPC, 2012; Plaut & Holden, 2012; Roodt & Retief, 2013; Basson & Du Toit, 2017; Jonas, 2019). The challenges of unemployment, poverty, inequality, low economic growth, poor education outcomes, the legacies of apartheid and the history of Bantu education are closely interlinked. Job seekers in SA must compete within an extremely competitive and constantly changing global labour market that offers smart technology and capital, and productive, educated and skilled human talent (Roux & Haldenwang, 2016; Schwab, 2016; Jonas, 2019). It is of critical importance that job seekers meet the requirement of requisite variety (Ashby, 1961) or required complexity (Boisot & McKelvey, 2011:279) as suggested by

the WEF (2016). The “adequacy” principles require that the SA education system must also adapt to remain relevant.

**Ethos aspect:** The diverse and conflicting sets of ethos of organised labour, trade unions, employers, education and training institutions, government and labour brokers affect the current labour market. In order to understand the labour market, the ethos of each stakeholder must be understood. The ethos of the different stakeholders is normally reflected in statements of their strategies and visions, and observed in their visible behaviours, for example, during wage negotiations, legal and illegal strikes and protest marches. The corrupted ethos of government has contributed significantly to the “collapse of our schooling system”, a general deterioration of the economy and unemployment (Jonas, 2019:84). The NPC argues that the ethos of the apartheid system informed the socio-economic system within which unemployment, inequality and poverty continues to exist in SA (NPC, 2012). The ethos of a system co-defines its aims.

**Aims aspect:** Different stakeholders have different aims and objectives. According to the NDP, the education system has to produce skilled individuals that can participate in the process to eradicate poverty, reducing inequality, growing the economy, and cutting unemployment (NPC, 2012:296). The national Industrial Policy Action Plan also pursues these aims (DTI, 2018:6). Employers typically aim to maximise profits within the constraints set by legislation, effective and ethical leadership, and governance practices (King, 2016). The aims of government (dominated by the governing ANC party) are to attain and retain power through labour policies that pacify its strategic alliance partners, namely, the SACP and the trade unions in Cosatu (Plaut & Holden, 2012). The aims of the Freedom Charter (1955) continue to inform government’s aims. The aims of the Department of Trade and Industry (DTI) are to create employment through “radical economic transformation”, the promotion of the industrial sector and financial support to Black industrialists (DTI, 2018). The general aim of job seekers is to find a “decent job” where they can earn an income. These aims are contradictory and irreconcilable.

**Process aspect:** Levels of employment are defined by the numerous dynamic processes related to the supply of labour and the demand for labour in the labour market.

On the supply side, the education system employs education processes to equip people to enter the job market. Education processes form value chains. Early childhood development connects to primary education, which connects to secondary education, which connects to tertiary education, which connects to the job market (Dostal *et al.*, 2005:76). There is a “classic skills-mismatch problem between labour demand and labour supply, and between education and economic growth” (Bhorat *et al.*, 2016:312). Government’s policy processes produce laws that govern many aspects of employment, for example, the Basic Conditions of Employment Act 75 of 1997 (RSA, 1997a), the Employment Equity Act 55 of 1998 (RSA, 1998) and the National Minimum Wage Act 9 of 2018 (RSA, 2018a). Trade unions and bargaining councils negotiate for better benefits and working conditions. The SA economy requires (on the demand side) skilled and unskilled labour in both the formal and informal sectors. The three spheres of government create the biggest demand for employment in SA. Economic growth, industrialisation, innovation, and foreign direct investment tend to stimulate the demand for labour (DTI, 2018). Unemployment is the result of discrepancies between processes in the labour market system and is associated with poverty and inequality (NPC, 2012). Processes associated with population growth, urbanisation, immigration, globalisation, legislation, slow rates of both industrialisation and economic growth, and the evolution of 4IR are causing high rates of unemployment in the SA labour market.

**Structure aspect:** Many temporal and spatial structures interact within the labour market. The demographic structures of the population and the labour force, the structure of the economy in terms of the primary, secondary and tertiary sectors, the structure of employment patterns, and

structures of formal and informal economic sectors affect the labour market (Roux & Haldenwang, 2016; DTI, 2018; Stats SA, 2021). The structure of the SA labour market favours “those who are highly educated” as the “unemployment measure is strongly associated with the educational attainments of individuals” (Bhorat *et al.*, 2016:314). These authors conclude that the SA labour market is “oversupplied with those that have relatively low levels of education” (p.314).

**Governance aspect:** The SA labour market is governed in terms of the Constitution (e.g., the Bill of Rights and Chapter 9 institutions), legislation, mutual agreements among stakeholders, ethical leadership, and effective processes at all organisational levels (King, 2016). Inspectors from the Department of Labour and labour organisations continuously monitor role players in the labour market. Governance bodies (for educational institutions) play a key strategic role in their organisations. Governance of all stakeholders is typically a mix of hierarchically structured self-governance and external governance. Corrupt governance aims to destroy systems (Pelletier, 2010). Poor governance at all hierarchical levels is blamed for the poor quality of school education.

**Substance aspect:** A valuable resource in the labour market is the human capital and talent of job seekers. The combination of intellectual resources and intellectual property, innovation capacity and entrepreneurship, the availability of natural resources, the provision of infrastructure in the country, the supply of reliable volumes of energy, capital and investment funds are all resources that are systemically linked with aspects of the labour market (DTI, 2018). These resources are linked within the socio-economic networks and systems of the national and global economy. Entrepreneurs and investors mobilise these resources in an investor-friendly ecosystem to produce mutually beneficial outcomes for all stakeholders.

A Biomatrix systems perspective such as this one links the phenomenon of unemployment to numerous contextual factors across multiple dimensions. It shows that unemployment is entangled with other ‘messes’ or ‘wicked problems’ such as corrupt government, inappropriate legislation and underperforming education systems. The impacts and feedback of historic events and decisions are catching up with society in the form of ‘wicked issues’ that are now spiralling out of control.

#### **4.2.3.2 Strengths of a systems analysis relative to a PESTLE analysis**

A systems lens reveals aspects of a decision issue that are often overlooked when a PESTLE perspective is applied. The Biomatrix systems framework can be used to frame any decision issue within its context in relation to other variables that affect the issue in focus. A systems framework integrates aspects from the conceptual, spatial, and temporal domains. It also links causal factors at various levels of reality. It exposes positive and negative feedback loops that interact with the systems involved. A systems perspective enables learning. It accommodates an anticipatory capacity that can inform the formulation of proactive mitigation, adaptation, and self-organising strategies by the decision maker in a timely manner. A PESTLE framework does not focus attention on the systemic nature of contextual variables. However, a CAS perspective does.

#### **4.2.4 A complex adaptive systems perspective of contextual variables**

The epistemological notion of complexity permeates all dimensions and aspects of creation (Cilliers, 2010:83). Complexity is observed in all the dimensions and aspects of the municipal context. The aim of this brief complexity perspective of aspects of the municipal context is to illustrate that a complexity perspective reveals patterns of change over time that none of the previous perspectives necessarily reveals. This perspective addresses the unique behaviours of CAS as reviewed in Section 3.2.5. At least one example of each behaviour type is mentioned below. The following examples relate to contextual variables or issues that affect most



municipalities. Some cases are partly based on field observations by the researcher during the Covid-19 pandemic.

**Leverage and non-linearity:** The dramatic and catastrophic leverage effect of a single virus, the Covid-19 virus, is being experienced worldwide and locally in all domains of society. Since March 2020, the pervasive and devastating effects of the Covid-19 pandemic, a “black swan” event, have been felt locally and globally (Taleb, 2008; Western Cape Government, 2020b; World Bank, 2021). The Covid-19 pandemic is exposing the extreme vulnerability of the local community to global threats and challenges (Sachs *et al.*, 2020). Sachs *et al.* (2020) describe the pandemic as “the worst public health and economic crisis in a century ... affecting all countries” (p. vi). The pandemic caused job losses and amplified inequalities. On the positive side, a reduction in environmental impacts has been observed due to a reduction in economic activity. “The implications of the pandemic encompass public health, economics, social stability, politics, and geopolitics” (Sachs *et al.*, 2020:1).

**System dynamics:** System dynamics refers to causal processes within systems. These processes introduce change that propagates at different speeds through systems via positive and negative feedback loops. Announcements of election dates and, subsequently, the election results are examples of ‘change events’ that activate political processes and dynamics. System dynamics are triggered by the appointment of new councillors, new officials, and new governing coalitions in the municipal administration. The effects of climate change, such as veld fires, droughts, and rising sea levels, initiate system dynamics. Political and social unrest also activate system dynamics. Incarceration of former president, Jacob Zuma, triggered large-scale vandalism, turmoil, murder and destruction in Kwa-Zulu Natal and Gauteng in July 2021 at local government level (Cilliers, 2021). This ‘change event’ triggered the deployment of the SA Army to restore order. Protests, murders and underperformance of the security services and intelligence units in these two provinces initiated a number of investigations and exposed weak links in the state security cluster.

**Self-organisation:** The Covid-19 pandemic has triggered self-organisation strategies and activities globally and locally. Communities and individuals have self-organised through a range of lock-down arrangements and the implementation of various protocols to stop the spread of the virus. Municipal officials and councillors moved their offices to their homes and replaced physical eye-to-eye meetings with virtual meetings. Self-organisation due to the Covid-19 pandemic included the reorganisation of health care systems, work processes, wholesale and retail activities, social interaction, global trade, economies and religious activities.

**Adaptation:** To remain relevant following the advent of 4IR, education systems and job seekers in SA will have to adapt their education strategies. Municipalities will have to adapt their technology, recruitment, and training strategies. The skills and competencies required in a technologically advanced society, as suggested by the WEF (2016), are different to those currently on offer in the SA labour market and in the Hessequa area (Bhorat *et al.*, 2016; Stats SA, 2020b; 2021). The IPCC (2013; 2018) and Stern (2006) recommend a range of adaptation of strategies to deal with climate change at a local level. Farmers may have to switch to crops that are more climate resistant, for example (Stern, 2006:404). Once adaptation occurs across generations at a systems level, the system has evolved (Prokopenko, 2006:2).

**Emergence:** The capacities of the Hessequa municipality to formulate policies, to generate income and to deliver services are emergent abilities. The development of global ICT networks and the internet has facilitated and enabled the emergence of cyber criminality and international criminal networks (WEF, 2020). The “hidden”, “black” or “shadow economy” as observed in global organised criminal and terrorist networks, the internet and the “fantasy economy” of international finance reflect the unwelcome, unwanted and repressed aspects of human consciousness that contribute to this situation (Slaughter, 2010:61). Criminal minds are

using new technology to commit novel kinds of crimes within the municipal context. Carbon trading and carbon taxes are examples of emerging phenomena caused by climate change.

**Evolution and co-evolution:** Technological development and 4IR have stimulated the evolution of innovative education systems, governance models, and health systems. Traditional face-to-face instruction in classrooms and distance education have evolved to online education, virtual universities, massive open online courses (MOOCs) and e-learning; all made possible by ICT, machine learning, AI and big data (Qureshi, 2019). Technological innovations are supporting the evolution of network governance systems, “e-democracy” and “smart governance” systems (Liu & Yuan, 2015). Information technology is used to improve the quality, safety, and efficiency of health care systems in the USA on a large scale (Patel *et al.*, 2015).

**Learning:** The global scientific community was sensitised to the limits of the planet’s carrying capacity and the environmental impacts by Meadows *et al.* (1972), Gore (2006), Slaughter (2010) and the WEF (2020). Much has been learned about the interaction between the Anthropocene and planetary ecosystems (Stern, 2006; IPCC, 2013; 2018). Societies all over the world have been informed about adaptation and mitigation strategies based on this learning.

**Self-organised criticality and punctuated equilibrium:** Humanity has driven global ecosystems to an extremely critical point through its materialistic, self-centred and unsustainable behaviours (Laszlo, 2010; Gore, 2006). Meadows *et al.* (1972) warned about such a future scenario as “a global catastrophe”. Martin (2006) refers to it as “the singularity” and a “perfect storm”. The climate crisis is “a true planetary emergency” (Gore, 2006:10). Laszlo (2009; 2010) refers to this point as “a state of global emergency”, a “chaos point” and “a tipping point”. Duvenhage (2020) also warns that SA has reached a “tipping point”.

**Bifurcation:** Many authors agree that humanity and nature have reached a bifurcation point (IPCC, 2013; 2018). They also declare that all hope is not lost and that a fundamental change in behaviour can save the day. Slaughter (2010), for example, extends “the biggest wake-up call in history” to call attention to this matter.

**Self-referentiality:** The political structures and the administration of a municipality are examples of self-referring systems. These structures continue to exist after municipal elections, even though all the councillors and officials might have been replaced after the election. Self-referentiality tends to maintain the way systems operate although the role players come and go. Fundamental change in a system only occurs once its ethos has changed (Sahal, 1977:163; Geyer, 2001; Dostal *et al.*, 2005).

**Dissipative structures:** Large cities are examples of dissipative structures that exchange matter, energy, and information with their environments under conditions far from equilibrium (Prigogine & Stengers, 1984; Prigogine, 1996). Once rapid urbanisation takes place, a city may reach a bifurcation point. It may enter a state of chaos if it cannot cope with the rate of urbanisation, or it can reorganise to reach higher levels of complexity so that it can cope with the impacts and demands of urbanisation. The global climate system is a dissipative structure at a bifurcation point. Unless the impact of human activity on the environment is addressed, the longer-term feedback effects of climate change may be catastrophic.

**Path-dependency:** Many aspects of the current SA society and economy reflect its path-dependency. The SA education system, labour market, spatial development structures, infrastructure development and social systems continue to reflect a historic background based on the apartheid paradigm and earlier discriminatory development strategies for different race groups. Spatial legacies and spatial planning from an earlier era (before 1994) continue to pose specific challenges to municipalities (COGTA, 2009a:23). These systems have a built-in momentum that tends to continue some of these historic trends.

**Phase changes/shifts:** The first democratic election in 1994 introduced a phase change in SA politics and in society in general. The apartheid system was replaced by a constitutional democracy. Many fundamental changes in all spheres of government and in society took place in terms of subsequent legislation. Deployment of corrupt councillors and officials to many SA municipalities have caused internal phase changes from “good governance” to corrupt governance (AG, 2020a).

During the first half of July 2021, political tensions and faction fights within the ANC reached a critical point and a phase change occurred almost overnight in Kwazulu-Natal and Gauteng. Factors that contributed to the chaos included poor governance, faction fights within the ANC, and an unstable society (Cilliers, 2021). Over large areas of these provinces, violence and chaos erupted, causing billions of Rands of devastation and leaving more than 300 people dead (Mbanyele, 2021).

#### 4.2.5 A temporal perspective

A temporal perspective considers the evolution of processes and systems over time and links the past, the present and the future. All processes proceed along the unidirectional dimension of time. Decisions about CAS should consider their histories and their path-dependency (Fernández *et al.*, 2010:178; Pollit & Bouckaert, 2011:40). Cognitive processes, such as foresight, goal setting, possibility thinking, problem-solving and decision making require an awareness of time and a future consciousness (Lombardo, 2006:42-43). Future-consciousness has to do with the human capacity to anticipate, to imagine, to set goals, and to plan projects in order to realise desired future goals. Decision makers should consider temporal patterns and the history of systems when decisions are made.

The following sub-sections briefly address technological cycles and the history of the Hessequa municipality in a bigger SA context to illustrate the importance of the temporal dimension.

##### 4.2.5.1 *Technological cycles and a future consciousness*

An awareness of time requires an understanding of the links between the past, present and the future.

**The past:** Various authors have studied patterns of change in multiple dimensions over time (Linstone, 2002; Perez, 2002; Perez, 2009; Swilling & Annecke, 2012; Schwab, 2016). Technological change also follows patterns over time. These patterns take the form of long waves (Linstone, 2002; Perez, 2002), S-curves (Butler, 2016) and singularities (Kurzweil, 2001; Martin, 2006). Linstone (2002) refers to five long wave cycles of 50 to 60 years of technological innovations that have had significant developmental implications for humanity. Perez (2002; 2009) refers to five similar cycles of technological revolutions. First was the Industrial Revolution in Britain, starting in 1771. The second, starting in 1829, was the age of steam and railways, fuelled by coal. The third revolution started in 1875. This was the age of steel, electricity, heavy engineering, and steam engines for ships. Fourth, starting in 1908, was the age of cheap oil, the internal combustion engine, the automobile, petrochemicals, and home electrical appliances. Since 1971, the fifth revolution, the age of ICT, the internet, biotechnology and new materials has emerged. Using a different logic, Schwab (2016) describes 4IR as a similar wave of technological innovation. Each of these cycles of innovation continues to have a huge and visible impact on the communities of Hessequa municipality.

Global climate change effects, global challenges and global trends also span the boundaries between past, present and future. Relevant trends have to be monitored.

**The present:** Decision makers need an anticipatory capacity (in the present) to deal with the future (Rosen, 1991; Poli, 2010). Anticipation is about the aggregation of ideas and

considerations that inform decisions that may influence the future. Anticipatory leaders search for emerging issues, trends, and trend breaks (i.e., discontinuities) of dynamic processes. They look for the seeds of change, tensions in relationships between key role players, and possible disruptive technologies (Inayatullah, 2004:7; Caillol, 2012). They also need the capacity to dream and to imagine ideal or visionary futures (Lombardo, 2006:42).

The anticipatory function of a future-conscious organisation can use any of the above frameworks (i.e., PESTLE, systems, CLA or complexity lens) to scan the contextual environment in order to gather relevant data and information in the temporal domain.

**The future:** Forces that have shaped the past and the present remain valid for some time. “The core thesis is that the future is embedded in the past; it is the projection of the past through the present” (Poli, 2010:769). The aim of futures studies and futures research is to co-create desired and preferred futures through anticipation and foresight (Voros, 2003; Inayatullah, 2004). Decision-makers should be aware of the existence of potential, possible, probable, plausible, preferred and desired futures and the differences among them (Voros, 2003; Bishop & Hines, 2012). The future is not a given. An understanding of possible and plausible futures may inform decisions in the present to co-create a preferred future or a desired future. A future consciousness enables decision-makers to exploit future opportunities and to avoid potential risks through their decisions in the present. “Only a very few people have a global perspective that extends far into the future” (Meadows *et al.*, 1972:19; Linstone, 2002:334). Initiatives to address global and strategic issues, opportunities, and risks require a long-term perspective.

#### **4.2.5.2 A perspective of South African history**

The history of the Hessequa municipality is embedded in the history of SA (Muller, 1984; Worden, 2012). On the one side this history is characterised by the clash of civilisations (Huntington, 1996), conflict, segregation, wars and civil wars, domination and exploitation by European powers, slavery, the effects of colonialism and apartheid, underdevelopment, and poverty. On the other side, this same history also tells the stories of hope, courage, perseverance, initiative, ambition, development, and the emergence of a nation that built a military power and an economy that would become the leaders on the African continent.

A salient feature of the SA history is the role of white supremacy in southern Africa (Muller, 1979: 579; Worden, 2012:74). The white minority was superior in administration, technology and military power and was therefore able to maintain political control over the divided and illiterate ‘non-white’ majority until the unstoppable dawn of the African national consciousness movement during the middle of the previous century. In his visionary address to the white Parliament of the Union of South Africa in Cape Town on 3 February 1960, Harold Macmillan remarked: “The wind of change is blowing through the continent” (Eksteen, 1978: 102). Macmillan warned Parliament that the racial policies of the apartheid regime were neither tenable nor sustainable (Butler & Stockwell, 2013: 2).

After 1960, numerous national, continental, and international events, trends and local scandals put enormous pressure on the SA government to transform itself (Muller, 1978: 508-549; Mandela, 1994). This transformation was carefully facilitated through the statesmanship of both Nelson Mandela and FW de Klerk (Mandela, 1994; Human & Rousseau, 2001). A key milestone event during this peaceful transformation process was the first national democratic election held on 27 and 28 April 1994 (Mandela, 1994). The ANC won the election. A “New South Africa” was born as the result of a remarkable negotiated settlement (Worden, 2012: 156).

Important subsequent developments include the promulgation of the national Constitution and the Bill of Rights (RSA, 1996) and the White Paper on Local Government in 1998. The Constitution and the White Paper laid the foundation for the legislative framework for cooperative governance and local government, which was discussed above.

### **4.2.5.3 Transformation of municipalities**

Initial conditions for local government in a democratic SA were not ideal in 1994. The apartheid government “[had] divided South Africa into separate and unequal spaces ... (with) marked differences in poverty, wealth and institutional capacity in South Africa’s 283 municipalities” (COGTA, 2009b:8). During the apartheid era, municipalities were structured in terms of a race-based dispensation (Bekink, 2006:46) that prescribed own management for own areas (RSA, 1998). These arrangements favoured white communities and areas where most of the economic activity took place. It resulted in unequal service delivery patterns. Infrastructure and provision of services in residential areas for ‘non-white’ people were mostly neglected.

Protests against this distorted system gained momentum during the 1980s. Government initiatives to address the needs of ‘black’ communities were insufficient. In 1990, a national reform process started. The Local Government Negotiating Forum negotiated the Local Government Transition Act 209 of 1993 which sketched a three-phased process for transformation of municipalities. This process made provision for local negotiating forums, the first local government elections of 1995/1996, the establishment of integrated municipalities, and the local government election of December 2000. The adoption of the 1996 Constitution introduced a new era for local government in SA (Bekink, 2006; SALGA, 2021).

The 1996 Constitution elevated local government to a sphere of government in its own right within a system of cooperative government. This allowed municipalities to govern the local government affairs of the communities within its jurisdiction. In 1998, the White Paper was published as “a mini-Constitution for local government” (RSA, 1998). This document, based on the notion of developmental local government, introduced a process of radical transformation of local government. Local government had to eliminate disparities and disadvantages so that equal services were provided to all residents.

Because complex systems have a history, and because their past is co-responsible for their current behaviour (Cilliers, 1998:4), the historical context of the Hessequa municipality is provided next.

### **4.2.5.4 A brief history of the Hessequa municipality**

Before 1994, each of the bigger towns within the geographic area currently known as the Hessequa municipal area had its own local municipality under the jurisdiction of the Langeberg Divisional Council. The Local Government Transition Act of 1993 facilitated the amalgamation of all these small municipalities into the Langeberg Municipality. The local council that was elected during the 1995/1996 elections was still dominated by councillors representing the New National Party. At that stage, the ANC was represented by a small minority within the council.

Well-educated ANC activists then started to mobilise voter support in the local communities, especially within the poorer coloured communities. As a result, the ANC won the 2006 elections. Nine out of the fifteen councillors then represented the ANC. During the 2006-2011 term the ANC governed the municipality well under the leadership of a very capable speaker and mayor. The name of the municipality was changed from Langeberg Municipality to Hessequa Local Municipality. Hessequa municipality is a Category B local municipality.

The last two terms (i.e., from 2011 to 2016, and from 2016 to 2021) were characterised by intervals of coalition politics. The dominant parties, the ANC and the DA, required the support of a minority party as coalition partner to govern. Unreliable coalition partners from minority parties rendered coalition governance unstable and unpredictable. The DA coalition with the FF+ during the 2016-2021 term, however, was stable.

Imbalances in power relations between the ANC and the DA and the involvement of coalition partners introduced new system dynamics into the municipality. These dynamics reflect a

mature democracy in operation at a local level. The spatial development patterns, the socio-economic conditions of the Hessequa area and the worldviews of its communities still reflect images of the pre-1994 SA context. These patterns of path-dependency continue to present challenges to the municipality. “In a way, the history of the organization is nothing else but the collection of all [its] decisions” (Richardson *et al.*, 2007:34).

#### 4.2.6 An integral perspective

Integral theory is a meta-paradigm that integrates other existing paradigms that are mutually enriching to provide a coherent view of an issue (Wilber, 1996; Slaughter, 2001; Esbjörn-Hargens, 2009). The integral framework is discussed in more detail in Appendix L. This summary only serves to illustrate how all the different perspectives of the Hessequa context considered above can be fitted into a comprehensive integral framework. Only the four quadrants, levels of development over time, and lines of developmental capacities and consciousness of the framework are considered here. Figure 4.3 contains a graphical representation of the framework.

The four quadrants of the integral framework represent four different, simultaneous, complementary, interconnected, and irreducible dimensions of any reality. Levels of development are understood as concentric probability waves that expand outwards along the timeline in each quadrant. Various lines in each quadrant “demonstrate sequential development with increasing levels of complexity or depth that transcend and include the previous level” (Esbjörn-Hargens, 2009:11). Developmental levels and lines in each quadrant are correlated with corresponding levels and lines in all the other quadrants. The integral framework considers both the visible “exterior” reality in the right hemisphere as well as the invisible “interior” reality of phenomena in the left hemisphere.

The integral framework integrates the above perspectives of the external context of the municipality as follows: The PESTLE analysis fits neatly into the lower right quadrant as it describes the different dimensions of the physical and systemic world that contains the Hessequa municipality. The systems analysis of the context is also associated with the lower right quadrant. The worldviews and paradigms of society (represented in the lower left quadrant) inform and co-produce these physical systems. The analyses of the CLA at the surface level and the systems level belong to the lower right quadrant. CLA analysis at the levels of worldviews, paradigms, myths, and metaphors belong to the interior, invisible world of the collective of the lower left quadrant. The CAS perspective of the context also belongs to the lower right quadrant.

Integral theory captures the dimension of time (and development) in terms of concentric waves that expand outwards with time. These circles may present the pre-industrial era, followed by the industrial era and then the post-industrial era, or the different cycles of technological innovation. Each circle links the scientific and social paradigms upon which the innovations are based (lower left) with corresponding physical systems, for example, infrastructure, transport systems, communication systems and energy systems (lower right). The mental and cognitive powers of individual scientists and pioneers from various disciplines (upper left) informed the new and evolving paradigms and mindsets that supported cycles of innovation over time. New insights stimulated new types of behaviour among these scientists and industrialists, reflected in the upper right quadrant.

The integral perspective reveals that most of the contextual analysis above is focused on the lower right quadrant, the domain of physical systems with some reference to the worldviews and paradigms of the collective in the lower left quadrant. The internal and external worlds of individuals are neglected in the analysis of the external context of the municipality. This shortcoming will be addressed to a very limited extent in the analysis of the internal context of the municipality below.

The powerful integral framework, based on integral theory, has many unique advantages. “The four-quadrant meta-perspective allows us to see things together that have often been seen in isolation” (Slaughter, 2001:416). This model integrates four qualitatively different but interrelated domains of the same reality that are often either not observed or considered in isolation. The framework exposes blind spots in the contextual analysis. It may be applied to any context, and it can be used at any scale (Esbjörn-Hargens, 2009:2). The beauty of the framework is that it accommodates and integrates four distinct perspectives on any unit of analysis at any level of development at any time. It reveals more dimensions of our communities and our environments than any other individual framework.

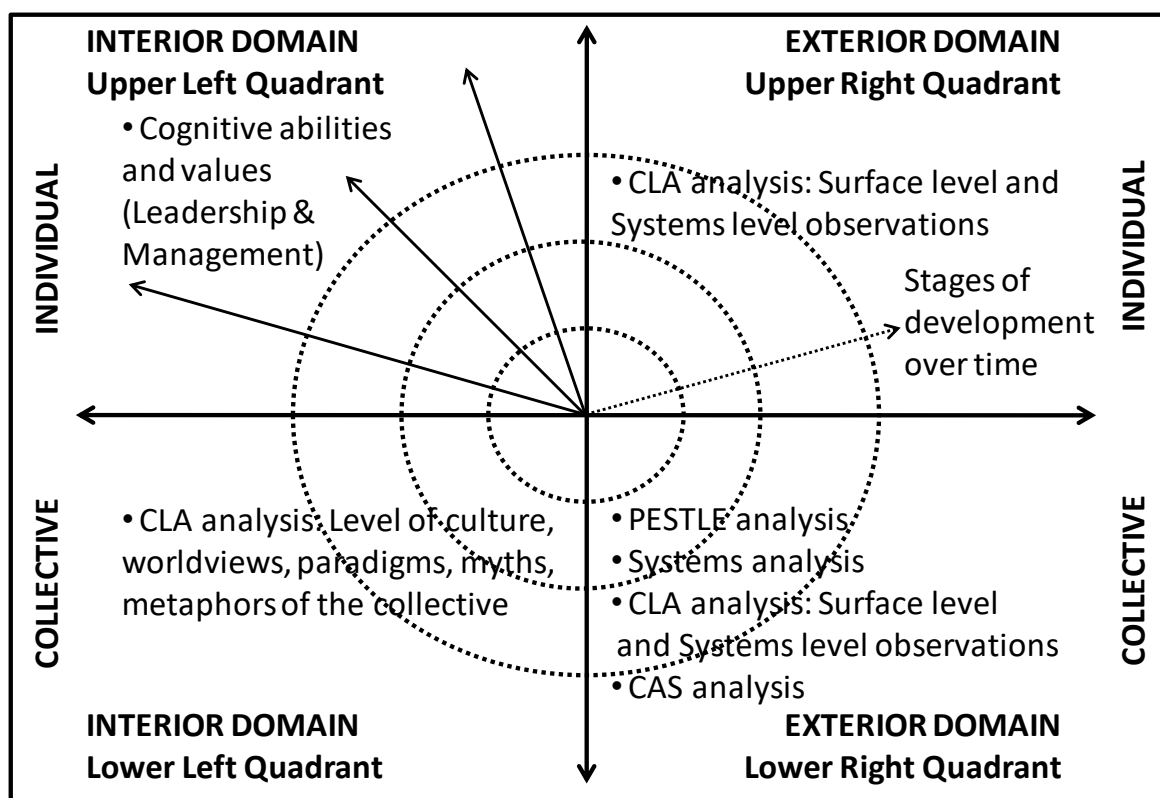


Figure 4-3 The integral framework (Esbjörn-Hargens, 2009)

### 4.3 The internal context of the Hessequa municipality

This section includes a summary review of the internal context of the municipality. The more detailed version is included as Appendix M. The internal context of the municipality is defined as the unit of analysis. This domain is under the control and authority of the municipal council. It includes the administration and the political structures of the municipality, but it excludes the communities of the municipality. This review is primarily based on documents in the public domain, observations, and field notes (Hessequa municipality, 2021a). The seven aspects of the Biomatrix systems theory are applied to evaluate the internal municipal domain (Dostal *et al.*, 2005).

#### 4.3.1 The environmental aspect

The internal environment of the municipality is contained within the external environment of the municipality, which has already been discussed in sufficient detail in Section 4.2 in terms of multiple complementary perspectives. Next the ethos aspect is discussed.

### 4.3.2 The ethos aspect

Ethos refers to the worldviews, theories and models, the values and beliefs, the guiding principles, culture, and symbols that inform the municipality in its entirety (Loevinger, 1976; Dostal *et al.*, 2005:231; Beck & Cowan, 2006; Cook-Greuter, 2013). Only limited data about the ethos aspect has been collected. The culture is based on trust, professionalism and respect among actors.

**Worldviews:** The worldviews of councillors correspond with the worldviews of the political parties as reflected in the manifestos of the parties. The worldviews of the political parties co-define their behaviours, objectives, strategies and aims. Worldviews of political parties, councillors, officials, labourers, and residents differ and usually clash.

**Theories and models:** The administration of the municipality is best described by bureaucratic governance theory. Aspects of the NPM are reflected in performance management, audit, and governance processes. Aspects of a learning organisation are reflected in succession planning initiatives, on-the-job training, and workshops where learning takes place. A political model of decision-making describes decision-making within the municipal structures quite accurately (see Section 4.4.3). Strategic plans in the IDP reflect aspects of Etzioni's mixed-scanning theory (Etzioni, 1967; 1986). The entire budget process can be described as an incremental decision-making process with small adjustments to historic budgeting patterns (Lindblom, 1959). Caucuses of the political parties sometimes apply uncritical groupthink decision-making processes (Janis, 1971; 1982; 1991). Councillors are not allowed to vote independently against their caucuses. A senior official uses intuitive decision-making daily based on her experience and knowledge (Matzler *et al.*, 2007; Klein, 2015a:164). She often uses rational decision-making processes within the boundaries of reason, legislation, budgets, and policies. Most of the decision-making activities within the municipality can be aptly described by process models of decision making (Nutt, 2010a). Checkland's soft systems model was used in July 2019 to establish a holistic and sustainable energy plan for the next 30 years for the Hessequa municipality (Checkland, 1981).

Interviewees describe leaders in terms of the traits and characteristics of the individual person and in terms of the "great man theory" (Stogdill, 1948; Judge *et al.*, 2009; Hunt & Fedynich, 2018). The municipal manager is respected for remarkable levels of emotional intelligence, broad experience and extensive knowledge. The emotional intelligence of individual councillors varies from low to high. At least one director tends to employ an autocratic leadership style (DuBrin, 2016:126-127). Most interviewees adopt a situational or a contingency leadership style depending on the situation they deal with (DuBrin, 20216:163). There is much potential for the development of charismatic and transformational leadership and complexity leadership (Marion & Uhl-Bien, 2011). Toxic leadership is not tolerated within the municipality at all (Padilla *et al.*, 2007).

**Metaphors:** The 'machine' metaphor applies to the municipal bureaucracy. The mayor uses the metaphor of "a bicycle wheel with many spokes" to describe the municipality and says:

*When one spoke of the wheel gets lost or breaks the wheel will not function. For me it is important that everyone must do his share to take the municipality forward.*

A councillor discussed the virtue of discipline when she remarked:

*I stay in my lane as I should. When a head of a department leaves his lane, he or she must bear with the consequences.*

A director commented on the political situation in the municipality and noted:



*Our new mayor wants to build bridges between the opposition party and the governing party. I think he does it very well. There is really a situation of holding out a hand that says, let's walk the road together.*

A director uses the metaphor of “*Sherpas that support the climbers to plant the banner on Mount Everest*” to explain how the administration supports the council through trust relationships. These metaphors reflect the mental models that make Hessequa municipality a top performer.

**Values:** The values of the municipality should reflect the values of government captured in the Constitution and the Bill of Rights, the MFMA, and Schedule 1 and Schedule 2 of the MSA. Guiding principles of the Hessequa municipality stated in the current IDP for 2017 to 2022 are honesty, responsiveness, a culture of service delivery, safety of communities, development of opportunities, and the redress of past inequalities.

**Beliefs:** The IDP states that the municipality should plan “*for a longer term and not only for the five-year term of office of Council*”. Almost all the senior officials and the councillors commit to the Christian faith.

**Ethics policy:** The Code of Conduct of Officials, the Whistle Blower Policy, the Local Governance Service Charter and the Anti-corruption Policy of the municipality constitute the equivalent of an ethics policy (Hessequa municipality, 2021a).

**Culture:** The councillors and officials of the municipality always address one another very professionally. Relationships among councillors and officials are primarily based on trust and respect.

**Culture of learning:** A learning culture is established through on-the-job training, succession planning initiatives, and the creation of knowledge-sharing events that precede decision-making.

**Symbols:** Seating arrangements in the municipal board room symbolise the positions of power of the speaker, mayor, municipal manager (and legal officer). These senior individuals are seated next to each other at a higher level than the rest of the attendees on a small stage. The ruling party and coalition member(s) are seated at the right-hand side of the speaker and the opposition party at the lefthand side at floor level.

### 4.3.3 The aims aspect

The general aims, objectives and focus areas of the municipality are defined in the Constitution (in sections 152 and 153 and in schedules 4B and 5B) and in section 19 of the Structures Act. Strategic objectives of the municipality are informed by the NDP (NPC, 2012), State of the Nation Address (SONA, 2019), the strategic plan of the Western Cape Government (2020d), and the strategies of the Garden Route District Municipality (2021).

The vision of the municipality is to be “a caring, serving and growing Hessequa” based on the pillars of social well-being, economic viability and environmental integrity (Hessequa municipality, 2021a). Five strategic objectives guide service delivery and operations, namely good governance, and public participation, cost-effective service delivery, good financial management, social and economic development, and sustainable environmental management (Hessequa municipality, 2021a). These objectives inform the performance management system.

#### 4.3.4 The process aspect

Three kinds of processes take place within the municipality (Dostal *et al.*, 2005:282-287). *Outward-directed processes* are core business processes that define the purpose of the municipality. The supply of electricity, fresh water, sanitation and sewerage services, waste removal and treatment, social development programmes, development planning, fire and emergency services are all outward-directed processes.

*Inward-directed processes* are business support processes, or specialised line functions that are employed to support the outward-directed processes. These processes include, for example, human resource management, ICT support, legal services, revenue collection, budget control, supply chain processes, and the maintenance and management of technical infrastructure.

*Self-directed processes* are organisational support processes that are concerned with maintaining the municipality as an effective, efficient, and sustainable entity in the short, medium, and longer term. The self-directed processes allocate and coordinate resources to both the outward-directed and the inward-directed processes in a balanced and sustainable manner. Strategic planning, the annual budgeting process, performance management, governance processes, delegation processes, policy formulation, audit and oversight processes are all self-directed in nature.

#### 4.3.5 The structure aspect

The structural aspect addresses all kinds of structures in different domains and dimensions of the municipality. "Public organizations are often embedded in larger governmental structures" (Rainey, 2009:89). Some of these structures are defined in terms of a cascade of legislation derived from the Constitution. Local governance is contained in structures of co-operative governance. A distinction is made between political structures and administrative structures (Wilson, 1887). Political structures include the municipal council, the executive mayoral committee, portfolio committees, ward committees, and the organisational structures of the political parties. Political parties are organised as hierarchical structures that span national, provincial, regional, and local levels. The municipal council consists of nine ward councillors and eight proportionally elected councillors. A DA majority has been ruling the municipality since 2019. The ANC has been forming the opposition.

The administration consists of seven levels of municipal bureaucracy in five directorates. The five directors for financial services, corporate management, development planning, community services and technical services report to the municipal manager. By August 2021, these six senior officials shared a total of 133 years of experience within local government, of which 119 years had been spent within Hessequa municipality. The municipality employed 580 employees in August 2021.

Municipal decision-making is structured in terms of the applicable constitutional and legislative frameworks. The council has delegated executive decision-making powers to its executive mayor. The delegation system structures decision-making powers and responsibilities. This structure cascades downwards from the municipal council, the executive mayor, and the municipal manager to the lowest organisational levels. The municipal council is allowed to delegate its executive powers, but it is not allowed to delegate any of its legislative powers listed in Section 160(2) of the Constitution. Roles and responsibilities of municipal actors are documented in the 'article 53 document' and the delegation register (Hessequa municipality, 2021a).

Five portfolio committees chaired by members of the executive mayoral committee represent the five directorates. These committees have advisory powers, and they assist the executive

committee and the executive mayor in their duties. Each portfolio committee meeting is attended by an assigned councillor from the opposition party.

Temporal structures are captured on the calendar of the municipality. Different activities have different frequencies and patterns. Municipal elections take place every five years. IDPs, budgets, performance agreements, audit reports, oversight reports and annual reports are prepared on an annual basis. Each council meeting is preceded by a cycle of events with a monthly or quarterly frequency. All these activities have a specific temporal structure.

Councillors and officials participate in formal and informal communication networks. Sophisticated ICT systems allowed officials and councillors to work from home during the Covid-19 pandemic. Virtual networks allow officials and councillors to access external resources.

The above integrated structures form part of the organisational structure of the municipality.

#### **4.3.6 The resource aspect**

The King IV report on corporate governance for SA (King, 2016:10) refers to “six capitals”. “Six capitals” refer to six resources: human talent, manufactured assets, intellectual capital, financial resources, social and relationship resources, and natural resources. *Human capital* includes the knowledge, skills, experience and expertise of councillors, officials and the “grey power” of knowledgeable residents. *Manufactured capital* includes the physical infrastructure that is employed for service delivery and administration. *Financial capital* includes the funds collected through taxes, rates, levies, fines, grants, loans, and allocations from other spheres of government. The *intellectual resources* include the intellectual capital contained in policies, administrative and business support systems, the knowledge of councillors, employees and individuals in the networks of the municipality. Social and relationship capital refers to the value of relationships between the municipality, residents, and other stakeholders. Natural resources include weather and climate systems, clean air, natural beauty, fresh water, wetlands, mountains, the ocean and coastal region, solar radiation, biomass, wind, land, and other biospheres.

#### **4.3.7 The governance aspect**

Hessequa municipality is governed in terms of the Constitution, relevant legislation, regulations, and the King IV Report (King, 2016). A political governance structure and an administrative governance structure are adhered to (Hessequa municipality, 2021b). The executive and legislative authority of the municipality and its decision-making authority are vested in the municipal council which is accountable for municipal governance. Decision-making authority is delegated to the executive mayoral committee (EMC) and the executive mayor in terms of the delegation register. The five portfolio committees support the EMC. The council is also assisted by ward committees, internal audit committees, the municipal public accounts committee, a Section 32 committee, an appeal committee, a disciplinary committee, and various advisory committees. Delegating authorities throughout the bureaucratic hierarchy perform their oversight functions and they have to report on such matters to higher levels. The executive mayor, for example, must report to the council on all decisions taken by him.

Six administrative governance structures serve the administration. The senior management committee, chaired by the municipal manager oversees day-to-day operations. The ICT steering committee, the risk management committee, the disaster management committee, various supply chain management committees, and the planning tribunal are accountable for governance of processes within their respective domains. The municipal manager compiles the annual report and the mayor tables this report in the council. The municipal public accounts committee evaluates the annual report and presents the committee’s findings in an oversight

report which is tabled in the council. After adoption of the oversight report the municipal manager has to publish the report. Municipal performance is also evaluated by the AG who publishes the results of the annual audit. By 2021 the Hessequa municipality has received eight consecutive clean and unqualified audit reports. The AG has published factors that contributed to good municipal performance (AG, 2020a:197; AG, 2020b: 32).

Each of the above seven Biomatrix systems aspects is holographically contained in all the other aspects. The Biomatrix perspective above presents a perspective from outside the municipality about the internal context. The empirical perspective below represents the interviewees' perspective about the municipality from the inside.

#### **4.4 Empirical findings regarding the municipal context**

This section contains empirical findings based on depth interviews, focus groups, field notes and observations relating to the municipal context as it unfolded during the two terms from 2011 to 2021. Interviewees were asked to answer the following research sub-question:

*What are the main features of the current context within which the municipality takes decisions?*

This question was formulated deductively during the literature review. However, the thematic analysis of the data set was done inductively. Secondary questions were posed to extract rich data during interviews (see the interview protocols in Appendix G and Appendix H). This data was analysed through thematic analysis. The seven phases of thematic analysis as research method were discussed in Section 2.4.3. Implementation of the method was discussed in Section 2.7.4. This section continues with the thematic analysis as part of Phase 4 as was described in Section 2.7.4.4.

##### **4.4.1 Implementing Phase 4 and Phase 5 of the thematic analysis**

Implementation of Phase 1 (transcription of data), Phase 2 (familiarisation with the data), Phase 3 (data coding; defining codes) and Phase 4 (data coding; defining candidate themes and patterns) of the thematic analysis method was discussed in Section 2.7.4 above. Phase 4 continues below with the search for candidate themes among the initial codes and related data. Phase 5 is about the review of themes. Implementation of Phase 4 and Phase 5 is a simultaneous and iterative process. It was difficult to make a sharp distinction between these two phases of the analysis as explained in Section 2.4.3. Therefore, the practical implementation of both phases is presented as one iterative activity.

CAQDAS was used for coding the large amount of data. Overarching themes, main themes, themes, and sub-themes were developed through the combined use of NVivo-12 software and a manual process (see Section 2.4.3.2 for an overview of the terms: *overarching theme*, *main theme*, *theme*, and *sub-theme*). Section 2.7.4 contains a description of the practical implementation of the method during this study. Implementation of Phase 4, Phase 5, Phase 6, and Phase 7 of the thematic analysis for the purposes of this chapter is discussed below.

The search for themes in Section 2.7.4.4 produced a list of general candidate themes. The continuation of Phase 4 of the thematic analysis involved a search for additional candidate themes based on all the initial codes from the entire data set and in relation to the specific research question of this chapter. This search for additional themes and the search for relationships among themes, sub-themes, and main themes was done on paper. The paper exercise of identifying candidate themes was a terribly busy, messy, almost chaotic process from which order gradually emerged as the analysis continued.

The resultant list of additional candidate themes appears in Table 4.2. General themes from Section 2.7.4.4 and additional themes from Table 4.2 were then used to devise a thematic map

with main themes, themes and sub-themes relating to the research sub-question. The provisional clustering of codes around themes, sub-themes, and main themes, and the development of the thematic map was an iterative process. This iterative process included recoding and various revisions of themes. As a result, some of the candidate themes were merged, split up or ignored during the process of building the thematic map. Some themes became main themes and other themes became sub-themes. The following examples demonstrate how candidate themes (mostly from Table 4.2) were adjusted and modified during Phase 4 as the thematic map evolved.

- The theme, *challenges*, was merged into the sub-theme, *awareness of challenges*. The theme, *environment*, was merged into the theme, *natural environment*.
- The theme, *PESTLE awareness*, became a sub-theme of the theme, *spatial awareness*.
- The following themes became sub-sub-themes that clustered around the sub-theme PESTLE awareness: Economic context, environment, legal frameworks, legislative context, natural environment, political context, social context, and technological context.
- The themes awareness of challenges and stakeholder awareness became sub-themes of the theme spatial awareness.
- The theme *contextual awareness* became a main theme.
- The theme *complexity* was modified to become a main theme called *emergence of complexity*.
- The theme *context* was changed to *features of the municipal context* to become an overarching theme for the thematic map.

The search for themes (i.e., Phase 4 of the analysis) and the reviewing of themes (i.e., Phase 5 of the analysis) were iterative processes. Phase 4 and Phase 5 produced three main themes, namely *a political arena*, *contextual awareness*, and *emergence of complexity*. The main themes were developed as follows:

**Main theme: a political arena:** Several initial codes were clustered around themes associated with the political nature of the municipal domain. Themes, such as *power* and *actors*, *aims of actors*, *coalitions*, *conflict among actors*, *interests*, *party politics*, *political actors*, *political motives*, *political context*, *strategies*, and *tactics of main actors* (from Table 4.2) were initially clustered around a candidate main theme, *a political playground*. Later on, the main theme was reconfigured to *a political arena* to reflect the fierce battles that took place in the municipality between opposing political parties. The themes associated with *a political arena* were also adjusted and recoded during a few iterations and reconfigurations. Finally, the themes, *actors in the arena*, *interests and aims*, *conflict*, *the use of power*, and *strategies and tactics*, were retained.

**Table 4-2 List of new candidate themes resulting from Phase 4 of the thematic analysis**

Actors	Councillors	Legal frameworks	Regions
Adaptation	Culture	Legislative context	Residents
Administration	Dealing with complexity	Municipal culture	Scarcity
Aims of main actors	Economic context	Natural environment	Self-reference
Awareness of challenges	Emergence	Networking	Social context
Bhaviours	Emergency	Networks	Spatial awareness
Bifurcation	Environment	Officials	Stakeholder awareness
Challenges	Ethics	Order	Stakeholder diversity
Coalitions	Evolution	Other stakeholders	Stakeholders
Collaboration	External context	Party politics	Strategies
Communication	Hierarchy	PESTLE awareness	System dynamics
Conflict among actors	Interdependencies	Points of view	Systems
Connectivity	Interests	Political actors	Tactics of main actors
Contextual awareness	Internal context	Political motives	Technological context
Continuity of time	Issues perceived as complex	Political context	Temporal awareness
Contributors of complexity	Learning	Racism	Temporal context

**Main theme: *contextual awareness*:** The main theme, *contextual awareness*, represented themes that reflected the interviewees' direct responses to the research question. Initial codes were clustered around candidate themes, such as *complexity*, *context*, *awareness of challenges*, *contextual awareness*, *continuity of time*, *culture*, *economic context*, *environment*, *external context*, *internal context*, *legislative context*, *municipal culture*, *natural environment*, *other stakeholders*, *PESTLE awareness*, *political context*, *social context*, *spatial awareness*, *stakeholder awareness*, *stakeholder diversity*, *stakeholders*, *technological context*, *temporal awareness* and *temporal context* (from Table 4.2). Further refinement and interpretation of the candidate themes and the initial codes associated with them resulted in a hierarchy of themes, sub-themes, and even sub-sub-themes.

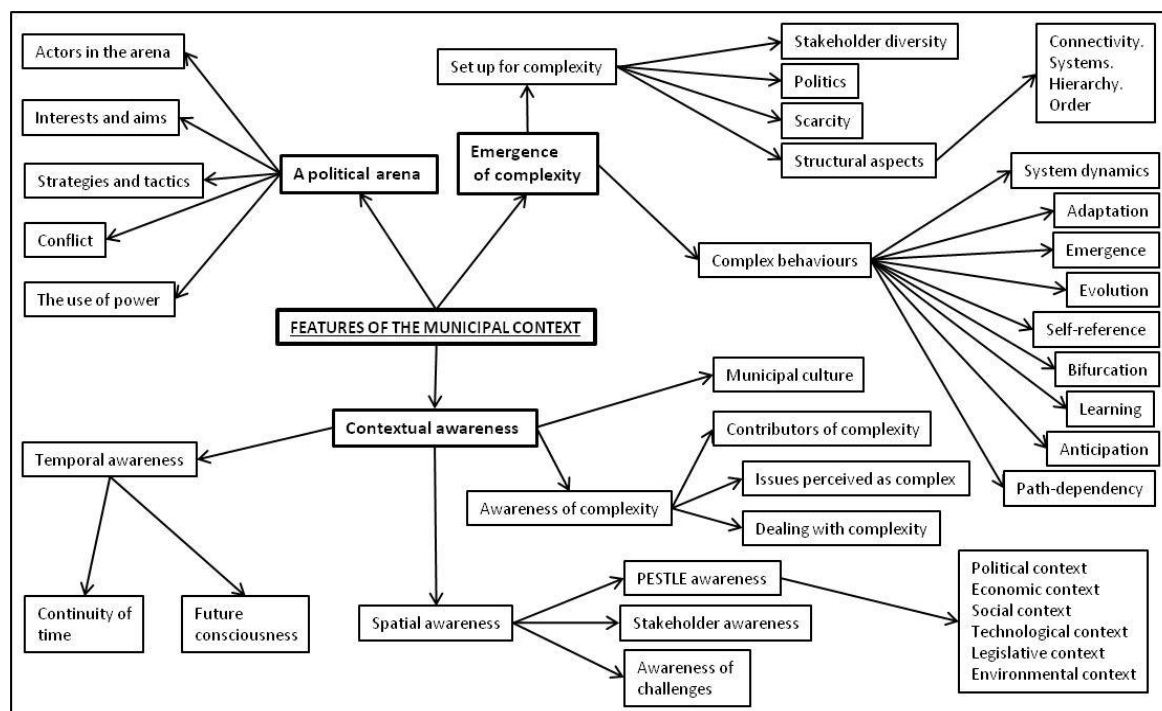
Four themes associated with this main theme were identified, namely *temporal awareness*, *spatial awareness*, *municipal culture*, and *awareness of complexity*. Finally, the initial code, *future consciousness*, and candidate theme, *continuity of time*, became sub-themes of the theme, *temporal awareness*. The theme, *continuity of time*, was defined in Section 2.7.4.4 in terms of initial codes associated with it. The theme, *spatial awareness*, 'attracted' the sub-themes, *awareness of challenges*, *stakeholder awareness*, and *PESTLE awareness*. The sub-theme, *PESTLE awareness*, was linked to several sub-sub-themes associated with the PESTLE dimensions. The theme, *municipal culture*, did not have sub-themes. The theme, *awareness of complexity*, represented the sub-themes, *contributors of complexity*, *issues perceived as complex* and *dealing with complexity*.

**Main theme: *emergence of complexity*:** The latent main theme of *emergence of complexity* was observed after reflection on the entire data set at a relatively late stage during the analysis. Themes associated with this main theme were *set up for complexity* and *complex behaviours*. After several reformulations, the theme *set up for complexity* referred to the sub-themes of *stakeholder diversity*, *politics*, *scarcity*, and *structural aspects*. The sub-theme, *structural aspects*, referred to the sub-sub-themes of *connectivity*, *systems*, *hierarchy*, and *order*. The theme, *complex behaviours*, contained sub-themes that represented the unique behaviours associated with complex systems.

The result of Phase 4 and Phase 5 is displayed in Figure 4.4 as a thematic map that contains the hierarchy of themes. The thematic map appears in tabular format in Table 4.3. The overarching theme of *features of the municipal context* is examined in terms of three main themes. These are a *political arena*, *contextual awareness*, and *emergence of complexity*.

Each main theme is linked to several related themes as explained above. The themes are linked to sub-themes that provide structure to the respective themes. The theme *temporal awareness*, for example, is linked to the sub-themes of *continuity of time* and *future consciousness*.

The thematic map, the contents of Table 4.3 and the researcher's understanding of the relationships among the themes constitute the result of Phase 5 of the thematic analysis. The next phase, Phase 6 is about the detailed analysis, definition, and naming of each theme.



**Figure 4-4 Thematic map from the Phase 4 and Phase 5 analyses**

#### 4.4.2 Implementing Phase 6 of the thematic analysis

Phase 6 consists of a detailed analysis of the refined thematic hierarchy as depicted in Figure 4.4 and as set out in Table 4.3. Both the thematic map and Table 4.3 serve as convenient visual models that reflect the hierarchical structure of the themes. The Phase 6 analysis identifies the essence of each main theme in relation to the other themes and in relation to the overarching theme: *features of the municipal context*. The overarching theme is linked directly to the research question, stated as follows:

What are the main features of the current context within which the Hessequa municipality takes decisions?

The three main themes *a political arena*, *contextual awareness*, and the latent main theme of *emergence of complexity* provide a rich picture of the context within which the municipality takes decisions. Each main theme is discussed next in terms of its definition, themes, and sub-themes. Quotes or extracts from the entire data set are used for illustrative purposes and to substantiate statements. The discussions link the analysis to relevant literature and to the research question. The discussion of each main theme concludes with a theoretical perspective on the main theme.

#### 4.4.3 Main theme: A political arena

**Theme definition:** The main theme, *a political arena*, describes the domain where politicians, officials, residents and other stakeholders with diverse motives, aims and interests interact. Individuals and groups use different strategies and tactics to gain power and influence to pursue their opposing aims and interests. When participants' goals and strategies are not aligned, conflict often erupts. Conflict is normally addressed through argumentation, debates, and voting. The political games played in this arena take place within the boundaries set by laws, policies, values, and cultural norms.

**Discussion:** This analysis of the political arena and its dynamics relates to the frameworks proposed by Pfeffer (1992), Aldag and Fuller (1993), Morgan (2006), Rainey (2009) and DuBrin (2016), discussed above. Municipalities function within a political domain or arena. Not surprisingly then, the empirical findings relate to some of the political aspects. Five corresponding themes linked to the main theme, *a political arena*, are distilled from the coded data, namely *actors in the arena*, *interests and aims*, *strategies and tactics*, *conflict*, and *the use of power*. Each theme is discussed briefly in terms of its sub-themes and supporting quotes.

##### 4.4.3.1 Theme: Actors in the arena

Four groups of actors participate in municipal politics. These are the *officials in administration*, *councillors in political structures*, *residents from communities* (within the municipal boundaries), and *other stakeholders* from outside the municipal boundaries. Features of each group of actors are discussed next.

**Officials in administration:** At the head of the administration were the municipal manager and the five directors that reported to him. The municipal manager was one of the most experienced and respected managers in local government in the province. All five directors were in permanent appointments and were properly qualified for their positions. A director remarked: *"If you look at the MM ... fifteen years at the municipality, I and three other directors have been here at the municipality for more than ten years each."* Three of the directors were qualified to act for the municipal manager. The municipal manager and his five directors shared a total of more than a century of relevant experience in this municipality. Officials were appointed on a "fit-for-purpose basis". A serving councillor noted: *"I think we sit with one of the best municipal managers in the country. We have a great team of directors. Our financial director is very good. She is very good. She has a very closed hand. She manages our finances very well."* A senior official added: *"The quality of our officials enables our council to take good decisions."*



**Table 4-3 Main themes, themes, and sub-themes observed in the coded data**

Main Themes	Definition of main themes	Themes	Sub-themes
<b>A political arena</b>	<i>A political arena</i> refers to the municipal domain, actors, their interests and aims, their strategies and tactics to gain power and influence, conflict among actors, and their use of power in pursuit of their aims. This arena generates a stream of system dynamics that reverberates throughout the municipal system.	Actors in the arena.	Officials in administration. Councillors in political structures. Residents from communities. Other stakeholders.
		Interests and aims.	
		Strategies and tactics.	
		Conflict.	
<b>Contextual awareness</b>	<i>Contextual awareness</i> refers to the awareness and consciousness of interviewees about the dimension of time, spatial variables, the municipal culture, and the phenomenon of complexity within the contextual environment in which they take decisions.	Temporal awareness.	Continuity of time. Future consciousness.
		Spatial awareness.	PESTLE awareness. Stakeholder awareness. Awareness of challenges.
		Municipal culture.	
		Awareness of complexity.	Contributors of complexity. Issues perceived as complex. Dealing with complexity.
<b>Emergence of complexity</b>	<i>Emergence of complexity</i> refers to the set of conditions that facilitate the emergence of complexity in the municipal environment, and it refers to the range of complex behaviours that are observed when contextual variables interact with the municipality*.	Set up for complexity.	Stakeholder diversity. Politics. Scarcity. Structural aspects.
		Complex behaviours.	System dynamics. Adaptation. Emergence. Evolution. Self-reference. Bifurcation. Path-dependency. Anticipation. Learning.

\*The municipality is defined in terms of a Biomatrix systems perspective in Section 4.3.

**Councillors in political structures:** The political structures consisted of councillors and were dominated by councillors. The main political actors were the governing DA, the ANC as opposition party and the FF+ as the coalition partner. The FF+ councillor played a vital and decisive role when he sided with the DA party after the 2011 elections when both the DA and ANC parties had secured eight votes each in council. Political structures in the municipality involved in decision making include the council, the executive mayoral committee, the caucuses of the governing coalition and the opposition party, the portfolio committees, and ward committees. A senior official noted: *“I think Hessequa municipality has got one of the best councils possible. I know there are challenges with some councillors ... all of them do not have matric.”*

**Residents from communities:** Still Bay was regarded as “the goose that lays the golden eggs”, namely, the relatively rich, fast-growing community consisting of many retired and knowledgeable ‘white’ people. Historic spatial development patterns separated extremely poor communities from higher income groups. The mayor shared a related concern: *“Many communities do not have the money to pay for services.”* The coastal towns provided the bulk of the municipal income. Still Bay was the only town in Hessequa with a vibrant business

chamber. The municipal council had delegated a councillor to attend all the meetings of the business chamber to strengthen the ties between the two entities.

Some towns were called “sleep towns”. Many residents from these towns were employed elsewhere. A councillor remarked:

People in sleep towns ... as in Slangrivier and Melkhoutfontein, these are sleep towns where people are unemployed. Residents of Melkhoutfontein work in Still Bay and residents from Slangrivier work in Witsand. Their mind models are completely different, and their expectations are different [from those of the affluent people].

Higher income communities used the print media and electronic media to stay informed about municipal affairs. They only attended municipal meetings when controversial issues were discussed. A councillor from a poor community remarked: *“My people do not read the local newspapers. Many of them do not listen to the radio because they are poor. They prefer meetings where they can talk and offer their opinions ... We need to differentiate among areas.”*

**Other stakeholders:** Actors from outside the municipal boundaries that might influence municipal decision making included politicians and officials from all spheres of government, consultants, academic institutions, as well as members of the networks of officials and councillors. A councillor referred to *“other municipalities, an advocate, engineers from elsewhere, engineering firms, SALGA, province [Western Cape Government]...”* as important stakeholders and resources. A key ‘stakeholder’ and important source of system dynamics was the natural environment.

#### 4.4.3.2 Theme: Interests and aims

**Officials:** The officials were very serious about their constitutional mandate, specifically service delivery. A senior official confirmed the views of her colleagues, stating that *“first priority is service delivery”*. For the senior officials it was of utmost importance to get a clean audit report annually, to stay within the constraints of both the annual budget and the long-term financial plan, and to strictly adhere to all relevant legislation. Officials were primarily driven by task interests. One director commented: *“I have passion for my work. Everything has got to do with passion. Experience I’ve got lots of. I learn every day. And I have a passion for what I learn. That is why I can do it. I have progressed well in my career because I have a passion for my work. I love what I do.”* For another director it was important to take decisions that were *“desirable for the communities ... I gauge the desirability in terms of the reaction of the community involved to the decision.”* Officials tried to maintain their proud record of eight consecutive clean audit reviews by the AG.

**Councillors:** For the politicians the focus and emphasis were somewhat different. They were also serious about service delivery in general. However, for some their main longer-term aim was to retain power in the council for personal gains and to earn an income as a councillor for as long as possible. A former councillor noted: *“Many guys go to the council, not to play a leadership role ... He goes for the money. Then he fails.”* A director commented about some of the councillors: *“They are not here [as councillors] on behalf of the communities. They are here in their own interest.”* Another director agreed, stating: *“Only a few of them [i.e., councillors] are here for the cause. Often it is about a personal or ego thing, or even financial. It becomes a career in local government.”* The relative importance of some councillors’ personal aims and interests within the political arena was highlighted by several interviewees.

Some councillors competed for the seat of the mayor, vice mayor or speaker. This stimulated a lot of bargaining when a new council was constituted. Other aims were related to their mandates to serve their wards for a specific term of service. Even the most dedicated councillors balanced their task focus with personal career aspirations. Committed councillors

were trying to address the needs of the communities they represented as their first and only priority. They would typically test the limits of the budget and the law in pursuit of their aims. The main aim of a few lesser committed councillors with limited career options was to earn a living.

**Political parties:** The ruling DA and the ANC opposition pursued different types of aims. A DA councillor summed it up as follows:

The ANC focuses on the immediate, short term, today, now. Much of the DA focus is on infrastructure for the longer term, for example sewage and road infrastructure. The DA focuses on investments in infrastructure that is often not observed, it is below the ground. The ANC focuses on visible investments that are above the ground. The ANC focuses on stuff [i.e., investments] that their supporters, voters can see above ground, housing. There is a big difference in focus between the governing coalition and the opposition. The DA focuses on infrastructure and longer-term thinking. The ANC focuses on today, short-term and visible investments.

**Residents:** Residents of all the communities were simply concerned about the short-term interests of their own towns. The focus was on the *“here and now”*, mostly disregarding the short- and longer-term priorities and needs elsewhere in the municipal area. Self-interest was the main motive. This tendency was confirmed in most of Hessequa’s towns during a recent survey of their needs. The researcher attended dozens of community meetings facilitated by municipal officials during the past 18 years in the Hessequa municipal area. The focus was always on short-term, local issues regarding the delivery of basic services, recreational facilities, and provision of local infrastructure.

**Other stakeholders:** The aims and interests of external actors were unique in each case. Provincial and national politicians and political parties pursued their own political aims within the municipal arena. A former DA councillor remarked: *“You are first a member of the DA and then you are a councillor.”* External stakeholders were involved as consultants or sources of information. Some others were involved as contractors to implement approved projects. For example, Stellenbosch University facilitated the funding and establishment of the desalination plant in Witsand as a social innovation project.

#### **4.4.3.3 Theme: Strategies and tactics**

**Officials:** Councillors and officials used different kinds of tactics to pursue their aims. Officials simply used the power of the law (i.e., legal prescriptions), internal policies, budget constraints, the requirements of the long-term financial plan, as well as their personal and positional power as levers to pursue their aims. Inappropriate proposals and requests from councillors and political structures were not accommodated or supported at all. Several directors and officials used the threat of losing a clean audit as a tactic to achieve their aims. One director was very explicit about it: *“I just say it will cost us a clean audit. But it will not. It is just to scare them off.”*

**Councillors:** Politicians used the formidable power of the democratic vote to pursue their aims and to influence decisions. Candidates in elections made dubious promises to voters to gain their support. An official remarked that it appeared as if politicians *“hand out title deeds of land”* to voters just before elections. During the past two terms the formation of coalitions was used by both the ANC and the DA as an effective strategy to gain power. A senior official referred to the following strategy: *“One of the tactics used by the DA-FF\* coalition is to prepare thoroughly for any meeting. That for me is a winning tactic. They are well prepared for any question posed to them. They can defend their positions, and, with respect, I cannot say the same for the opposition. The opposition does not read their documents ... they do not prepare at all.”* The caucus of the governing DA party confirmed that they prepared extremely well for every meeting. Members of the opposition party, in contrast, seemed to prepare poorly or not at all for meetings. This pattern was also observed by the researcher during several council

meetings. A senior official concluded as follows: *“I can state with conviction that good preparation by the governing party has the effect that they take better decisions [than the opposition].”*

The ANC opposition party mobilised the first ever peaceful protest march in Riversdale on 6 September 2019 as a strategy to table their concerns about housing issues. A senior official explained that *“protest action is a way to force any decision-making body to an extent to consider an issue. In this case it was housing”*. A former councillor explained how the ANC used other intimidation tactics during her term: *“The tactic was that aggressive people attack you during meetings and accuse you of anything. Their tactic was to silence you and to scare you.”*

Councillors often used communication strategies to mobilise public support for initiatives. Meetings were used very effectively in the poor communities where residents preferred this mode of communication. Electronic and social media were used very effectively within networked communities. A tactic used by at least one ANC councillor to frustrate the governing coalition was to be absent from workshops where important issues were discussed before decision making.

**Residents:** Residents used various strategies to pursue their aims. In addition to the formal ward committee system individuals used verbal or written communication (e.g., letters, email or the press) to communicate with the municipality. They also lobbied with either the councillors or senior officials (especially the municipal manager) to reach their individual aims. Residents in higher income towns acting collectively organised themselves formally in structures such as rate payer associations or business chambers to promote the aims of their specific towns. Residents from Kwanokuthula participated in a peaceful protest march in September 2019 to make themselves heard.

**Other stakeholders:** Stakeholders from outside the municipal boundaries used various strategies including legislation, regulations, policies, the allocation of funds, convincing arguments, and other kinds of resources to realise their goals.

#### **4.4.3.4 Theme: Conflict**

Opposing aims and interests of the different actors caused conflict. Conflict among officials and councillors stemmed from differences in opinion about budget priorities and financial issues, planning horizons, the need and relative importance of projects, and inappropriate requests from councillors that could not be accommodated legally or financially. Conflict between the political parties developed when parties disagreed about the need, relative priority, importance, or urgency of capital projects in the different wards. A DA councillor remarked about the ANC: *“They will only support decisions that benefit themselves. They will not support decisions that benefit Still Bay, Witsand or Gouritsmond.... We always try to treat all [towns] the same.”*

In a single case, the ruling ANC party used physical violence in an unsuccessful attempt to defend their position as governing party. At a council meeting in September 2011 a motion of no confidence in the ANC mayor turned the meeting into violence and extreme chaos. A former councillor recalled: *“She [The speaker] was not able to control the meeting. She was flustered... Then the ten guys came [for me], the ten street fighters, they kicked and beat me. They wanted to kill me.”* Another DA councillor also remembered: *“There was physical violence in the board room. I left the board room with injuries.”* During this meeting the ANC mayor was replaced by a DA mayor.

Differences in planning horizons caused conflict. The planning horizon of councillors was only five years, namely, the duration of one term. Conversely, the director of technical services and the director of the planning department had to plan decades ahead. One director experienced

this inconsistency very negatively and stated: *“And that battle between these perspectives is, according to me, a big stumbling block.”*

Most conflict arose when priorities had to be determined within a context of limited resources and unlimited basic needs. A former councillor remarked: *“It becomes complex when the needs are weighed up. Some people need houses, other need a motor or a street, or a park, or a sport stadium. All the needs are not priorities for the council.”* It appeared as if most conflict was caused by the economic principle of scarcity and political strife.

#### **4.4.3.5 Theme: The use of power**

The mayor, the speaker, the municipal manager, and the directors wielded their authority and positional powers derived from the constitution and municipal legislation without hesitation. Fortunately, the relationships among these actors were good. A councillor stated the following belief: *“The mayor, the municipal manager and the speaker must have a very good relationship ... This relationship is very good in Hessequa.”* Senior officials and councillors held much personal power based on their knowledge, qualifications, performance record, accolades, status, expertise, and experience. Fortunately, at this stage the councillors and the officials shared corresponding sets of basic values and principles although with some exceptions. This reality allowed all the actors to reconcile differences and to work effectively as a team. Video recordings of council meetings (available on the municipal website) illustrated that power was used with discretion during meetings.

Votes were vital in political confrontations. The ultimate power of the council was vested in the dominant vote of the coalition partners or ruling party. Caucus members of both the coalition and the opposition party were obliged to vote according to the consensus within their respective caucuses. Dissidents were disciplined. The speaker normally cast his vote as chairperson of the council. The coalition between the DA and the FF+ was maintained after a by-election in 2019 when the DA gained one ward from the ANC. The DA won nine seats out of seventeen during the 2021 municipal election and the ANC got six seats. The two minority parties got one seat each.

The municipal manager used his delegated powers and personal power as accounting officer to manage the bureaucracy strictly according to the applicable laws and policies that applied. He registered his vote against decisions that he could not support. In many cases the municipal manager *“[drew] the line”* between opposing parties either within the administration or between the administration and the political structures. The director accountable for finances established herself as a formidable and respected power: *“She call the shots and make the calls.”* The finance director guarded the flow of funds like a hawk. She simply vetoed unbudgeted expenditures. The directors possessed and used their positional power and personal power to influence decisions. This pattern was observed in council meetings, workshops, and public meetings and was confirmed by most interviewees.

The officials’ power based on knowledge, insight and understanding regarding municipal matters mostly triumphed over personal opinions and arguments of councillors and residents. At the same time, some officials abused the ignorance of stakeholders to achieve personal aims.

Individual councillors had no formal decision-making power. They had to act in teams to have effect. Although individual councillors may have had no power, they had significant influence.

The power of residents with voting rights was demonstrated during elections. Residents voted for councillors and councillors appointed the municipal manager and directors who would lead the administration. It could therefore be argued that the ultimate democratic power was vested in the hands of the more than 32 000 registered voters in Hessequa of whom about 71% turned

out to vote<sup>3</sup>. Unfortunately, the electoral colleges of the political parties at regional or provincial levels sometimes acted as powerful gatekeepers that manipulated the nomination lists of candidate councillors.

#### **4.4.3.6 A theoretical perspective of ‘a political arena’**

The political model of decision making, and the metaphor of a political arena provided useful frameworks to study municipal decision making (Pfeffer, 1992; Aldag & Fuller, 1993; Morgan, 2006; Rainey, 2009; DuBrin, 2016; Clardy, 2018). Power, politics, interests, and conflict contributed to the unpredictable and complex nature of the municipal context. Different actors had diverse aims and objectives, and different strategies to pursue their aims. Conflict arose when interests collided. Conflict typically arose when different groups competed for limited resources. Both the DA and the ANC used coalition politics to mobilise power in the municipal council. The municipal manager, directors, and many officials had positional power but also personal power and reputational power to strengthen their positions in the organisation. The leverage or effectiveness of the application of power depended on the level at which the power was applied (Meadows, 1999).

Meadows (1999) developed a hierarchical structure of levels with increasing leverage potential for the application of power to influence municipal decision making. These powers are distributed over time and space in terms of systems theory principles. The hierarchy proposed by Meadows appears in the lefthand column in Table 4.4. This hierarchy is ranked from least effective to most effective in the first column in the table. The second column illustrates how power and influence is applied through municipal laws and by internal actors. The third column indicates the frequency of the application of power at a specific level. The fourth column contains explanatory comments and examples. The logic of this framework applies to all CASSs.

Two overlapping hierarchies of power structures are observed in Table 4.4. One hierarchy was related to the suite of legislation anchored in the Constitution. The other was rooted in the statutory powers, the political structures, and the administration. Different actors in the municipal domain had access to different leverage mechanisms. The most powerful leverage was at the level of paradigms. The more powerful levers at the bottom of the list were the most difficult to change and they might take the longest time to change. Higher up the list, the weaker leverage points were easy to manipulate but they were less effective and could be manipulated over relatively shorter periods.

One of the directors understood the concept of leverage. She noted: *“If you can explain to me how we can make a huge impact with a small amount [of money], then we’ll consider it favourably. We need to take small change and make a big difference.”*

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<sup>3</sup> These figures are based on 2019 data as received from the speaker of the Hessequa municipality.

**Table 4-4 Power and leverage in the political arena**

	<b>Levels of power and leverage</b>	<b>Power actors and their instruments</b>	<b>Time intervals</b>	<b>Comments, examples</b>
12	Constants, numbers, parameters.	Council develops policies about constants, numbers, parameters; councillors make rules and administration implements them.	Continually or annually	Parameters are e.g., KPIs, subsidies, rates, taxes, standards, levies, service costs.
11	Size of buffers relative to their flows.	Financial director controls inflow and outflow of funds while monitoring the budget and financial reserves.	Continually	Size of budget, financial reserves and number of employees (relative to inflow and outflow rates) are buffers.
10	Structure of material stocks and flows and nodes of interaction.	Legislation defines bureaucratic structures; officials define organigrams, remuneration structures and employment contracts.	In terms of years	Demographic data of residents, the SDF, infrastructure layout and budgets have structure.
9	The lengths of delays, relative to the rate of system change.	Newly appointed councils can change and refocus the municipality significantly over a five-year term or over consecutive terms.	5-year cycles.	The new council appoints a new municipal manager and directors, adopts a new IDP, budget, policies, etc.
8	The strength of negative feedback loops relative to the impacts they are trying to correct against.	Council uses policies, audit committees, the delegation system, cost control measures, the long-term financial plan to control municipal processes effectively.	Continually	The use of control measures and norms are entangled with feedback loops, reporting lines, management and learning.
7	Control the gain around positive feedback loops.	Council can control the supply of low-cost housing units which drives the unlimited demand for free services. High-income residential developments generate income.	Continually	Control variables that can escalate exponentially, e.g., demand for free housing, free or discounted services, etc.
6	The structure of information flows. (Who has access to different kinds of information, and to nodes of interaction?)	The administration formally classifies information and controls access to it. Attendance of most meetings is controlled. Sharing important information often stimulates desired responses.	Continually	Sharing information about waste recycling and waste processing motivates residents to clean up their environment and to recycle waste material.
5	Rules of the system (e.g., laws, incentives, punishments, constraints)	The Constitution and legislation set rules for the municipality. The council, mayor, speaker, municipal manager and administration formulate rules and policies that drive behaviours. Incentives for investors stimulate investments.	Laws and policies are valid for years; rules change fast.	Rules and policies prescribe how officials and councillors should perform their duties and tasks, e.g., supply chain procedures and SOPs.

	Levels of power and leverage	Power actors and their instruments	Time intervals	Comments, examples
4	The power to add, change, evolve or self-organise system structure.	Changes to municipal organisational structures or new demarcations of wards or new spatial development frameworks or adjustments to policies may change the structure of a system.	Laws and policies may remain in place for years.	Self-organisation capacity enhances the resilience and adaptive capacity of the municipality.
3	The goals of the system.	The Constitution defines specific objects or goals of municipalities. Council captures its goals in the IDP and KPIs. The goals of the council direct its efforts and work.	Statutory goals are fixed. Policies change.	Constitutional goals are 'fixed' for many years; municipal goals are fixed for five years and adjusted or updated annually.
2	The mindset or paradigm out of which the entire system, its goals, power structure, rules and culture arises.	The mindset and paradigms of political parties, statesmen, great leaders and philosophers as captured in the Bill of Rights and the Constitution are reflected in municipal laws. The mindset and paradigm of councillors and officials co-define the destiny of the municipality.	Generations or multi-year intervals.	The Constitution is relatively fixed. Every 5 years a new council may redefine some systems aspects under their control.
1	The power to transcend paradigms.	A new national government or new president or new mayor or new council or new municipal manager may introduce a new paradigm.	Multi-year intervals.	Sophisticated, reflexive and wise statesmen change paradigms when needed.

Source: Meadows, 1999

#### 4.4.4 Main theme: Contextual awareness

**Theme definition:** The main theme, *contextual awareness*, referred to the consciousness, alertness, and the attentiveness of interviewees about the environment within which they took decisions. This environment existed within the dimensions of time and space and meaning. Contextual awareness also referred to an awareness about the municipal culture and an awareness (or lack of awareness) about the phenomenon of complexity.

**Discussion:** The analysis of the initial codes and candidate themes revealed the second main theme of *contextual awareness* in terms of four related themes. This main theme is discussed with reference to some of the theoretical frameworks applied in Section 4.2 above. The themes were labelled *temporal awareness*, *spatial awareness*, *municipal culture*, and *awareness of complexity*. Each theme is discussed here in terms of its sub-themes. This section concludes with a theoretical perspective of the main theme.

##### 4.4.4.1 Theme: Temporal awareness

The theme, *temporal awareness*, had two sub-themes, namely *continuity of time* and *future consciousness*. The sub-theme *continuity of time* linked data about the past, present and future. The sub-theme, *future consciousness*, referred to an awareness of variables and issues that might be manipulated in the present to avoid future risks and to exploit future opportunities.



**Sub-theme: *Continuity of time*:** The unidirectional flow of time was from past to present and into the future. The responses of most of the interviewees to the research question, prompts and follow-up questions related to either the past or the present or the future. In a few instances, interviewees linked the past with the present, or the present with the future. In no specific instance was any issue discussed spontaneously in terms of its trajectory from the past through the present into the future.

The temporal focus of councillors, officials, and political parties differed. Some interviewees focused on the short term and others on the longer term. A current councillor observed: *"In the past we struggled. There was no forward planning. It was all about managing today's crisis when there are problems, but there was no long-term planning."* Another councillor considered the longer term: *"Sometimes you need to take difficult decisions in the short term to reach long-term objectives.... Much of the DA focus is on infrastructure for the longer term, for example sewerage systems and road infrastructure."* Referring to infrastructure, another councillor noted: *"We plan ten to twenty years ahead."*

Some of the officials were more concerned about the immediate- and short-term issues that required their immediate attention than about issues relating to the longer term. Only a few directors indicated that they balanced their focus between the short term (less than one year), medium term (up to five years) and the longer term (up to 20 years). Such a longer-term focus is required for town planning, spatial development planning, housing projects, and infrastructure development. The ten-year financial plan defined the envelope of financial parameters within which municipal finances had to be managed beyond the traditional five-year planning horizon.

Political governance of the municipality had followed a pattern of instability and a few cases of discontinuities. Good and stable governance had been observed under both the ANC majority rule and the DA majority rule. However, governance under the ANC coalition and later under the DA coalition was very unstable and difficult. A director remarked: *"In our case ... the coalition politics since 2011 has had a big effect on our decision making. It is a stable environment versus an unstable environment."* The key finding was that changes in the political leadership of the municipality were likely to continue to present potential bifurcation points and periods of instability. Political changes caused system dynamics. It introduced instability and uncertainty into the administration, the political structures, and the communities. Officials and councillors remarked that local municipal politics had evolved towards maturity over the last few terms. Observations by the researcher confirmed this trend.

Several directors and councillors emphasised the importance of the continuity of the tenure of the municipal manager, the directors and also many senior officials that spanned multiple five-year terms within the municipality. A senior official confirmed: *"All the directors and the senior managers at the municipality have got permanent appointments."* A director stressed the advantages of permanent appointments: *"[It] brings stability to the organisation because now you can follow a longer-term planning strategy."* Another director linked the good performance of the municipality to *"the stability of the top management structure. It is not a structure that changes often... We have served various councils through various terms. Here is not a big turnover of top management."* The directors and senior officials contributed to continuity of the administration during political changes and unstable periods.

Several interviewees referred to the continuation of (undesired) historic systems and practices into the present. Due to the feature of path-dependency and the built-in 'momentum' of systems it is difficult to change the patterns of development of these systems (e.g., infrastructure systems, town layouts, housing developments and spatial development frameworks), bureaucracies, paradigms, worldviews, and culture. These systems only change at a very slow rate.

Interviewees did not mention global megatrends or cyclical patterns of development over the longer term that might influence the municipality.

**Sub-theme: *Future consciousness*:** Apart from isolated concerns about longer-term infrastructure developments and financial viability of the municipality over the next twenty years the focus of most interviewees was basically limited to the short- and medium-term. The municipality did not make use of formal environmental scanning processes, foresight processes or scenario planning. Concerns about challenges such as the longer-term sustainability of the financial model of the municipality were not balanced by planning of initiatives in support of a desired future. The concept of future consciousness was a relatively underdeveloped concept in the municipal domain and constituted a blind spot for the decision makers.

#### 4.4.4.2 Theme: *Spatial awareness*

The theme *spatial awareness* revealed aspects of interviewees' perspectives on the environment. It revealed *what* they observed in the municipal environment and *how* they observed it. The theme also revealed *gaps* in their awareness. The main sub-themes that contained the coded data were the following: *PESTLE awareness*, *stakeholder awareness* and *awareness of challenges*.

**Sub-theme: *PESTLE awareness*:** The sub-theme *PESTLE awareness* contained the responses that related to aspects within the political, economic, social, technological, legislative, and natural (i.e., PESTLE) environments. Most of the coded data was associated with this sub-theme. Almost all the interviewees mentioned at least one or a few aspects of the context that could all fit into the dimensions of the PESTLE framework. No interviewee addressed the entire spectrum of 'PESTLE' aspects. None of the interviewees used a PESTLE framework (or any other comparable type of framework) to frame their responses to the research question. Most responses were associated with local, regional, or SA issues. Apart from responses about climate change, global warming, and exchange rates very few comments were made about any other continental or global variables that might affect the local municipality. All interviewees were acutely aware of current municipal legislation and the financial constraints. However, new legislation that might influence the municipality in future was not considered or mentioned.

**Sub-theme: *Stakeholder awareness*:** Interviewees were very aware of the wide spectrum of important stakeholders of the municipality. Basically, all interviewees regarded the local communities being recipients of municipal services as the most important stakeholders. Other important stakeholders included actors from other spheres of government (especially the Western Cape Government and the national and provincial treasury), Eskom as unreliable electricity supplier, legislators, political parties, payers of rates and taxes, and, of course, the SA AG. Important new stakeholders might include traditional leaders as council members. All politicians were very aware of the actions of their counterparts in opposition parties. The natural environment, rivers, the ocean, weather patterns, plant, and animal life were not necessarily perceived as stakeholders yet, but as a source of risks and scarce resources.

**Sub-theme: *Awareness of challenges*:** This sub-theme, *awareness of challenges*, contained interviewees' perceptions of contextual challenges. The officials regarded the longer-term financial sustainability of the municipality as their priority challenge. A director referred to the cost implications of new legislation for the municipality when he remarked: "*It becomes absurd. Government brings in new legislation ... but it becomes unaffordable to satisfy all the requirements, for example water quality from sewage works.*" Variables such as low economic growth rates, the increasing demand for free basic services, social challenges of unemployment and unemployability of unskilled job seekers, poverty and inequality put pressure on financial resources. Increases in taxes, rates, levies, and cost of services

continued to increase at rates much higher than the economic growth rate of the local economy. The maintenance and expansion of infrastructure posed challenges. A director remarked: *“Our infrastructure outside is disastrous. They won’t like it if I say it, but it is a time bomb.”*

Officials faced two other related and important challenges. One challenge was to always receive a clean audit report from the AG. A director remarked: *“We’ll never do things in Hessequa ... that will threaten our clean audit.”* The other challenge was to compile an annual budget that balanced within the constraints of the long-term financial plan and challenging economic conditions. Politicians faced the challenge to stay in power. Councillors were challenged by residents of wards in poor areas to satisfy their unlimited needs for necessities, and the need for infrastructure in the fast-growing coastal towns, especially Still Bay.

#### **4.4.4.3 Theme: Municipal culture**

The theme *municipal culture* addressed the shared values, norms, beliefs, and sense-making that co-defined how different actors interacted with one another and how they behaved. Key words that described the shared culture were integrity, professionalism, order, discipline, and respect. The following quotes reflected a consensus among interviewees and served to illustrate these values.

A director confirmed the importance of discipline and control: “I just do not do anything that is outside legislation.” She added: “Once the controls go, the funds disappear. Then everyone starts to do the wrong things. So, let’s keep the controls.” A former councillor commented on the value of respect: “Officials have always had great respect for councillors ... From the council they also had respect for the officials.” A director confirmed that: “People treat one another with great respect, and they listen to arguments ... Discipline is good still ... Here is a good discipline of control over personnel.”

The municipal culture was based on Christian values. A councillor explained: “We care for one another in our community. Religion is always important. We can live our religion here. We talk about the Christian religion. And we put it in our IDP.” A very humble councillor confessed: “I always trust the Lord.”

Solid relationships built on trust and respect existed within most of the municipal subsystems. Protocols and agreements were honoured. Meetings were conducted professionally, orderly and in a disciplined manner. A director appreciated the effectiveness of council meetings: *“These council meetings last an hour or less.”* Councillors and officials always addressed one another formally during work hours and meetings as ‘Councillor’, ‘Speaker’, ‘Mayor’, ‘MM’, ‘Sir’ or ‘Madam’. Trust levels among actors varied from high trust levels within political parties to very low levels of trust between opposing parties. Councillors from different political parties tended not to trust one another. Most councillors interviewed (from all parties) did trust at least some of the senior officials, directors, and the speaker. Councillors pretended not to interfere with the work of administration, but officials offered a different view. Officials regarded political interference with their work as an important risk. Often the municipal manager had “to draw the line” between what was acceptable behaviour and what was not. A senior official remarked: *“Our MM has a very clear understanding of where to draw the line between officials and councillors. The MM registers on record his vote against issues when he disagrees with the council.”*

Although councillors and officials might participate in robust debates in meetings the relations between them were generally good and relaxed outside of meetings. In many instances there was good cooperation between the governing coalition and the opposition party. A director remarked: *“Here I experience a culture of cooperation, even between the different political parties.”* A councillor said: *“There is a much more flexible relationship between us as [opposition] parties. This I can promise... It says a lot about political maturity.”*

Several interviewees detected subtle nuances and undertones of racism in the way people talked to one another, especially the way the ANC councillors talked. A DA councillor noted: *“This is the trump card of the ANC. They always play the race card. Why they do it I don’t know.”* An ANC councillor remarked: *“I am sometimes racist, man, when they are racist, then I play the race card.”* Councillors from the opposition continually talked about *“our people”* (the coloured people) and *“your people”* or *“the white people”* to the amusement of others. Council meetings were dominated by male voices. A long-serving councillor noted: *“Females seldomly talk or remain quiet.”*

#### **4.4.4.4 Theme: Awareness of complexity**

One of the standard follow-up questions related to the nature of the municipal context was: *“What does the concept complexity mean to you?”* Some of the responses are captured here. The theme *awareness of complexity* refers to the way the interviewees understood and described the concept of complexity. Three sub-themes were distilled from the coded data, namely *contributors of complexity*, *issues perceived as complex*, and *dealing with complexity*.

**Sub-theme: Contributors to complexity:** The sub-theme *contributors of complexity* referred to data about factors that contributed complexity to decision issues. Several interviewees regarded the human factor as a significant contributor to complexity. A director noted: *“The human influence is the biggest single factor that causes complexity ... The influence of councillors, I say it straight, this complicates decisions significantly.”* Other interviewees added *“envy”*, *“politics”* and *“difference in perspective”* as contributing factors.

Several interviewees agreed that complexity was observed *“when many factors play[ed] a role.”* Several interviewees believed that *“legislation and regulations”* contributed to complexity. A councillor defined complexity as follows: *“That is when many more factors play a role, like when you need to take a decision together with national government, provincial government, and the district municipality... for example, the harbour development in Still Bay.”* Interviewees believed that uncertainty contributed to complexity. A director noted: *“Complexity is increased by the [uncertain] results of a decision. We focus a lot on consequence management.”*

Diversity contributed complexity to decision making. A councillor remarked: *“The towns differ from one another. What works for one town doesn’t work for another town. These are some of the issues that render decision making difficult.”* A senior official argued that *“interpretation ... of simple and clear issues in legislation”* by different parties contributed to complexity. Interpretations differed. The interpretation of legislation by the AG sometimes differed from that of the municipality. A director added: *“The points of view of government changes.”* Many variables in the municipal context were dynamic and introduced complexity to the context.

A key finding here was that most interviewees were able to identify several individual factors that contributed to complexity, but none elaborated on the interplay and systemic interdependence of these factors. The apparent lack of awareness of the systemic nature of contributory factors might have been the result of the absence of a system thinking ability among interviewees.

**Sub-theme: Issues perceived as complex:** The sub-theme, *issues perceived as complex*, referred to data about interviewees’ use and understanding of the term *complex*. Interviewees perceived different types of issues as *“complex”*. Issues that they regarded as *“complex”* are grouped here as either *complicated issues* or *complex issues* (see Table 3.5 in Chapter 3 for the definition of the terms *complex* and *complicated*). *Complicated issues* (incorrectly) perceived as *complex* included matters such as *“electricity tariffs that are complex”*, *“technical matters”*, *“infrastructure”* and *“legislation and regulations that are complex”*. A former mayor said: *“Often there are complex decisions because they are technical ... when the help of officials is required.”* Some of the interviewees used the terms *complicated* and *complex* interchangeably.

Many issues were appropriately perceived as complex by interviewees. A director remarked quite accurately: “*Housing is a complex issue.*” Another director expressed this belief: “*The most complex challenge for us is the allocation of limited funds for the maintenance of the systems and infrastructure of the different towns.*” Interviewees regarded the harbour development in Still Bay, the establishment of the solar-powered reverse-osmosis water purification plant in Witsand, the development of an abalone farm near Gouritsmond, the allocation of land for housing and small-scale farmers in Heidelberg, and the control of dogs in towns as complex matters. Most interviewees were able to recognise complex matters without knowing exactly which features of an issue rendered it complex. In general interviewees found it difficult to explain why an issue was complex.

**Sub-theme: *Dealing with complexity*:** The sub-theme, *dealing with complexity*, referred to data on the different ways decision makers dealt with decision issues they perceived as complex. Once councillors or officials recognised and framed a decision issue as complex, they normally consulted the residents involved and affected, and they also involved experts. A councillor aptly remarked: “*When you deal with complex decision issues, don’t try to be clever, involve experts and then decide*”. Another councillor used the following inappropriate and reductionist strategy to address “*complex issues*”: “*Many factors play a role, and you have to prioritise these factors and then you handle them piece by piece. Look, you eat an elephant, you start with the toe, foot and then the leg and you continue like this to reach your goal.*” When officials faced issues perceived as complex, they tended to involve higher levels of authority to address the issue, or they consulted knowledgeable people within their networks.

Important findings from this section were the following: Interviewees made a clear distinction between simple matters and matters that were not simple and clear. Interviewees lacked a framework to distinguish between complex and complicated phenomena or issues, namely, issues that are not simple and clear. They also lacked a vocabulary and framework to discuss the characteristic features and behaviours of both complicated and complex decision issues.

#### **4.4.4.5 A theoretical perspective on ‘contextual awareness’**

Once the main theme, *contextual awareness* (of decision makers), was understood one could devise ways to enhance the decision-making capacity of decision makers. The *temporal awareness* of most interviewees (i.e., both officials and councillors) was shorter than five years ahead. In a few cases, officials and councillors demonstrated a future awareness extending decades into the future when infrastructure and spatial development were discussed (Lombardo, 2006). Apart from references to global warming, climate change and demographic trends there was no concerted effort to explore megatrends that might have positive or negative implications for the municipality. A better understanding of the concepts of path-dependency, future consciousness and anticipation might enhance decision-making skills.

The *spatial awareness* of interviewees was primarily focused on the surface level (in terms of a causal layered perspective) and much less on the systems level (Inayatullah, 2004). The deeper conceptual levels were effectively ignored. Basically, all the responses to the research question could be accommodated within a PESTLE framework. However, no single interviewee offered a complete PESTLE analysis of the perceived context. Some interviewees demonstrated at least a basic systems perspective and understanding. Most of the interviewees did sense the complex nature of complex phenomena but they probably lacked the understanding and vocabulary to discuss the unique features of complicated and complex systems, respectively (Poli, 2013; Preiser *et al.*, 2018). Most interviewees discussed the municipal context in terms of the right hemisphere only (i.e., the upper right-hand and the lower right-hand quadrants) of the integral framework (Esbjörn-Hargens, 2009). All these gaps in the spatial awareness of interviewees constituted a huge potential for development.

Most interviewees had an *awareness of challenges* such as poverty, unemployment, inequality, scarcity, socio-economic problems, political challenges, and climate-change effects (Glenn & Florescu, 2017; The Millennium Project, 2020). The lack of both a formal environmental scanning mechanism and a forum with an anticipatory capacity that could evaluate potential challenges and risks, left opportunities to establish an innovative decision-support structure.

Most of the interviewees were aware of the many aspects of the *municipal culture*. They perceived many aspects as favourable. Although the municipality functioned in a political context, the culture promoted good and professional performance in general. The existing culture created an environment that was conducive to learning and development.

Interviewees had an intuitive appreciation and an *awareness of complexity*, but they did not understand the nature (i.e., the features and the behaviours) of complex systems as discussed in Section 3.2. Almost all the interviewees regarded the context as complex, uncertain, dynamic, changing, unpredictable and unmanageable. However, they did not have access to the available resources and knowledge that might assist them to deal more effectively with the features of a VUCA environment.

#### 4.4.5 Main theme: Emergence of complexity

**Theme definition:** The main theme, *emergence of complexity*, referred to the preconditions for complexity found in the municipal context and to the distinctive behaviours associated with CAS that were observed in the municipal environment. This main theme was structured around two themes, namely *set up for complexity* and *complex behaviours*. The theme, *set up for complexity*, represented coded data about factors that contributed to the emergence of complexity in the municipal context. These factors clustered around four sub-themes: *Stakeholder diversity*, *politics*, *scarcity*, and *structural aspects*. The sub-theme, *structural aspects*, represented the following sub-sub-themes: *connectivity*, *systems*, *hierarchy*, and *order*.

The theme, complex behaviours, represented several sub-themes that contained different types of CAS behaviour. These sub-themes were system dynamics, adaptation, emergence, evolution, self-reference, bifurcation, path-dependency, anticipation, and learning.

**Discussion:** The main theme *emergence of complexity* was a latent theme that was only observed after much reflection about the data and initial codes, produced through an inductive thematic analysis. This main theme was discovered after many failed attempts to make sense of a large volume of scattered data and initial codes that seemed to be redundant at the time. The fact that the data was scattered randomly in the data set made it particularly difficult to observe these thematic patterns. Though, with the benefit of hindsight, it appeared to be an obvious theme.

The main theme, *emergence of complexity*, had two themes, namely *set up for complexity* and *complex behaviours*. The structure of each theme is addressed here.

##### 4.4.5.1 Theme: Set up for complexity

The theme, *set up for complexity*, referred to a combination of conditions that co-produced a complex municipal context. The following sub-themes were distilled from the coded data: *Stakeholder diversity*, *politics*, *scarcity*, and *structural aspects*. Each sub-theme contains initial codes that refer to aspects that introduced complexity to the municipal environment. Interviewees talked about the nature of the context without necessarily realising that the interaction of all these random aspects contributed to the emergence of complexity.

**Sub-theme: *Stakeholder diversity*.** The sub-theme, *stakeholder diversity*, contained data about the different types of stakeholders involved in municipal decision making. Numerous stakeholders or actors with diverse needs, interests, aims, viewpoints, social conditions, demographic features, levels of education, and strategies interact within the municipal context. Thousands of residents have the right or need to interact with decision processes. The spectrum of stakeholders includes politicians, officials, legislators, residents, consultants, academics, contractors, and members of the public. The diversity of stakeholders and their endeavours to realise their goals introduce the potential for system dynamics and complexity.

**Sub-theme: *Politics*.** The sub-theme, *politics*, referred to data about political activity within the municipal context. The entire political arena was a source of change events that initiate system dynamics. Politics was a key contributing factor to the complexity of the municipal context as explained above in terms of the metaphorical main theme, *a political arena*.

**Sub-theme: *Scarcity*.** The sub-theme, *scarcity*, (derived inductively) referred to data about the economic concept of scarcity (Miller & Meiners, 1986:20). Competition for scarce economic resources introduced a continuous stream of change events and system dynamics with repercussions throughout the municipal context. Political parties competed for limited funds in the capital budget. A councillor from the opposition representing a poor community remarked: “*Take the budget, for example. I experience it as racist that my ward gets so little, and Still Bay gets so much.*” A senior official provided some perspective:

Still Bay approves more building plans than the rest of Hessequa. There is a [growth] trend in Still Bay. It makes absolute sense that a large part of the capital expenditure is linked to Still Bay because that is where the development takes place. Those developments generate income for the municipality. I understand that.

These extracts illustrate how scarcity and perceived racism introduced conflict and dynamics. Councillors competed for a next term in office. Directors competed for resources for their directorates. Officials competed for promotion. Employees and their unions demanded better remuneration packages. Contractors competed for contracts. Unhappy residents mobilised a protest march for housing and vacant land. Residents demanded more services for less money. Taxpayers wanted to pay lower rates and taxes. Markets tended to balance competition for scarce resources. The phenomenon of scarcity was a key contributor to system dynamics and complexity in the municipal context.

**Sub-theme: *Structural aspects*.** The sub-theme, *structural aspects*, was associated with the following sub-sub-themes, namely *connectivity*, *systems*, *hierarchy*, and *order*. The first two sub-sub-themes, *connectivity*, and *systems*, describe features that contributed to complex behaviours. The last two sub-sub-themes, *hierarchy*, and *order*, tended to counteract complex behaviour.

**Sub-sub-theme: *Connectivity*.** The sub-sub-theme, *connectivity*, represented data about the interconnectivity among actors involved in municipal decision making. Interviewees confirmed that stakeholders and actors within the various PESTLE domains were connected through multiple means of connectivity. Many stakeholders were mentioned in the municipal communication policy and the IDP (Hessequa municipality, 2022). Networks, such as ICT networks, computer systems, social media networks, radio, television, and telephones, connect actors and stakeholders. In other cases, meetings, public consultation sessions, workshops, social events, formal and informal discussions serve as means of interaction. Connectivity among different actors is also introduced through weather and climate systems, markets, infrastructure systems, service delivery systems, legal systems, transport systems, financial systems, economic systems, technological systems, and other systems in nature.

**Sub-sub-theme: *Systems*.** The sub-sub-theme, *systems*, represented data about municipal systems that were involved in municipal decision making and the implementation of decisions.

The administration was based on sophisticated systems, processes and structures that ensured effective decision making and administration. Interviewees referred to the delegation system, legal systems, decision-making systems, the budget system, political and administrative systems, financial systems, communication and coordination systems, governance systems, and succession planning strategies. The administrative system was managed very professionally and strictly according to legislative prescriptions.

**Sub-sub-theme: *Hierarchy*:** The sub-sub-theme, *hierarchy*, represented data about hierarchical structures within the municipal environment. Local government was structured within a system of cooperative governance. Both the administration and the political domain were hierarchically structured according to bureaucratic organisational principles. Legislation was structured according to constitutional prescriptions. Decision issues were processed according to a hierarchy of decision forums. The delegation register was structured according to a hierarchy of levels of decision-making power and authority. Delegations were cascaded downwards from higher to lower levels and feedback flowed in the opposite direction. Even the year planner was structured according to a hierarchy of meetings, audits, reports, and other milestones.

**Sub-sub-theme: *Order*:** The sub-sub-theme, *order*, referred to data about aspects that introduced order into the municipal environment. The bureaucratic design principles of both the administrative and the political structures promoted order. A key feature of a bureaucracy is indeed order and discipline. Meetings, documentation, offices, and meeting venues in the municipality displayed the virtues of order and discipline. A director referred to the order and discipline of processes when she noted:

And then, the context within which we operate internally, it is always within the framework of, for example, legislation, policy, SOPs [standard operating procedures], regulations, that type of framework that we established for ourselves, and then also the delegations... This is extremely important.

The political structures within the municipality and the structures of the political parties were subject to rules, governance processes and norms that introduced order. Actors, such as the speaker, mayor, whips of the various parties, the municipal manager and directors, maintained order within their respective domains of responsibility. Even documentation, such as agendas, minutes of meetings, agenda items and policies, reflected a culture that appreciated order.

Disorder was observed during rare occasions at public meetings in towns when unreasonable residents interacted with officials and councillors. Two former councillors discussed an occasion when complete chaos erupted in the municipal board room during a formal council meeting in September 2011. This event, however, was the exception.

#### **4.4.5.2 Theme: *Complex behaviours***

The theme, *complex behaviours*, captured data about the different modes of behaviour of actors and systems. An inductive process was followed to identify and code all types of behaviour of actors in the municipal context. An initial code, titled *behaviours*, captured all these behaviours (see Table 4.2.). Although the interviewees used their own terminology to describe behavioural aspects of actors and systems their observations could be reframed retrospectively through a complexity lens as the unique behaviours of a CAS. Therefore, terminology associated with the complexity sciences was used here as codes and candidate themes. The sub-themes of *system dynamics*, *adaptation*, *emergence*, *evolution*, *self-reference*, *bifurcation*, *path-dependency*, *anticipation*, and *learning* were observed in the empirical data.

**Sub-theme: *System dynamics*:** The sub-theme *system dynamics* referred to the change effects in interconnected systems and subsystems caused by internal or external



perturbations. System dynamics could be activated by changes in any interconnected system. Typical change events within the Hessequa context were political (e.g., elections or coalition formation), economic (e.g., interest rate changes or the 2008 financial crisis), social (e.g., a protest march such as the one of 6 September 2019 in Riversdale), a pandemic (e.g., the Covid-19 pandemic), technological (e.g., the implications of 4IR, a cyber-attack or infrastructure failure), legislative (e.g., a new law or policy), or environmental (e.g., extreme weather events, veld fires, local climate-change effects). A “black swan” change event, such as the Covid-19 pandemic, introduced non-linear, unexpected leverage effects that affected the entire context. Subsequent feedback processes were numerous. Challenging economic conditions, made worse by the pandemic, reduced the income streams of the municipality, and escalated the need to provide aid to indigent groups of residents. As the supply of free houses increased, a positive feedback loop drove the demand for free services. Negative feedback loops, such as expenditure control, drove service standards down to balance the budget.

**Sub-theme: *Adaptation*:** The sub-theme, *adaptation*, referred to data that illustrated how municipal systems self-organised in order to adapt to a changing context. Both the administration and the political structures had to adapt to reorganise or self-organise at the beginning of each five-year term under new political leadership. New actors developed a new IDP, a new SDBIP, new KPIs, new policies, a new delegation system and new meeting structures. The Covid-19 pandemic, for example, required a significant degree of self-organisation. New laws and regulations required continual self-organisation and re-arrangement of structures, systems, and processes. A director explained how new regulations regarding “*consequence management*”, “*cost containment*”, “*anti-corruption*”, and “*strategic risk management*” became key variables that required a lot of reorganisation and adaptation.

**Sub-theme: *Emergence*:** The sub-theme, *emergence*, represented data about emergent phenomena observed within the municipality. The capacity of a municipality to govern is an emergent property. The capacity to develop and implement an IDP, an SDBIP, KPIs, an annual budget, a new policy or by-law is an emergent capacity co-produced by the organisation’s design intent, aims and objectives, officials, councillors, structures, processes, residents, directorates, physical infrastructure, communication systems, the context, and a legislative framework. The capacity to render basic services is an emergent ability.

**Sub-theme: *Evolution*:** The sub-theme, *evolution*, referred to data about evolutionary processes observed within the municipal environment. Over time, the municipal culture had evolved from an earlier state rooted in the *apartheid* context to its current more advanced state of development. The current culture appreciated women and their voices, and representatives of minority groups in leadership positions. Traditional leaders would soon be accommodated in the political structures of the municipality. The evolving municipal culture and legislative frameworks accommodated and appreciated gender, language, race, and religious diversity. Levels of trust, respect, and collaboration among diverse groups had improved. The more sophisticated and evolving culture supported a more efficient and effective municipality. Evolutionary processes continued to co-produce a municipal context that became more complex and more developed.

**Sub-theme: *Self-reference*:** The sub-theme, *self-reference*, reflected data about the ability of the municipality to collect information about its own functioning, and to use such information to influence that functioning through self-reflection and self-observation (Geyer, 2001). Self-reference also referred to the capacity of the municipal institution to maintain its own organisation and identity despite changes in its internal and external environments. The basic character of the municipality remained the same after elections, after administrative changes, a change in governing party or a change in legislation. In other instances, the capacity to self-reflect and to learn enabled the municipality to adapt and to self-organise without changing its basic features.

**Sub-theme: *Bifurcation*:** The sub-theme, *bifurcation*, referred to data about bifurcations or divergent development trajectories. Every five years the uncertainty of an election outcome represented a bifurcation point. When an opposition party or a new coalition became the ruling party, the possibility always existed that significant or surprising changes could be introduced into the municipality. Implementation of a new law that could introduce new actors (e.g., traditional leaders) to the council could cause bifurcations as a result of new coalitions. Several directors and the municipal manager would be retiring soon. The appointment of incompetent people or successors with a radically different vision for the municipality could cause either a bifurcation or at least new system dynamics.

**Sub-theme: *Path-dependency*:** The sub-theme of *path-dependency* captured data that illustrated how historic patterns or events continued to influence the current and future operations of the municipality. Path-dependent complex systems could have a built-in momentum that might carry historic features of the system or its subsystems into the future. A councillor remarked: “*The spatial planning, and other types of planning are still based on racist, apartheid planning with which we continue. Take for example housing projects ... They are always at the outer edge of towns.*” The financial model of the municipality had remained unchanged for many years. It was still based on the original design and assumptions that did not fit the current reality. The budget was path-dependent in the sense that unimportant budget items tended to remain on the budget. A former councillor recommended a zero-base budgeting approach and said: “*I questioned the municipal personnel budget because ... the budgets were based on the previous year’s personnel count plus vacant positions that were never filled.*” Traditions and habits from the past and physical infrastructure investments were difficult to change once they were established.

**Sub-theme: *Anticipation*:** The sub-theme, *anticipation*, was associated with data about some level of future consciousness among interviewees and their ability to recognise contextual variables and trends that might hint at possible future favourable or unfavourable scenarios. Several officials anticipated that the financial model of the municipality might not remain viable in the longer term. Others anticipated that socio-economic conditions would put more pressure on the municipality to supply additional housing and more free services. Still others expected infrastructure systems to collapse due to insufficient maintenance. An official used the metaphor of a “*ticking time bomb*” to describe the latter situation. The anticipatory capacity of the municipality was very basic and was based on intuition rather than professional foresight activities.

**Sub-theme: *Learning*:** The sub-theme, *learning*, was linked to data about the capacity of the municipality to learn lessons and to act in terms of the learning. The sub-theme of learning had three sub-sub-themes. *Learning about decision issues* preceded the decision process. This type of learning was required to enhance the chances of taking good decisions. Such learning took place in facilitated workshops normally attended by experts, officials, councillors, and the public. An ANC councillor noted: “*When policies are workshopped, everyone participates in the debate. Then people find one another. Everybody then accepts the policy.*” Such learning informed policy formulation and was considered during decision making.

The sub-sub-theme of *succession planning* referred to a second type of learning which was focused on the future need for skilled officials. This learning took the form of mentoring and coaching of individuals earmarked in succession planning. A director noted: “*I train them so that they know exactly what a municipality is all about.... Then I tell [them] how I think about the issue.*” Another director commented: “*We involve the internal candidate with everything, take him with for exposure. He must stand by and listen because he is the next generation.*”

A third type of learning was captured in the sub-sub-theme, *on-the-job training*. Personnel in the finance department learned a lot from very critical external auditors. A senior official remarked: “*They were petty. With our first audit we got 105 queries. But I learned a lot from*

them, about how they audit. We processed all 105 queries. We determined what went wrong and put things in order to prevent a recurrence of the same error ever again.” In this way learning was integrated with the day-to-day activities of the officials.

#### **4.4.5.3 A theoretical perspective on the ‘emergence of complexity’**

The above analysis indicated that the municipal institution was constituted in such a manner that it allowed for the emergence of complex adaptive behaviour at the macro level of the ‘municipal system’ and its subsystems. Factors that contributed to the complex nature of decision making in the municipality were the nature of decision issues, scarcity, politics, decision makers’ aims and objectives, diverse stakeholders’ interests, dynamic decision processes and the fluid context within which decisions were made. These findings were aligned with those of Rhodes (2007), Teisman *et al.* (2009) and Rhodes *et al.* (2011).

Diverse actors in the political arena were systemically interconnected with numerous other dynamic elements within the municipality and outside. Interconnectivity allowed for interaction (Cilliers, 1998). Scarcity, political strife, and inequality due to differences in levels of authority, power, education, income, and status caused system dynamics that drove the municipal system away from equilibrium conditions (Rhodes, 2007; Rhodes *et al.*, 2011). All these factors co-produced the preconditions for complexity. They enabled complex behaviours.

Complex systems exist at the boundary between chaos and order (Kauffman, 1993). The bureaucracy, legislation, policies, shared culture, and various governance systems created and maintained order in the municipality, mostly through negative feedback loops. Without these instruments of order, the diverse demands, interests and aims from all the actors would have driven the municipal system into a state of disorder (Dostal *et al.*, 2005). This is indeed what is observed at most other municipalities in SA where there is a lack of order and control (Jonas, 2019; AG, 2021; Corruption Watch, 2021).

A basic argument in this text is that the decision-making skills of councillors and officials could be enhanced if they understood the nature of the municipality as a CAS in relation with its context in terms of a complexity perspective.

## **4.5 Chapter summary and conclusions**

Each main theme covered in this chapter is summarised below, namely the external context, the internal context, and the corresponding empirical findings. The main conclusions regarding the contextual environment are summarised as well.

### **4.5.1 The external context**

The contextual analysis revealed that important external and internal factors and realities influenced municipal decision making. The PESTLE analysis revealed that numerous national, continental, and global forces, megatrends, risks, and wicked challenges impact on the municipality. Phenomena, such as national political instability and fragility, very low rates of jobless economic growth, social challenges of inequality, unemployment and poverty, rapid technological development, legal frameworks, and the effects of climate change had a direct impact on decision making.

The CLA analysis illustrated how the wicked challenges of unemployment and the local impact of climate change were intertwined with systemic problems at different layers of causality. The analysis illustrated that complex adaptive and wicked problems could not be *solved* at a surface level or at a systems level. Complex issues would have to be *dissolved* by addressing the underlying structural issues at the conceptual levels. The CLA revealed that higher levels of thinking at all levels of government and society were required to address wicked challenges.

The systems analysis showed that municipal systems and decision issues were systemically integrated with natural ecosystems and with other human activity systems that spanned local and global boundaries. Non-linear dynamic feedback loops with time delays and strong leverage effects could either enhance or dampen system behaviour in unpredictable ways. A systems perspective could sensitise the decision maker for cause-effect relations between system variables, delayed and leverage effects, the interconnectedness of systems, and the uncertainty and unpredictability associated with their behaviours. A systems perspective would create an awareness of the future impacts of current decisions and the possible unintended consequences thereof. A systems paradigm would differ fundamentally from the reductionist and linear Newtonian paradigm. A Biomatrix systems perspective could provide a comprehensive framework that could be used by decision makers to frame and to address systemic issues.

A CAS perspective would create awareness about the unique behaviours and features of complex and adaptive challenges and systems. A CAS framework would enable the decision maker to detect and understand the abilities of a CAS to self-organise, to adapt and to evolve or co-evolve when conditions changed. An understanding of a CAS could allow a decision maker to identify early warning indicators of bifurcation points and possible phase changes when a system approached a punctuated equilibrium situation or bifurcation point. It could create an understanding that dissipative structures needed a continual flow of resources to maintain functionality of the system. An understanding of CAS would help the decision maker to realise that the feature of self-referentiality would continue to recreate an undesired system unless the ethos and conceptual design of the system was transformed and changed fundamentally. An awareness of path-dependency would help an observer to understand that historic patterns of evolution and development of systems had a built-in momentum that continued through the present into the future. A wise and anticipative leader would realise that a CAS possessed the capacity to unlearn and to learn in order to improve performance, to reduce risks and to exploit opportunities in future. An awareness of the power of leverage points and the importance of the law of requisite variety adjusted for complexity would enhance a decision maker's skills.

A temporal perspective would sensitise the decision maker to the continuity of time from past to present and into the future. A future consciousness would create an awareness of the possible short-, medium- and long-term implications of all decisions. It would sensitise the observer to cyclical patterns of change in multiple dimensions and to the rhythm of time. A future awareness would empower the decision maker to imagine and to create ideal, desired, and preferred futures that would be of a different nature than currently expected futures.

The integral framework illustrated how all these different perspectives complemented each another. It also demonstrated the interconnectivity of the human, spatial, and temporal conceptual domains. A comprehensive integral analysis of the municipal context could serve as a single perspective that would be as comprehensive as all the other perspectives put together. A decision maker that is able to combine the above complementary and multiple perspectives should be adequately prepared to identify, frame, and address complex issues.

The internal environment of the municipality is contained within its external environment. Dynamic interaction between the two environments continues across fuzzy boundaries.

#### **4.5.2 The internal context**

The internal context of the municipality was described in terms of the Biomatrix framework. This framework considered all the interacting aspects of the municipality acting as a whole. The internal environment interacted with the external environment across different dimensions, through different interconnections, and across all artificial boundaries. Therefore, the internal environment was also exposed to changes in the external environment and to external

influences. As a result, the external context contributed to the complexity of the internal environment.

### **4.5.3 Empirical findings**

The thematic analysis of the empirical data provided yet another complementary contextual perspective of the municipality. This perspective revealed three main themes in the data. First, the metaphor of 'a political arena' was used to describe the dynamics within the municipality. Political activity in this arena triggered system dynamics throughout the municipality and its communities.

Second, the contextual awareness of interviewees of the dimensions of time and space was uncovered as a theme. Interviewees were aware of the temporal dimension but some gaps in their perspective were observed. Most interviewees had a limited future consciousness and an underdeveloped anticipative capacity. This left the municipality exposed and vulnerable to surprises, threats, and risks. Opportunities to co-create an ideal or desired future might also have been missed. The municipality could apply foresight processes to explore desired futures proactively.

The spatial awareness of interviewees was limited to a very fragmented understanding of their environment, mainly at a surface level. A few individuals did have a systems perspective of the municipal context. Most interviewees were aware of the favourable and unfavourable aspects of the municipal culture. Although most interviewees were aware of some of the challenges facing the municipality, more challenges might be revealed through ongoing environmental scanning and the interrogation of resultant data. Most interviewees were either unaware of the phenomenon of complexity or did not know how to identify and address complex issues. Interviewees lacked both a vocabulary and a framework to identify and to address the phenomenon of complexity.

Third, the thematic analysis revealed the emergence of complexity in the municipal context. The organisational design of the institution and its features co-produced unique CAS behaviours. A basic understanding of complex and adaptive systems and their characteristic behaviours and features might have enhanced the capacity of decision makers to deal with such issues.

The key finding is that, generally, interviewees lack the vocabulary, knowledge, understanding, skills, resources and infrastructure to deal with the phenomenon of complexity. As a result, they do not take proper care of complexity.

### **4.5.4 Implications for a revised integrated development plan format**

This municipal contextual analysis could be used as a framework for a revised format of the IDP when combined with environmental scanning, foresight processes and scenario planning. The value of the IDP could be enhanced by the inclusion of a more comprehensive PESTLE analysis like the one in this study. Contextual variables in all PESTLE domains that could affect the municipality should be identified and considered proactively. This should include an overview of the SA political landscape, a more comprehensive overview of socio-economic variables, a review of new technology, such as 4IR and its implications, a review of proposed legislation that may affect the municipality in future (e.g., carbon taxes, and the Traditional and Khoi-San Leadership Act 3 of 2019 [RSA, 2019]), and a more comprehensive overview of relevant environmental variables. 'Grey power' from the local communities may be harnessed to do the scanning and to present their findings on a quarterly basis to the municipality as inputs into the IDP. The IDP may be expanded with a more comprehensive study of challenges, opportunities, and risks. A formal set of scenarios may also assist planners to plan.

This chapter concludes as follows. There is congruence and alignment between the empirical data, the researcher's observations over more than 15 years, and the consulted documentary data. The municipal context can indeed be described as a complex domain. Complexity permeates all aspects of the municipality, including the political structures, the administration, all interconnected stakeholder networks, and all the external systems.

The main finding is that decision makers do not have the awareness, knowledge, skills, strategies, tactics, and infrastructure required to deal with the complexity that confronts the municipality. The municipality is unable to take proper care of complexity and a complex context. As a result, linear and reductionist thinking, and planning dominates.

In Chapter 5, the decision-making processes of the municipality within its complex context are examined.

## CHAPTER 5 DECISION-MAKING PROCESSES OF HESSEQUA MUNICIPALITY

“Who *really* makes the decisions?” Such a question is meaningless – a complex decision is like a great river, drawing from its many tributaries the innumerable component premises of which it is constituted.

Herbert Simon (1976:xii)

### 5.1 Introduction

This chapter addresses the overarching theme of *municipal decision making*. The critical process of decision making can have broad impacts on the public interest and therefore merits analysis (Stillman, 2005:220; Rainey *et al.*, 2010:349). The corresponding research sub-question was formulated as follows:

*How does the municipality take decisions under conditions of complexity?*

A deductive approach was followed to formulate the research question during the initial literature review. The research objective was to develop a detailed understanding of the municipal decision-making processes from a complexity perspective. Secondary questions associated with the research question appear in the interview protocols in Appendix G and Appendix H. Empirical data was analysed abductively. The underlying assumption was that such an understanding could inform ways to enhance the decision-making capacity of the municipality. Therefore, the aim of the chapter is not to develop new theory but to develop understanding.

Abductive thematic analysis was used to analyse transcribed data from depth interviews and focus groups. The seven phases of the thematic analysis method adopted for this study were explained in Section 2.4.3. Practical data collection and data analysis for the entire study were reviewed in Section 2.7 above. In Section 2.7.4, the implementation of the first four stages of thematic analysis was explained. Implementation of Phase 1 (transcription), Phase 2 (familiarisation with the data), Phase 3 (coding) and the first part of Phase 4 (searching for themes), which also applies to this chapter, were explained in detail. The discussion of the second part of Phase 4, dealing with second-cycle coding, continues below, taking the discussion in Section 2.7.4.4 on Phase 4 coding further. This chapter addresses the implementation of the second part of Phase 4, Phase 5 (reviewing the themes), Phase 6 (defining and naming themes) and Phase 7 (producing the report).

The structure of this chapter corresponds with the structure of Section 4.4 in several ways. It also builds on the results of the first-cycle coding that was described in Section 2.7.4.4 and the themes that were listed in Table 4.2. The last four phases of the thematic analysis method are implemented below in the same manner as in Section 4.4 above. These similarities make it possible to condense some of the explanations and to use cross references.

Due to space limitations the following arrangements have been made:

- This chapter is based on the detailed thematic analysis contained in Appendix P, where the legitimacy of the findings is substantiated. For an in-depth understanding, it is important to go through the detailed analysis in the appendix.
- This chapter only contains a summary of the analysis and the key arguments and findings emanating from Appendix P.
- Several illustrations and supporting details are added as appendices to the manuscript as indicated in the text.

- The results of Phase 6 of the thematic analysis appear in Appendix P and are summarised in Table P-1. Table P-1 contains a summary of the main themes, themes, and sub-themes of the analysis. This table also appears in this chapter as Table 5.2.
- Appendix Q contains detailed documentation on five purposively sampled decisions that were analysed. The findings and conclusions of only two of these case studies are discussed in this chapter.

The chapter is structured as follows: It continues the discussion of Section 2.7.4.4 about the search for themes (i.e., Phase 4) that relates to the above research question specifically. The search for themes and the review of themes (i.e., Phase 5) are integrated, iterative and simultaneous processes that are difficult to separate. Therefore, they are treated as one process below. Next, the themes are defined and named (as Phase 6). Only a brief summary of Phase 6 is included in this chapter. The more detailed analysis of Phase 6 is included in Appendix P. Then the key findings are reported (as Phase 7) in this chapter. Several purposively selected decisions are studied from a complexity perspective. Again, the more detailed documentation of the selected decisions appears in Appendix Q. Findings relating to only two of these decisions are reported here. The chapter ends with a few conclusions and recommendations.

## 5.2 Empirical findings on municipal decision making

This chapter contains details regarding the implementation of the latter phases of the thematic analysis of which the initial phases were covered in Chapter 2.

### 5.2.1 Implementing Phase 4 and Phase 5 of the thematic analysis

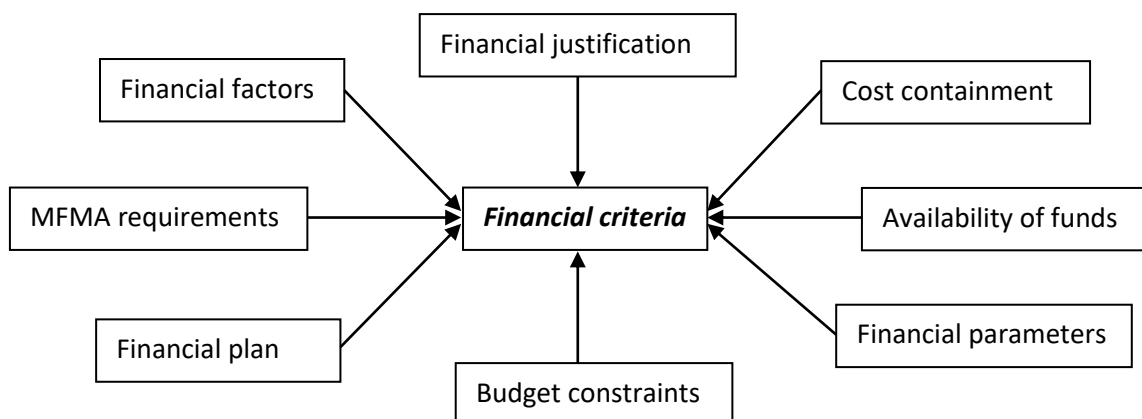
Implementation of the first four phases of the thematic analysis method was discussed in Section 2.7.4. The continuation of Phase 4 below uses the following data as inputs: The initial codes resulting from first-cycle coding of the entire data set during Phase 3, the candidate themes that resulted from the first two rounds of second-cycle coding during Phase 4, and the 'explore diagrams' created by NVivo (see Appendix N). Explore diagrams link initial codes, called *child codes*, to themes, called *parent codes*, in the data set. Both CAQDAS and a manual paper-based process were used to develop the themes, thematic structures, and the thematic map.

Two explore diagrams of the themes, *decision* and *decision processes*, as parent codes with all their respective child codes are included in Appendix N. Data captured in various explore diagrams, together with the supporting data extracts, served as inputs to the manual process of sense-making of the data during Phase 4 and Phase 5.

The search for candidate themes among all the initial codes from the entire data set continued during subsequent rounds of second-cycle coding. Searches for candidate themes were done in relation to the research question above (Saldaña, 2013). This was done manually on paper. The search for candidate themes involved many iterations and combinations of initial codes and themes. Different combinations of initial codes were clustered and re-clustered around alternative themes before themes and their associated clusters of codes were chosen. A version of initial codes that clustered around the candidate theme *financial criteria* is shown in Figure 5.1. Financial criteria are applied when decisions with financial implications are made.

Similar processes were employed to develop candidate themes. Clustering of initial codes such as those shown in the explore diagrams around candidate themes produced the list of candidate themes. These themes, all relating to the overarching theme of *municipal decision making* are listed in alphabetical order in Table 5.1 together with the earlier themes from Table 4.2. Each candidate theme listed in Table 5.1 represents one or more codes. During subsequent iterative steps the themes listed in Table 5.1 were structured in such a manner that they represent a coherent story about the coded data in relation to the research question.





**Figure 5-1 Codes associated with the theme *financial criteria***

Further refinement of the initial codes and candidate themes involved the same processes of merging themes, splitting themes, reconfiguring themes, and discarding themes, as discussed in Section 4.4.1. A provisional thematic map of the candidate themes evolved during the second-cycle coding process. The development of the map involved various cycles of clustering codes around themes, splitting and merging of themes, recombining themes to form main themes and dividing themes to become sub-themes. For example, the candidate themes *decision-making body* and *decision-making entity* were merged to become *decision maker* as a new theme. The large number of initial codes that clustered around the theme *process aspects of decision making* justified the splitting up of this theme into sub-themes. The theme *formal decision-making process* was changed to a main theme with sub-themes as indicated in the thematic map.

Redefining themes and reconfiguring the thematic structure to give a true reflection of the supporting data in relation to the research question was a circular process with many cycles. Refining candidate themes and identifying sub-themes, themes and main themes was also an integrated and iterative process. The linear description of the evolution of the thematic map is therefore a huge oversimplification of the actual mental process of making sense of the data.

The final version of the thematic map consisted of a hierarchy of themes (see Section 2.4.3.2 for a definition of the terminology). The main themes, themes, and sub-themes were developed simultaneously, almost like a crystallisation process. Codes started to cluster around themes, some of which were split up to form sub-themes or changed to become main themes. The final product could be presented in the form of a thematic map. The resultant overarching theme *municipal decision making* is related to three main themes, namely *definition of a decision*, *characteristics of a decision* and *the formal decision-making process*. A description of how the main themes evolved is provided next.

**Main theme: Definition of a decision:** Four themes were related to a definition of a (municipal) decision. These were in pursuit of municipal aims, a choice opportunity, to implement or not to implement and shaped by a formal decision process. These themes did not have sub-themes. The four themes were linked to the main theme definition of a decision which was a candidate theme previously. However, this main theme was defined in terms of another main theme, namely the formal decision-making process which was defined separately (see below). For the sake of clarity and simplicity, these two interconnected main themes were addressed separately.

**Table 5-1 List of candidate themes resulting from Phase 4 of the thematic analysis**

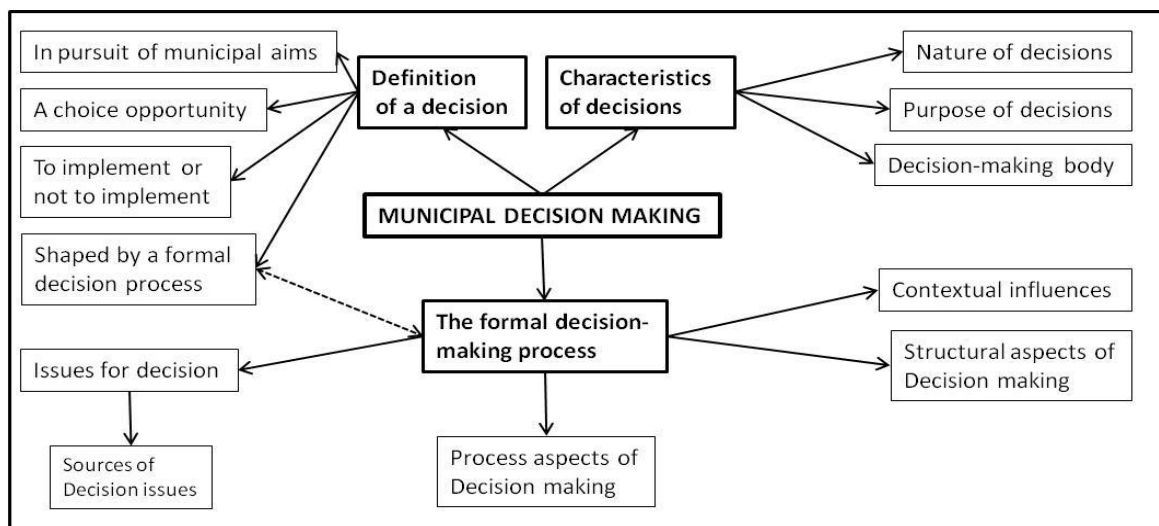
A choice opportunity	Decision-making body	Network of decision processes
Actors within structures	Decision-making entity	Organisation
Adaptive spaces	Decisions issues in the IDP	Points of view
Aims and objectives of stakeholders	Definition	Policy formulation
Aims of decisions	Definition of a formal decision	Policy implementation
Bad decisions	Delegated decisions	Power
Black-and-white decisions	Difficult decisions	Power structures
Bureaucratic structures in action	Drivers of decisions	Priorities
Characteristics of decisions	EMC decisions	Process aspects of decision making
Complex decisions	Examples of decisions	Purpose of decisions
Complexity	Feedback processes	Quotable quotes
Consensus decisions	Formal decision-making process	Recommendations
Consultation	Framework for decision making	Relationships among stakeholders
Context	Framing a decision issue	Risk management
Contextual influences	Good decisions	Routing decision issues
Controversial decisions	Governance of decision processes	Rules of the game
Controversial issues	Implementing decisions	Sources of decision issues
Council decisions	Inputs from stakeholders	Strategic direction
Deciding on issues	Issues to decide on	Structural aspects of decision making
Decision	Item writing	To implement or not to implement
Decision clusters	Leadership	Trust
Decision criteria	Level of agreement	Value systems
Decision makers	Level of complexity	Voting patterns
Decision making by the EMC	Levels of acceptability	VUCA factors
Decision-making processes	Linear decision processes	Worldview
Decision processes	Nature of decisions	

**Main theme: *Characteristics of a decision*:** The main theme characteristics of a decision emerged as a concept that binds together three themes, namely nature of decisions, purpose of decisions and decision-making body. The theme nature of decisions represented four sub-themes: a value judgement, level of complexity, level of agreement and difficult decisions. The sub-themes had sub-sub-themes as well. Several of these sub-sub-themes retained the names of in vivo codes that constituted them. The theme purpose of decisions was linked to four related sub-themes. These were setting strategic direction, policy formulation, policy implementation and risk management. The theme decision-making body referred to three sub-themes that each represented a cluster of codes that referred to decision makers involved in a decision. Interviewees typically referred to ‘a council decision’ or ‘an EMC decision’ or ‘a delegated decision’ to distinguish the three types of decisions. The thematic structure of this main theme summarised the findings related to different dimensions of a municipal decision.

**Main theme: *The formal decision-making process*:** Many initial codes clustered around the parent code *decision processes* as explained in Section 2.7.4.3. Several rounds of scanning and searching for themes among these initial codes produced a basic structure of four candidate themes: *issues for decision*, *process aspects of decision making*, *structural aspects of decision making*, and *contextual influences*. Many *process* codes clustered around the theme *process aspects of decision making*. Most of the *descriptive* codes clustered around the other three themes. Subsequent efforts to provide better definition to the four clusters of initial codes resulted in many sub-themes. For example, the theme *process aspects of decision making* represented many different sub-themes. Due to the importance of each of these sub-themes they were all retained. The theme *contextual influences* was linked to several sub-themes containing codes that cohered around different kinds of contextual influences.

The configuration of main themes, themes, and sub-themes provided a coherent metaphorical picture of the coded data that came together under the overarching theme of *municipal*

*decision making*. The thematic map in Figure 5.2, below, summarises the configuration at the end of Phase 5. Further refinement and adjustments to the themes and sub-themes during Phase 6 of the analysis resulted in minor adjustments to the thematic map as shown in Figure 5.2. The refinements during Phase 6 inspired more detailed thematic maps. The details of each theme, sub-theme, and sub-sub-theme, however, are provided in the detailed discussion of the Phase 6 analysis of the data in Appendix P.



**Figure 5-2 Thematic map of municipal decision making based on Phase 5 of the thematic analysis**

The thematic map in Figure 5.2 and the corresponding argumentation constituted the product of Phase 4 and Phase 5 of the thematic analysis. This tentative framework and understanding formed the basis of a more detailed analysis of each theme and sub-theme in Phase 6 below.

### 5.2.2 Implementing Phase 6 of the thematic analysis

Phase 6 started off with the thematic map of Figure 5.2 and a provisional understanding of the themes and sub-themes within the thematic structure. This understanding was documented and refined in Phase 6. Phase 6 conveyed the essence of each main theme with its themes in relation to the research question. The main themes also related to the overarching theme *municipal decision making*. The overarching theme was linked to the research question.

The finalisation of themes during Phase 6 is described in detail in Appendix P. The appendix contains the researcher's interpretation of the perspectives of the interviewees as reflected in the main themes of *definition of a decision*, *characteristics of decisions* and *the formal decision-making process*. Relevant quotes from the data were used to substantiate the researcher's interpretation of the data (see Appendix P).

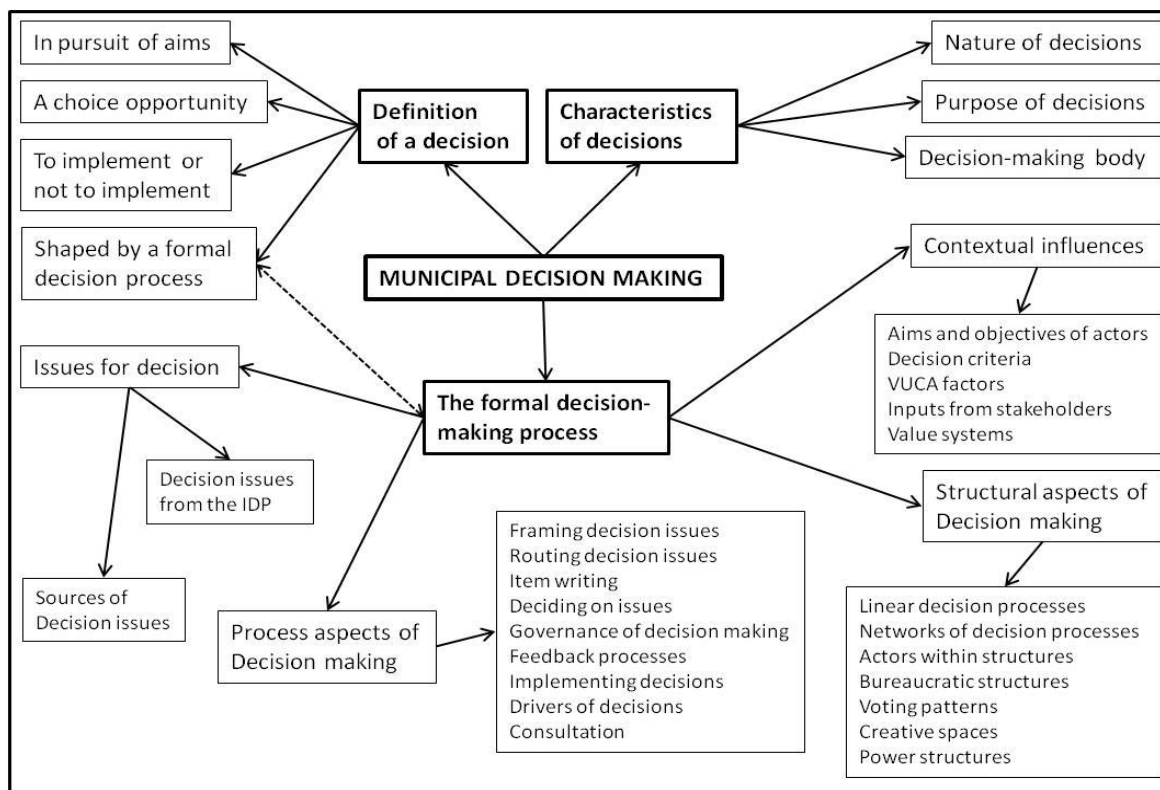
The product of Phase 6 provided a clear, coherent and comprehensive description of the main themes, themes, and sub-themes and a tabular summary of the refined configuration of main themes, themes, and sub-themes (see Table 5.2 and the corresponding thematic map in Figure 5.3). The contents of Table 5.2 are aligned with the contents of the final thematic map in Figure 5.3. The product of Phase 6 constituted the input to Phase 7.

**Table 5-2 Main themes, themes, and sub-themes observed in the coded data**

Main themes	Description of main themes	Themes	Sub-themes (sub-sub-themes)
<b>Definition of a formal decision</b>	The main theme <i>definition of a formal decision</i> defines a municipal decision as the result of a choice opportunity at the end of a formal decision process with an intended aim and a resolution about its implementation.	In pursuit of municipal aims. A choice opportunity. To implement or not to implement. Shaped by a formal decision process.	
<b>Characteristics of decisions</b>	The main theme of <i>characteristics of decisions</i> refers to the way the interviewees talk about the nature of municipal decisions and the purpose of these decisions. This theme also refers to the categorisation of decisions in terms of the entity responsible for taking the decision about specific decision issues. Most often the nature of a decision issue determines which decision-making body will address the issue.	Nature of decisions.	A value judgement: ('Good decisions', 'Bad decisions'). Level of complexity: ('Black-and-white decisions', 'Complex decisions'). Level of agreement: (Consensus decisions, Controversial decisions). Difficult decisions.
		Purpose of decisions.	Setting strategic direction. Policy formulation. Policy implementation. Risk management.
		Decision-making body.	Council decisions. EMC decisions. Delegated decisions.
<b>The formal decision-making process</b>	The main theme <i>the formal decision-making process</i> explains how the formal municipal decision-making process functions according to the interviewees. This simplified, reductionist version of a very complex phenomenon captures essential aspects of the processes and structures involved and the factors that influence the course of the decision process. This process considers the decision issues, process aspects and structural aspects of the decision process as well as contextual aspects that influence the decision process. The decision-making process normally ends with an implementation step, or a firm decision about implementation.	Issues for decision.	Sources of decision issues. Decision issues in the IDP.
		Process aspects of decision making.	Framing a decision issue. Routing decision issues. Item writing. Deciding on issues. Governance of decision processes. Feedback processes. Implementing decisions. Drivers of decisions. Consultation.
		Structural aspects of decision making.	Linear decision processes. A network of decision processes. Actors within structures. Bureaucratic structures. Voting patterns. Creative spaces. Power structures.
		Contextual influences.	Aims and objectives of stakeholders. Decision criteria. VUCA factors. Inputs from stakeholders. Value systems.

### 5.2.3 Implementing Phase 7 of the thematic analysis

Phase 7 is based on the fully worked-out themes of Phase 6 in Appendix P, the tabular summary of the Phase 6 analysis in Table 5.2 and the final thematic map in Figure 5.3.



**Figure 5-3** Thematic map of the overarching theme *municipal decision making*

Phase 7 consisted of the write-up of the method, findings, conclusions, and recommendations of the thematic analysis. The research design and research methods were documented in Chapter 2. Implementation of the first four phases of the thematic analysis applied to different chapters of this study and was discussed in Section 2.7.4. In this chapter, the analysis continues from Phase 4 with a specific focus on municipal decision-making processes. The details of Phase 6 are attached in Appendix P and only the findings and conclusions are reported here. Each of the three main themes relating to the overarching theme *municipal decision making* is addressed next. A thematic map of each main theme is provided at the beginning of each section as an aid for the reader.

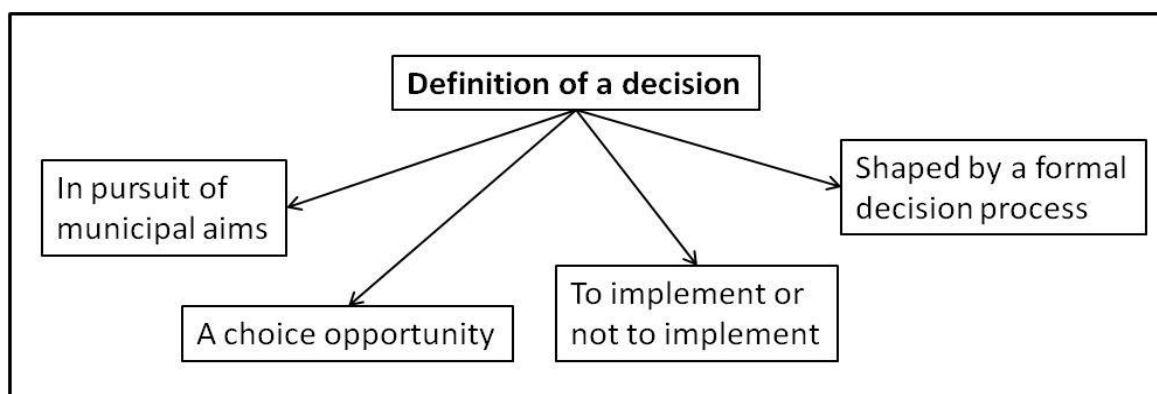
#### 5.2.3.1 Main theme: *Definition of a decision*

Based on the thematic analysis a municipal decision was defined in terms of a formal decision process, the intended aims to be achieved through the decision, a choice opportunity, and at least a decision about implementation planning. Figure 5.4 contains a thematic map of this main theme and its associated themes.

Based on the analysis of the data the following definition of a municipal decision is proposed:

A municipal decision is the result of a choice opportunity for a decision issue that is processed and shaped by a formal decision process that considers relevant municipal

constraints, criteria, objectives and contingencies in pursuit of the aims of the municipality or the initiator. Implementation planning is part of the decision process. Actual implementation of the decision is only part of the decision process if the decision is implemented by the municipality or by another party on behalf of the municipality.



**Figure 5-4 Thematic map of main theme: Definition of a decision**

The same coded data could be interpreted through a complexity lens to generate the following definition of a municipal decision:

A municipal decision is the emergent result from a dynamic, self-organising decision process during which a decision issue raised by its initiator is processed through the interaction of diverse actors with different interests and aims who consider various rules, laws, constraints, criteria, contingencies and objectives before making a verdict. During the decision process many contingent and contextual factors as well as positive and negative feedback loops interact to shape the decision. Implementation planning is part of the decision process, but actual implementation is only part of the decision process depending on whether implementation is done by the municipality or by another party on behalf of the municipality.

Due to the complex nature of a decision, “the concept ‘decision’ remains ambiguous and ill defined” (Nutt, 2010b; Nutt & Wilson, 2010:25; also see Section 3.3.1). As a result, different authors emphasise different aspects of a decision. Key focus areas of study have been contextual aspects, the nature of the decision issue, the process of decision making, the choice event when a verdict or ruling is made, the implementation phase or the role of the decision maker(s) involved. In this study, the municipal context, within which decision making took place, was examined in Chapter 4. The main themes *the formal decision process* and *characteristics of decisions* are discussed below, and corresponding aspects of the decision-making process are addressed including the roles of actors in the process.

The aim of municipal decisions was to benefit the communities of the municipality and to address risks. Specific aims are discussed below when the theme *purpose of decisions* is examined. In the municipal context, the choice event was almost always preceded by a formal decision process. The choice event for important decision issues took the form of a decision by the mayor, the EMC or the council close to the end of the decision process. At council meetings the dominant voting power of the governing coalition or majority party determined the outcome of the decision process. A municipal decision qualified as a decision once the implementation thereof was specified or planned and formally documented. Implementation could be the responsibility of the municipality, a party acting on behalf of the municipality, or an independent party. A director explained the involvement of the municipality in the implementation step as follows:

It depends whether it [the decision] is something that the municipality has to implement, or that a third party must implement. We [The municipality] can take decisions with no involvement in execution. We only give a 'yes' or a 'no'. It depends on who the party is that implements. Our 'yes' or 'no' concludes our involvement.

As a rule, a municipal decision was linked to a resolution about the implementation of the decision. Simon (1949:2) and Drucker (1967) argue that a decision is at best a good intention unless it is implemented. These authors insist that implementation must be part of the decision process. Poole and Van de Ven (2010:544) argue that implementation *planning* "fall within the scope of the term *decision making*" (italics in original). These authors, however, leave the activity of implementation out of the decision-making process. The focus of this study excluded the actual implementation of decisions but included the characteristics of decision issues.

### 5.2.3.2 Main theme: Characteristics of a decisions

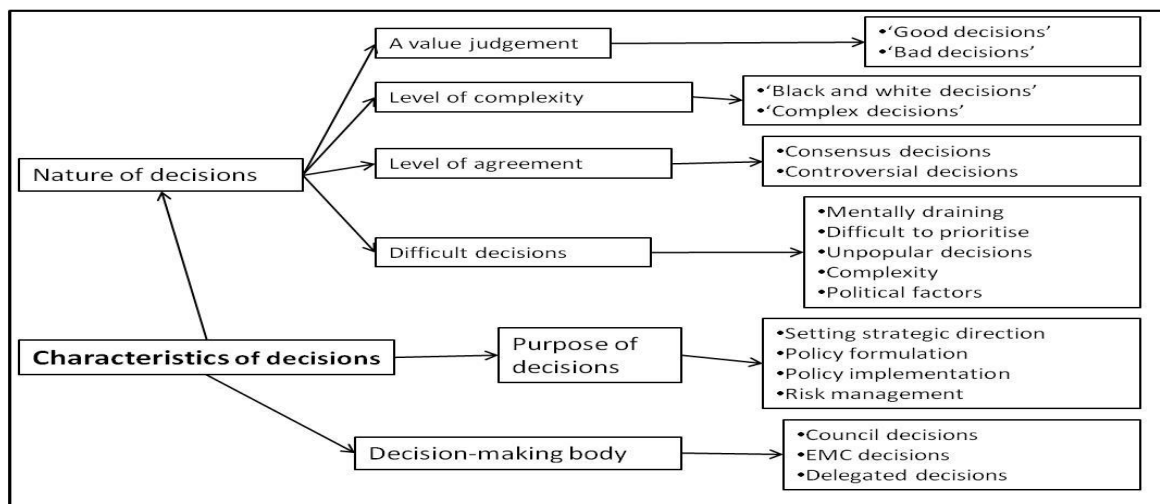
The main theme *characteristics of decisions* refers to the way the interviewees talked about the *nature* of municipal decisions and the *purpose* of these decisions. This main theme also refers to the categorisation of decisions in terms of the *municipal entity* responsible for addressing the issue in focus. The voice of the interviewees was reflected in terms of several *in vivo* codes used for coding and naming of themes. The characteristics of decisions and decision issues had implications for the way these decisions were processed in terms of a decision framework (which is discussed in Chapter 7). The key findings regarding the characteristics of decisions are presented next in terms of three themes, namely *nature of decisions*, *purpose of decisions*, and *decision-making body*. A thematic map of this main theme is provided in Figure 5.5.

**Theme: Nature of decisions:** The thematic analysis of the data uncovered the nature of decisions in four dimensions. The four corresponding sub-themes were *a value judgement*, *level of complexity*, *level of agreement* and *difficult decisions*.

**Sub-theme: A value judgement:** The data revealed that most interviewees used a value judgement when they referred to the nature of decisions. The terms "*good decision*" and "*bad decision*" were often used. In order to understand the decision process from their perspectives, and to honour their voices these terms had been retained as *in vivo* codes that were also reflected in the names of sub-themes. The subjective and value-laden nature of these terms was noted, though.

"*Good decisions*", according to interviewees were based on proper data and were produced by a thorough decision process. They were legal, affordable, implementable and aligned with municipal strategies and aims. They benefited most people and harmed (almost) no one. According to a director "*a good decision*" was in line with relevant legislation, SOPs, delegations, and regulations that made it executable. "*Bad decisions*", in contrast, were the result of a deficient decision process and they were inappropriate as they promoted personal aims (and not those of the municipality). "*Bad decisions*" were ignorant of contextual factors and expert inputs. They did not add value and they harmed communities.

The value-laden term "good" is used in the governance literature (Davids & Theron, 2014; Schwella, 2015). An IPCC research team (Jones *et al.*, 2014) argues that a "good decision" results from legitimate processes with clear goals and a range of alternative options; consequences are understood; a wide range of perspectives are considered; and good decisions are implementable within the constraints of the system and institutional frameworks. The outcomes of the decision over its expected lifetime are effective in terms of the criteria for success. It could be argued that a "*bad decision*" is the opposite of a "*good decision*".



**Figure 5-5 Thematic map of main theme: Characteristics of decisions**

All the recent reports of the AG contain evidence of bad decisions (that fit the above description) taken by most SA municipalities (AG, 2020a; 2020b; 2021). Pfeffer warns that one can only know whether a decision is good or bad once its consequences become known long after implementation. “The consequences of our decisions are often known only long after the fact, and even then with some ambiguity” (Pfeffer, 1992:37). Therefore, the terms ‘good decision’ and ‘bad decision’ in this study are used with reference to all the above disclaimers and qualifications.

**Sub-theme: *Level of complexity.*** The thematic analysis revealed *level of complexity* of decisions or decision issues as a sub-theme in the data. The analysis also revealed two diverse sub-sub-themes, namely ‘*black-and-white decisions*’ and ‘*complex decisions*’. These two categories of decision issues could be positioned on a spectrum representing level of complexity, namely, between the extremes of simple, clear, ordered and obvious decision issues, at one end and complex issues at the other end. Complicated decision issues that could be defined and structured properly could be positioned closer to the domain of order on this spectrum.

The sub-sub-theme ‘*black-and-white decisions*’ was named after an *in vivo* code originating from the following quote of a senior official:

There are the MFMA and the regulations that prescribe how we must act and what we must do. There is no room to deviate. Things are black and white. There are no grey areas for interpretation.

The category of ‘*black-and-white*’ decisions corresponds with ordered or complicated decision issues. The differences between complicated issues and complex issues have been documented in detail by Snowden and Boone (2007), Poli (2013), and Greenberg and Bertsch (2021). (See Table 3.5 for characteristic features of complicated and complex systems.)

In the Cynefin framework ‘*black-and-white decisions*’ belong to the domains defined as “simple or clear” and “complicated” belongs to the ordered domain (Greenberg & Bertsch, 2021). Rittel and Webber (1973) refer to this category of decision issues as tame problems. Jones (2013:356-357) refers to these repetitive and routine decisions within a stable and predictable context as programmed decision issues.



Several codes were clustered around the concept of complex issues. As a result, the sub-sub-theme '*complex decisions*' was formed. Weaver (1948) identifies a similar category of decision issues that he describes as organised complexity. Rittel and Webber (1973) refer to this category of issues that are difficult to address and solve as wicked problems and Heifetz (1994) uses the term adaptive problems to describe them. Within the Cynefin framework, the category of complex issues is found in the domain of "unorder" (Snowden & Boone, 2007).

Interviewees often referred to "*difficult*" decision issues when they talked about issues that were either complex or complicated by definition (as explained in Chapter 3). A possible explanation for the use of the term 'difficult decision' when the term 'complex decision' or 'complicated decision' would be more appropriate, could be because interviewees lacked the understanding and vocabulary to talk confidently about complex and adaptive phenomena. Interviewees very seldomly used terminology that would be normally used to describe complex systems and phenomena. However, all complex decisions are indeed difficult in nature!

It was found that interviewees were not able to describe and to differentiate between complicated decision issues and complex decision issues. This inability had important consequences. It meant that the municipal decision-making system did not identify or differentiate between the two kinds of decision issues. Therefore, complicated and complex decision issues were probably treated in similar ways. An inability to accurately define a decision issue as simple/clear, or complicated, or complex had serious implications. A potential decision error might be committed if a decision issue that was complex in nature was treated as a "black-and-white" decision issue, or if a structured decision issue was treated as a complex issue (Boal & Meckler, 2010:327). These types of decision errors can be analysed in terms of the Cynefin framework (Greenberg & Bertsch, 2021) or the Ashby space (Boisot & McKelvey, 2011:283).

An inappropriate diagnosis of the decision issue may lead to the implementation of an inappropriate decision process (Snowden & Boone, 2007; Greenberg & Bertsch, 2021). The conclusion, therefore, is that municipal decision making could be enhanced if decision makers could identify, describe and understand the nature of complicated issues and complex issues and if they could treat them appropriately.

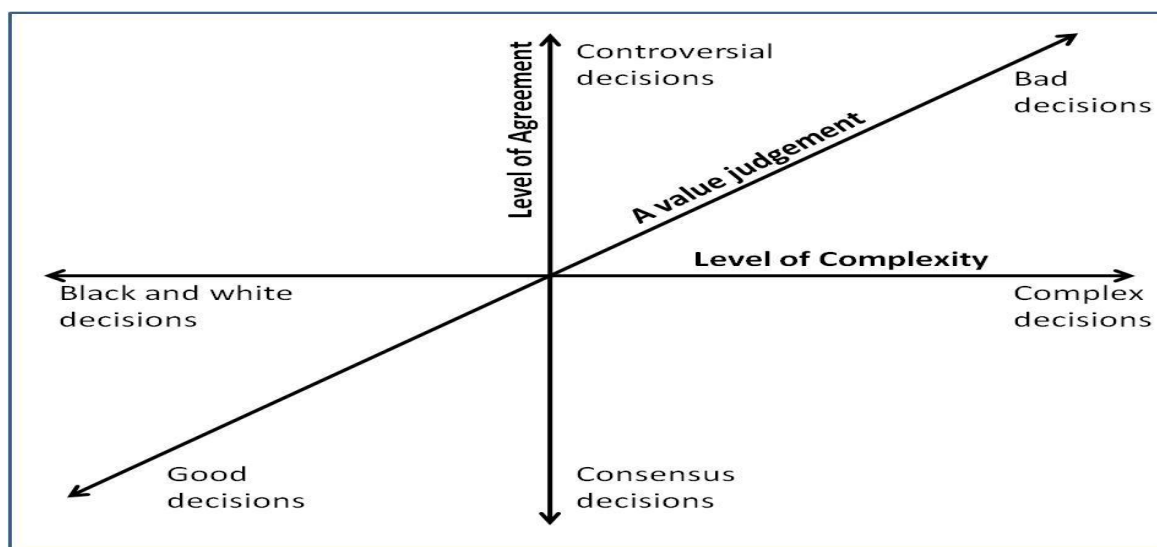
**Sub-theme: *Level of agreement*:** The sub-theme *level of agreement* distinguishes two types of decision issues, namely *consensus decisions* and *controversial decisions*. These types can also be positioned as the end points of a spectrum that defines the level of agreement among decision makers. In some instances, all the stakeholders in the decision process agreed on the process followed, the arguments offered regarding the decision issue, the decision criteria and the output of the decision process in terms of implementation thereof. In council meetings, the level of agreement about decision issues could be quantified in terms of the number of votes in favour of, and votes against a decision issue. Consensus decisions received the votes of all councillors (as well as the support of the directors).

Controversial decisions at council level stimulated fierce debates and argumentation. Controversy emanated from differences in values, perceptions, worldviews, priorities, preferences, interests and aims of participants regarding any aspect of the decision process. The number of votes in favour of, and votes against controversial issues always reflected the number of councillors in the governing party or coalition versus those of the opposition.

**A three-dimensional framework to categorise decision issues:** The first three sub-themes of the theme *nature of decisions* were *a value judgement*, *level of complexity* and *level of agreement*. These sub-themes could be used as a convenient three-dimensional framework to categorise decisions as illustrated in Figure 5.6. The decision about the Takkieskloof resort is documented in Appendix Q. This decision was *controversial* and *complex*, but it was a *good decision* according to a councillor. Whether councillors could participate in the appointment

processes of officials or not was supposed to be a *black-and-white decision* issue because the municipal laws did not allow councillors to interfere with the processes of the administration. However, the governing DA-FF+ coalition decided that councillors should participate in this process. It was a *bad decision* according to the officials because it politicised the appointment process. In addition, it was a *controversial decision*. This three-dimensional framework distinguishes eight kinds of decision issues.

The sub-theme *difficult decisions* constituted a fourth dimension of the theme *nature of decisions*.



Source: Candidate WTB Janse van Rensburg

**Figure 5-6 A three-dimensional framework to categorise decisions in terms of level of complexity, level of agreement, and a value judgement**

**Sub-theme: *Difficult decisions*:** The thematic analysis revealed that interviewees perceived and experienced certain decisions as rather “*difficult*” for different reasons.

Some decisions demanded a lot of mental and emotional energy. Difficulty was associated with the mental and emotional challenges and struggles involved in decision making. A former councillor referred to a very important decision that he had to take and that he experienced as difficult. He said: “*For me it was a difficult decision. For nights I struggled with it ... I violate my conscience. I cannot agree with the way they think. It is about party politics.*”

The phenomenon of scarcity of funds compelled councillors to prioritise many projects before selecting a few projects on merit for implementation. They found it difficult to prioritise and to choose from many attractive projects. Quotes from two councillors illustrated the point: “*Currently the budget is the most difficult decision.*” Another said: “*A difficult decision is the budget where you must choose two projects ... when you know there is a list of projects. How do you choose two from the list? It is difficult.*”

Interviewees found it difficult to communicate unpopular decisions to those that were negatively affected by these decisions. A councillor explained: “*To balance the budget we need to increase taxes. These are difficult decisions. When we need to take [these] decisions and then convey the message, that for me is difficult ...*” An official explained that a decision is difficult “*when a decision has to be taken that is not popular in the community*”.

Interviewees regularly used the term “*difficult decisions*” when they referred to complex and complicated decision issues.

Both councillors and officials admitted that decision issues became difficult once political factors were introduced into the decision process.

However, a closer analysis of data about decisions perceived as “*difficult decisions*” lead to the following interesting and related observations: First, it was mainly policy formulation decisions that were experienced as difficult and complex and not decisions regarding its implementation. Second, it was mainly councillors and not officials that experienced decisions as difficult. Third, policy formulation was experienced as difficult by councillors whereas officials did not experience policy implementation as difficult. Officials just implemented policy. An experienced director suggested the following clarification:

It is easier for officials to take an unpopular decision. For officials there is not necessarily something like a difficult decision. We are not decision makers. We only make a recommendation in terms of laws and policy. Sometimes politicians are confronted with difficult decisions. Politicians must keep the communities satisfied ...

This director also said: “*Fortunately the administrative component does not have to take the controversial decisions. Rather write an item for the council so that they can decide on the difficult matters.*”

A senior supply chain official shared a very similar sentiment regarding difficult decision issues:

In the environment where we work legislation is always clear about issues ... Then there are the MFMA and the regulations that prescribe how we must act ... There is no scope to deviate. Things are black or white. There are no grey areas for interpretation ... In our environment we are guided by legislation. It is easy to take decisions because we apply legislation. There is no place for subjectivity. Decisions are neither easy nor difficult ... You know what the rule is, and you can easily apply it ... We do not take independent decisions. For us decisions are prescribed. We only apply them ... The council formulates policy. We implement the policy. Procedures, standard operating procedures are approved by the MM, and we execute them.

It was found that a significant number of councillors experienced decisions on policy formulation as difficult due to their complexity or unpopular nature, the amount of mental and emotional energy required, the interplay of political forces, or the challenge to optimally allocate scarce resources. Complexity was increased by the diverse values and priorities of politicians and the political parties they represented. In contrast, several directors and officials who implemented policy and council decisions had a different experience. They did not experience decisions on policy implementation as difficult. For them, decisions were “black-and-white” without any grey areas. When officials incorrectly reduced a real complex decision issue to a “black-and-white” issue they ran the risk of committing one or more decision errors.

A key finding that was documented in Section 6.3.3, could have been linked to the perception of officials that they did not (have to) take difficult decisions. The key finding was that a clean audit report from the AG appeared to be the ultimate indicator of good municipal performance and decision making at the Hessequa municipality. The directors, as well as senior officials and councillors, prided themselves with the fact that in 2021 the Hessequa municipality received its eighth consecutive clean audit report from the AG. The following quote by a director reflected the shared view of most interviewees and illustrated the perceived importance of a clean audit report:

A clean audit [report] is probably the best testimony of the fact that the Hessequa municipality can take good decisions in a complex environment... The clean audit is probably the best testimony of good decision making, good administration, good

management, good recommendations and support to the council which is ultimately accountable in the municipality.

Another senior director put it as follows:

It [A clean audit report] is the strongest possible motive to do the right things in the right way at the right time within the rules.

This senior director added: *“My colleagues hesitate to take responsibility for decisions in the current political environment due to the fear of losing their jobs if the opposition party comes to power.”*

Political actors, residents and officials were continually monitoring municipal decisions and subsequent expenditures that could possibly be “unauthorised, irregular or fruitless and wasteful” in terms of section 32 of the MFMA. The risk of committing a Section 32 offence and the risk of not getting a clean audit were contributing to very conservative decision making. The MFMA, PFMA, MSA and Structures Act not only enabled and empowered municipal decision makers but the acts also kept them accountable and responsible for the ethical, effective and efficient governance of the affairs of the municipality. In the case of the Hessequa municipality, these acts promoted very conservative decision making and probably also the avoidance of difficult decisions.

The following quote from a third director explained how the mythical importance of a clean audit report was misused to influence and manipulate decision making:

I use the clean audit conveniently to put my standpoint ... So, I have a few tools that I use in order not to fight the whole time. I just say that it will cost us a clean audit. It will not! But I say it. In my comments you will often see it, if you want to lose your clean audit you must continue. And it is only to scare them off ...

The key findings regarding the importance of a clean audit report were the following: A clean audit report was perceived as the ultimate indicator of good municipal decision making and performance. The drive for a clean audit report resulted in conservative decision making. Decisions that might jeopardise a clean audit report were not taken. Difficult decisions were not taken by officials. The threat of risking a clean audit report was also misused to manipulate decision making.

The following sobering quote by the AG (2022:5) challenges the perceived importance of a clean audit report:

A clean audit is not always an indicator of good service delivery and does not always correlate directly to the lived experience of all the communities in a municipal area.

It may be a good strategy to address difficult and controversial decision issues through dialogue and discussion. At a higher level of thinking, it may be possible to reframe a difficult or controversial decision issue so that it migrates to a category where it can be addressed effectively and efficiently in terms of a more sophisticated paradigm (Gharajedaghi, 1999:40).

The conclusion is that the perceived importance of a clean audit report and the drive to maintain the current performance record created a context and a culture that stimulated conservative decision making. This context can be compared to an attractor basin that only attracts low-risk decisions within the domain of order, certainty and predictability. The result is that “difficult decisions” which include complex decisions in the domain of unorder are not taken (Snowden & Boone, 2007; Greenberg & Bertsch, 2021).

The complex nature of the context within which the municipality took decisions was examined in Chapter 4. A conservative *“play it safe”* approach to decision making was therefore

inappropriate to deal with complexity. A conservative approach might be appropriate for properly structured, “*black-and-white*” decision issues but it was not adequate to deal with complexity in terms of Ashby’s law or in terms of the Cynefin framework for decision making.

The perception that officials did not take difficult decisions and the myth that a clean audit report was the ultimate indication of outstanding municipal performance had important implications. Perceptions and myths have powerful leverage effects on all organisational aspects of complex systems (Meadows, 1999; Inayatullah, 2004). The myth regarding a clean audit report and the perception among officials that they did not (have to) take difficult decisions were likely to have a huge influence on municipal decision making as indicated above.

The focus of this study was specifically on those decision issues characterised as complex, or “*difficult*” due to their complexity.

**Theme: *Purpose of decisions*:** The thematic analysis revealed that decisions could be categorised in terms of their purposes. Four broad purposes were distinguished, namely, to set strategic direction, to formulate policy, to implement policy, and to manage risks. Strategic decisions were high-level decisions that gave direction to decisions regarding policy formulation and policy implementation. Etzioni’s (1967; 1986) model of “mixed scanning” decision making can be used as a framework to understand the theme *purpose of decisions*. The *strategy setting* decisions were similar to Etzioni’s “higher order fundamental decision making” whereas the groups of decisions associated with *policy formulation*, *policy implementation* and *risk management* were similar to the “lower order, incremental decisions”. Policies were formulated according to strategies.

Municipal decisions at a strategic level had to consider temporal and spatial variables within the relevant contextual environment. A key conclusion from Chapter 4 was that the contextual environment of the municipality was indeed complex. Therefore, the practices of environmental scanning, foresight exercises, visioning, scenario planning, and other similar practices, should inform strategic decision making. However, apart from *ad hoc* workshops on issues such as tourism, renewable energy and water security none of these practices were formally or regularly employed by the municipality. One result of this reality was that some future risks and opportunities might not have been detected in time to address them appropriately and proactively. Another result could be that decisions regarding risk management might have been inadequate and narrowly focused. Municipal decision making may be enhanced significantly if these aspects are addressed. The proposed framework for municipal decision making in Chapter 7 includes suggestions in this regard.

**Theme: *Decision-making body*:** Another pattern observed in the data was that interviewees regularly referred to decisions and categorise decisions in terms of the entity accountable for taking the decision. Interviewees typically talked about “*council decisions*”, “*EMC decisions*” and “*delegated decisions*”. A further analysis of the data suggested that this categorisation was based on certain underlying assumptions, guidelines, or rules according to which the categorisation was done. Section 160(2) of the Constitution stipulates that the municipal council must decide about matters relating to the passing of by-laws, the approval of budgets, the imposition of rates, taxes, levies and duties, and the raising of loans. Other decisions may be delegated in terms of a delegation system to the EMC, the mayor, speaker, MM or other delegated entities (see Chapter 7, Part 3 of the Systems Act). The council had to approve the delegation register. Decision issues that could be structured properly were normally delegated to the party responsible for addressing the issue.

There was a link between the themes *purpose of decisions* and *decision-making body*. The general rule was that the council took decisions regarding strategic issues and policy formulation. Decisions regarding policy implementation and risk management were typically delegated.

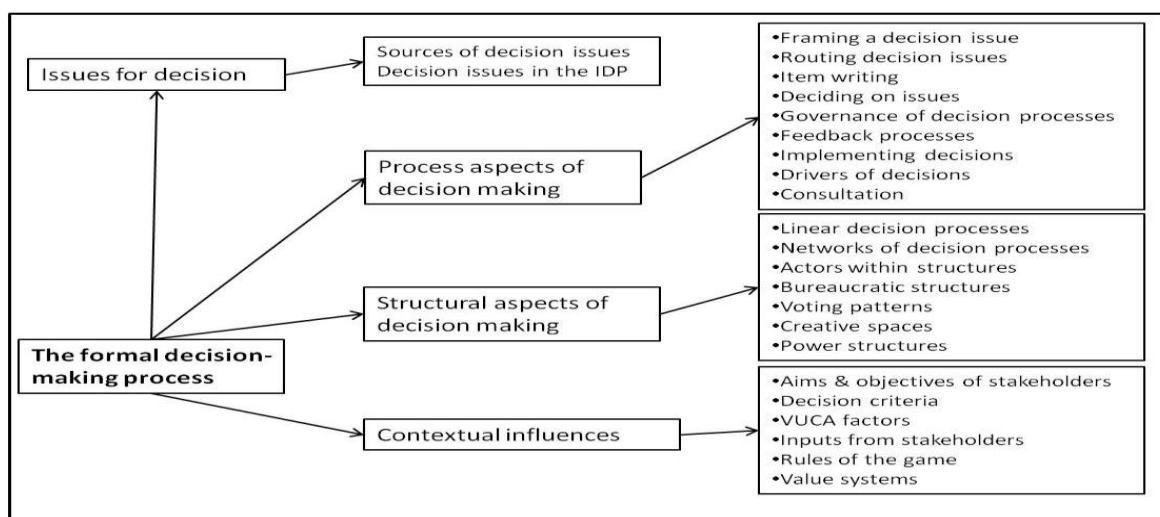
During the depth interviews, a total of 21 decision issues defined as complex were identified. Most of these decision issues were categorised and treated as “*council decisions*”. The exceptions were decision issues about land use and development planning which were delegated to the planning department. The conclusion was that decision issues defined as complex normally became “*council decisions*”. Complex land use and development planning issues were delegated and directed to the director accountable for planning. The director could direct complex issues to the regional planning tribunal for a binding decision.

Findings regarding the formal decision-making process of the municipality are discussed next.

### 5.2.3.3 Main theme: *The formal decision-making process*

The main theme *the formal decision-making process* reflects the researcher’s perception of the interviewees’ shared understanding of how the formal municipal decision-making process functioned. The formal process dealt with decision issues that originated both inside and outside the municipal boundaries. Numerous interwoven secondary processes constituted the formal decision process. The formal process was characterised by several structural aspects. The process aspects and the structural aspects co-determined how decision issues were dealt with in the formal process. A spectrum of contextual factors influenced the decision process. The aims of actors, the decision criteria they used, VUCA factors, legislation, value systems and various other contingent factors influenced the formal decision process. A decision was only a decision if implementation was at least *planned*. The *act* of implementation of a decision could form part of the formal decision process or not. In some cases, the municipal decision process was concluded by a decision that might terminate the further involvement of the municipality. In other cases, the municipality or a contractor implemented the decision on behalf of the municipality.

The main theme *the formal decision-making process* is discussed in terms of its related themes and sub-themes. The thematic map of this main theme appears in Figure 5.7.



**Figure 5-7 Thematic map of main theme: *The formal decision-making process***

This section is introduced by a former mayor’s informative and elaborate verbal account of the formal decision-making process of the municipality. The quote provides a broad context for the discussions below. Reference is made to different structures and processes. The roles of the caucuses and meetings of the portfolio committee, the EMC and the council are highlighted. It refers to different stages of the decision process, the importance of the quality of items and the status of the various forums. It also refers to time scales and the involvement of diverse

stakeholders and various sources of information. Items in bold print are discussed in more detail below.

A director prepares an **item** with the **inputs** from the people in his department. The item then goes to all the departments for their inputs before it goes to the **council**. First, we as a **caucus** discuss the item. Then we caucus with the **coalition partners**, for example in the caucuses of the **portfolio committee** and the **EMC** ... The caucus deals with the available information. In difficult cases we contacted other municipalities such as George and Plettenberg Bay to find out how they handled similar cases ... The council gets this information, studies the item, caucuses about it within the party, and gets advice from elsewhere when needed ... During the [caucus] meeting a tentative decision is taken, like for example in the portfolio committee where we look at the item for the first time. At the portfolio committee we ask the **officials** for clarity. During the meetings where tentative decisions are taken in-depth discussions are held with all **stakeholders** present, and their **inputs** are also considered there. All stakeholders and all parties at the portfolio committee meeting under the chairmanship of the governing party give their inputs. There are officials from the departments involved. All other officials are there as well as members of the opposition party. Consultants are also invited to provide expert inputs about specific issues. Normally these issues are addressed at **workshops** ... It is important that all information that may possibly be relevant has to be available at the workshops and portfolio committee meetings ... External documents are sometimes given to business chambers before meetings, for example in Still Bay, for comments back to the council.

The council takes decisions after much deliberation in the portfolio committee and in the EMC meetings that take place about ten days after the portfolio committee meetings. Thus, there is time to process the inputs from the portfolio committee and to caucus again before the EMC and to consider new inputs so that everything can be included in the comments to the EMC. The EMC decision may differ completely from the recommendations made by the portfolio committee.

The advantage of getting different inputs is that you can think further and wider about everything. When you take a wider view of everything you grow of course! Even inputs from the opposition are useful provided they are aligned with the vision. Some final decisions are not taken by the EMC but go to a full **council** for a final decision and final approval. Some cases the council can finalise. **Legislation** prescribes which decisions must be taken by the council. The council takes decisions only after sufficient discourse has taken place. After reaching your desk it takes about a month for an item to progress through the portfolio committee to the EMC and to the council. One can also delay decisions in order to fill gaps in information. Then it is referred to the next EMC.

This long reference summarises the formal decision-making process and provides the context within which each theme is discussed below.

**Theme: *Issues for decision*:** The theme *issues for decision* referred to the basic inputs that activated the formal decision process of the municipality. Such issues might have originated within the municipal bureaucracy or the political structures or from a range of external actors. An important source of issues for decision was the IDP. The IDP contained the processed and prioritised inputs from internal and external stakeholders that informed strategic decision making.

This theme illustrated how decision issues from the internal and the external environments entered the “awareness phase” of the decision process where the “initial recognition” of the issue took place (Noorderhaven, 1995:18-38; Keast & Towler, 2009:4-6). Decision issues that entered this ‘awareness phase’ normally proceeded further to the ‘analysis phase’ and finally entered the ‘action phase’ of the formal process.

**Theme: *Process aspects of decision making*:** Nutt and Wilson (2010:647) “define process as action steps, either taken or inferred”. A process perspective of decision making is “the key to understanding what produces a decision” (Nutt, 2010:582). A process perspective

emphasises the importance of sub-processes, value chains, the sequence of events, the importance of time, and the interaction between structure and process (Dostal *et al.*, 2005:74; Nutt, 2010a). This theme also illustrated the complex and dynamic nature of decision making. The very detailed analysis of the data revealed nine different processes associated with the formal decision-making process. Each sub-process is discussed next under the name of the corresponding sub-theme (see the thematic map in Figure 5.7).

**Sub-theme: *Framing a decision issue*:** A decision maker needs to “frame” a decision issue in order to devise a strategy and plan that are adequate to address the issue in focus (Snowden & Boone, 2007). If a decision issue is not framed accurately, a decision error can be committed (Boal & Meckler, 2010). Framing a decision issue has to do with the social construction of reality by the decision maker, namely, the way the decision maker interprets and understands the issue in its context (Gergen, 2001). The same issue can be framed in many ways and the way the issue is framed has important implications for the decision process. Often an issue must be reframed once it is better understood (Grint, 2005). Greenberg and Bertsch (2021:30) use the term “sense-making” as an equivalent for “framing”. These authors define “sense-making” as “a knowledge production activity” which means “using data toward a shared understanding of problem areas so as to generate the right action”.

The thematic analysis revealed that municipal decision makers framed decisions as “*black-and-white*”, “*complex*” or “*difficult*” (see the main theme *characteristics of decisions*). An incorrect characterisation of the decision issue might lead to an inappropriate approach to address the issue. An important finding was that the municipality did not have a framework that could be used to frame decision issues as simple, complicated or complex. In addition, both the vocabulary and the understanding required to describe these individual categories of decision issues appeared to be lacking among interviewees.

**Sub-theme: *Routing decision issues*:** Decision issues are “*routed*” through the decision processing systems of the municipality based on the way the issue was framed. Properly structured decision issues were typically delegated to a directorate or an official according to the delegation system. Certain types of decision issues stipulated in the Constitution had to be addressed by the council and could not be delegated. However, a number of decision issues might not be routed to the right decision-making body because the issue had been framed incorrectly.

**Sub-theme: *Item writing*:** A focus group defined an “*item*” as “*a written report with information regarding the purpose, background, discussion and recommendation about a specific matter addressed to a decision forum for consideration by the decision makers*”. Another definition stated that “*an item contains the information for decision making*”. Item writing referred to the processes of collecting and collating relevant documentation, performing the research, the skill and art of writing the document, and the quality control processes involved. It also involved the important choice of language in which to write the report. Please note that all the directors and all but one councillor used Afrikaans as home language. Unless an individual was intimately involved with a decision issue the content of the item was the only information available to a member of a decision forum to base a decision on.

Against this background, the following important findings were made: First, an item writer could potentially influence the decision process by the way a decision issue was framed and presented to the decision makers. The format of an item, which was prescribed by the legal department, might also influence the decision process. Second, according to the consensus opinion of the focus group, the language in which an item was written had a definite and direct impact on the decision process. The following quotes served to support these two findings. A senior official noted:

Item writers write the report based on research done by them. The process is not very formal. Your report is a reflection of yourself.



Another senior official remarked:

I have also found that items, and I am hundred percent honest when I say it, items that are written in English with English attachments, go through the council just so [quick]! And I am concerned about it. It appears to me that when items are written in English there is fewer ... Let's not delve deeper! It is more difficult in English, and then it just goes fast ... I don't know if I am paranoid about it, but I think it is worrying.

A councillor shared the same concern:

This may become a tactic of an official or officials when they want to push things through. Then do it in English... Once officials become aware of this, to do it in English, they will write it in English. This may be dangerous!

These findings are supported by Morgan (2006).

An individual can shape issues and objectives most directly through preparing the reports and contributing to the discussion on which the decision will be based. By emphasizing the importance of particular constraints, selecting and evaluating the alternatives on which a decision will be made, and highlighting the importance of certain values or outcomes, decision makers can exert considerable influence on the decision that emerges from discussion. (p. 174)

**Sub-theme: *Deciding on issues:*** Municipal decisions were made by the municipal council, the EMC, portfolio committees as well as delegated parties. Delegated parties that consisted of individuals or groups had the delegated authority to take decisions on behalf of the council as the accountable party. Directors had much decision-making power in terms of their positions within the bureaucracy. The mayor and the speaker also had much decision-making power in terms of their personal positions in the political structures. A common theme that ran through all the interview data was that both individuals and groups consulted widely before important decisions were made. However, there was no legal obligation for the council to either accept or act upon any advice from ward committees or advisory forums or other non-governmental forums. A willingness to consult and to really consider other points of view tended to enhance the adaptive capacity of an organisation (see Chapter 6 for details).

The thematic analysis also revealed and confirmed that the power of the majority vote was enormous. A majority vote empowered the ruling party or coalition to do what they wanted as long as it was permitted by legislation. Although the minority party might not be able to control decision processes, they could influence the decision process through their inputs. Current and former mayors and councillors from both the DA and the ANC confirmed that they had benefited from inputs made by the opposition party during decision-making processes. The finding was that it was effectively the caucus of the ruling party or coalition that decided during EMC meetings what decisions would be taken formally at council level. An interviewee observed that "*the council [was] only the rubber stamp*" for the decisions and the recommendations made by the EMC. Between 2016 and 2021 the EMC consisted of only DA councillors. (During earlier terms no minority party members of the EMC had voting rights.) The following quote by a current DA councillor summarised the above findings:

Before every portfolio committee, EMC or council [meeting] we have a caucus [meeting]. Each party has its own caucus. The caucus is the most important. The decision is taken there. When the item reaches the council, we know exactly what the decision will be.

The conclusion was that the democratic process allowed the caucus of the ruling party or coalition to take municipal decisions at the EMC before the full council "*rubber stamped*" the decision. It is only through good arguments and not through their votes that a minority party could influence the outcome of a decision at council level.

**Sub-theme: Governance of decision processes:** Municipal decisions and decision processes were governed by means of external governance and self-governance processes and systems. Governance was focused on two aspects, namely the *integrity* of decision processes and the *performance* of municipal departments against targets.

The focus below is on governance of the *integrity* of decision processes.

Governance of the *performance* of the different directorates, departments and directors took place in terms of the IDP, associated KPIs, and the SDBIP. Results were reported in the annual reports of the municipality.

External governance was imposed through legislation and industry or disciplinary norms, practices and standards. Details of relevant legislation were discussed in Chapter 4. Decision processes within each directorate were governed according to the national and international disciplinary standards that applied. This included engineering standards and best practices, safety and risk management standards, accounting norms and practices, corporate governance standards and human resource management practices. A director noted:

There is the Constitution, Systems Act, Structures Act and numerous other laws that create a framework for decision making. We have to be knowledgeable about this framework and we have to say what the consequences of our decisions are, and then we take the decision.

The importance of these laws, by-laws, rules, and regulations was emphasised by each and every interviewee, by officials and councillors. The following comment from a senior official captured the consensus view:

There are the MFMA and the regulations that prescribe how we must act and what we must do. Actually, there is no room to deviate.

Self-governance refers to the way the municipal decision makers govern municipal decision processes in terms of relevant legislation as well as norms, practices, and standards of each discipline, and self-imposed arrangements, and by-laws. The AG emphasises the critical role of “adequate and sufficiently skilled officials” in establishing a strong control environment within the municipality (AG, 2020a:143). The King V Report on corporate governance and generally accepted accounting practices (GAAP) also applies to a municipality. External governance can only be effective if internal and self-governance takes place. Self-governance resides within the municipality as the governing authority (Dostal *et al.*, 2005:92). Both internal and external governance processes are form-maintaining processes that aim to control system variables within specified and desired limits. A senior director referred to the relation between external and self-governance as follows:

Legislation insinuates that all role players have to regulate themselves. But it is a self-imposed task. Fortunately, we have a very responsible management team that will address politicians through the mayor, speaker or caucus leaders and warn them when councillors act inappropriately.

An important self-governance process was the formal municipal decision process itself. It includes numerous quality control processes and self-governance processes. An official explained:

The MM, who signs off last [on items] ensures that all the directors are in line. Legal services ensure that the MM does not support a recommendation that is against the law.

An important aspect of the governance function was the monitoring and management of deviations. Internal auditors and external parties, such as the AG, monitored performance and deviations from generally accepted norms, standards, targets, and legal prescriptions. The

annual report of the municipality contained details about deviations within all the directorates and their departments for the year in focus.

The high regard for *self-governance* among all the directors and most councillors was illustrated clearly by the following statement from a director: *“We will do nothing, and my department knows it, we will do nothing that implies us with any [inappropriate] activity.”*

The annual report of the municipality for 2019-2020 provided a comprehensive overview of the governance structures of the administration and the political structures. The numerous consecutive clean audit reports by the AG were testimony of governance *“according to the law”* within the municipality.

Edelenbos and Eshuis (2009:193-212) argue convincingly that both trust among actors and control of governance processes can reduce apparent complexity by limiting the number of possible (undesired and negative) consequences and outcomes of decisions.

**Sub-theme: *Feedback processes:*** Several feedback processes influence decision making. Legislation allows affected parties and stakeholders to use legal processes to instruct the municipality to revise controversial decisions. Both internal and external governance processes serve as negative feedback processes that keep municipal decision making on the right track (Dostal *et al.*, 2005). The council, having the ultimate decision-making authority, may formulate strong policies to influence delegated decision making by the administration. The AG has the power and mandate to address deviations from legal prescriptions by a municipality. The MFMA and other laws allow the provincial or national ministers to intervene in cases of severe misconduct.

**Sub-theme: *Implementing decisions:*** According to Drucker (1967) a decision only has value if it is implemented. The above definition of a municipal decision stipulates that a decision must at least include a clear plan about implementation thereof to qualify as a decision. If a decision is implemented on behalf of the municipality the implementation step is part of the decision process. This arrangement allows for the evaluation of project implementation in order to learn from experience and to build this learning back into the decision process through feedback processes. This type of learning can be described as action learning (Jacobs, 2014; Schwella, 2015). Project implementation by third parties on their own behalf after the municipality has taken a decision does not form part of the formal municipal decision process.

**Sub-theme: *Drivers of decisions:*** The data analysis indicated that three factors or forces propelled decision issues through the formal decision process, namely *time*, *agile actors*, and *legislation*. Time as a driver of decision processes referred to time schedules, year planners, legislative arrangements, prescribed rules and regulations, and annual planning cycles that drove decision processes forward. The annual budgeting process and the development of associated KPIs and the SDBIP, for example, followed a strict time-driven cycle. Life cycle theory is used as a framework to study this kind of decision process (Poole & Van de Ven, 2010).

Agile actors actively participated in decision processes to drive decision issues through in their own interest or in the interest of the municipality. Agile actors were councillors, officials, residents or other parties. Room (2011:144) refers to institutional entrepreneurs and technological entrepreneurs who act as “agile first movers” in a process of self-organisation for positional advantage. The activity of the first movers introduces the dynamics into the system, ensuring that the system remains “far from equilibrium”. Agile actors, such as entrepreneurs, councillors and officials, initiated and drove decision processes. An interviewee explained how a responsible councillor might drive an issue through a decision process: *“The councillor feels proud when such an item is approved, and he or she can report back to the community. Councillors drive, but it is mainly legislation and processes that drive decisions.”*

Legislation also provided stimuli that drove decision issues through decision processes. Legislation might prescribe the minimum or maximum duration of critical process steps in the overall decision process. A director explained how legislation put pressure on him to expedite decision processes about land uses:

The law determines how much time I have as the decision maker to take decisions ... The law streamlines and expedites decision making. Because the law gives time limits, I am forced to take decisions within certain time periods.

Another director explained how legislation prescribed decision schedules:

A lot is prescribed in terms of legislation that requires that certain decisions have to be taken at certain times, prescriptive ... You need to do things at certain times to complete work within the financial year ... So much is prescribed.

Cyclical and time-driven decision processes that are governed by legislation can be described in terms of a life cycle theory of decision making (Poole & Van de Ven, 2010:550-551). Such processes progress through a sequence of prescribed and regulated stages towards the goal or end point. A life cycle theory of decision making can be used to study the annual legislated processes to develop an IDP (for a five-year term), an SDBIP and a corresponding annual budget.

Cilliers (1998) notes that decisions, like complex systems, are driven forward by imbalances. "Non-linearity, asymmetry, power and competition are inevitable components of complex systems. It is what keeps them going, their engine" (Cilliers, 1998:120).

**Sub-theme: Consultation:** Councillors and officials of the municipality consulted widely. Most interviewees referred to personal contacts within government, academic or legal institutions, as well as individuals with expertise whom they consulted. The entire decision process was informed by a variety of consultation processes initiated by councillors or officials. Consultation took place during meetings and caucuses of the political structures. Councillors often consulted knowledgeable and trusted officials. The public was often consulted through formal workshops or by means of open invitations to participate in important decision processes. Workshops on complex issues, such as sustainable energy futures, tourism development, environmental matters, and spatial development were facilitated and attended by experts as well as residents.

Consultation served at least three purposes: First, it contributed to the integrity of decision processes. Second, it ensured that as much relevant information as possible was available during decision processes. Third, consultation involved stakeholders in the decision process which contributed to the legitimacy, transparency, and acceptability of the process and the decisions.

The following quote by a councillor indicated the importance of the consultation process:

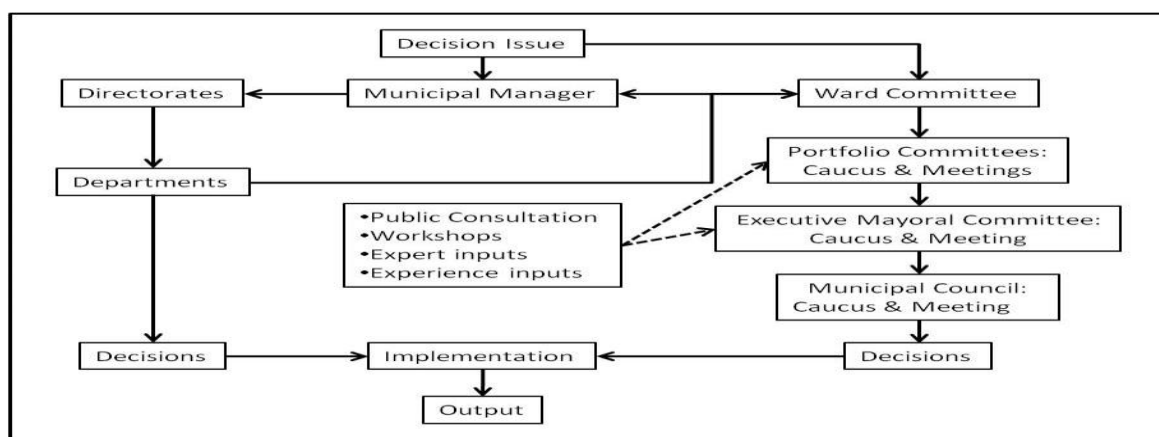
Council must take an informed decision. The council will never take a decision that has not gone through a process. To take an item directly to the council means trouble. We must take cases to the ward committees, then to the portfolio committee, the EMC and then finally to the council. In the meantime, there are public participation processes. When you go through the processes, you get the most trouble-free council decisions with which everybody agrees because it has been thrashed out, advantages and disadvantages discussed, and everybody agrees, or they vote against it out of principle.

All the above processes were interconnected in a way. The processes were also embedded in certain structures. Nutt notes that "process cannot exist without structure and structure cannot exist without process. Only by considering both structure and process can each be fully appreciated. To do so calls for simultaneous viewing because there is *structure in process* and *process in structure*" (italics in original) (Nutt, 2010a:586). Neither the process aspect nor the

structure aspect of the phenomenon of decision making can exist in isolation. They are entangled (Dostal *et al.*, 2005). The following theme represented structural aspects of decision making.

**Theme: *Structural aspects of decision making*:** Structural aspects permeate the entire domain of decision making. Structure reflects patterns of order in space and time. Structures are time-dependent and change over time under the influence of processes (Dostal *et al.*, 2005). Structural aspects of decision making refer to patterns in both processes and in organisational hierarchies. Processes may be linear, cyclical, parallel or in series. Actors are structured hierarchically in political, organisational and bureaucratic structures. Patterns are observed in the way people vote and innovate. Structures guide and synchronise the flow of decision processes.

**Sub-theme: *Linear decision processes*:** The data analysis revealed that municipal decision making was primarily structured as a linear decision process that made provision for consultation and limited degrees of creativity and innovation. This formal process is summarised in Figure 5.8, below. Feedback processes are not shown in the figure to keep it simple. “A decision process is made up of a set of activities that begins with the identification of an issue and ends with action” (Nutt, 1984:415). This logic is also indicated in the figure. A decision issue was normally forwarded to either the ward committee or the municipal manager. From there the issue followed the formal route through the decision processes of the portfolio committee, the EMC, and the council. Alternatively, a properly structured or simple decision issue could be delegated to a directorate or a department to address. This process made provision for consultation and creative inputs.



Source: Candidate WTB Janse van Rensburg

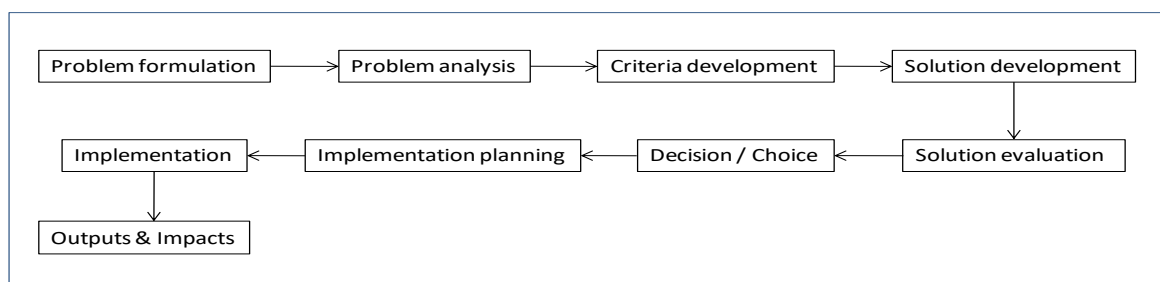
**Figure 5-8 Linear structure of the formal municipal decision-making process**

Figure 5.8 illustrates the linear flow of decision issues through the departments according to the delegation structure and through the decision forums. This figure illustrates a key assumption of the process approach to decision making, namely that “the world is composed of entities which participate in events and which may change as a result” (Poole *et al.*, 2010:545). The figure shows that decision issues followed a structured pattern through the various decision-making bodies. However, this model does not indicate the process steps involved in decision making as discussed in Section 3.3.3 above. The focus is on the structural aspects, namely the entities involved.

Poole *et al.* (2010:545) provide a process theory perspective on decision making: “A process theory ... conceptualizes the decision-making process as a series of events that bring about

or lead to some outcome". These authors distinguish the following steps (rather than entities or structures) in the process of decision making, namely "problem formulation, problem analysis, criteria development, solution development, solution evaluation and selection, and implementation planning". These process steps are depicted in Figure 5.9. The temporal ordering of these events is critical to the outcome of the process (Poole *et al.*, 2010:544-545).

The progression of a decision issue through a formal decision-making process could also be conceptualised as the emergence of a decision through space-time in terms of a Biomatrix systems perspective (Dostal *et al.*, 2005:128-131). Movement along the spatial dimension could reflect movement between micro and macro structures, or between activity systems (with a focus on process) and entity systems (with a focus on structure). Progression through time could include movement of a decision through the development stages or phases – from past to present to future. Longitudinal studies focus on this type of progression.



**Figure 5-9 A process model of decision making (Poole & Van de Ven, 2010:545)**

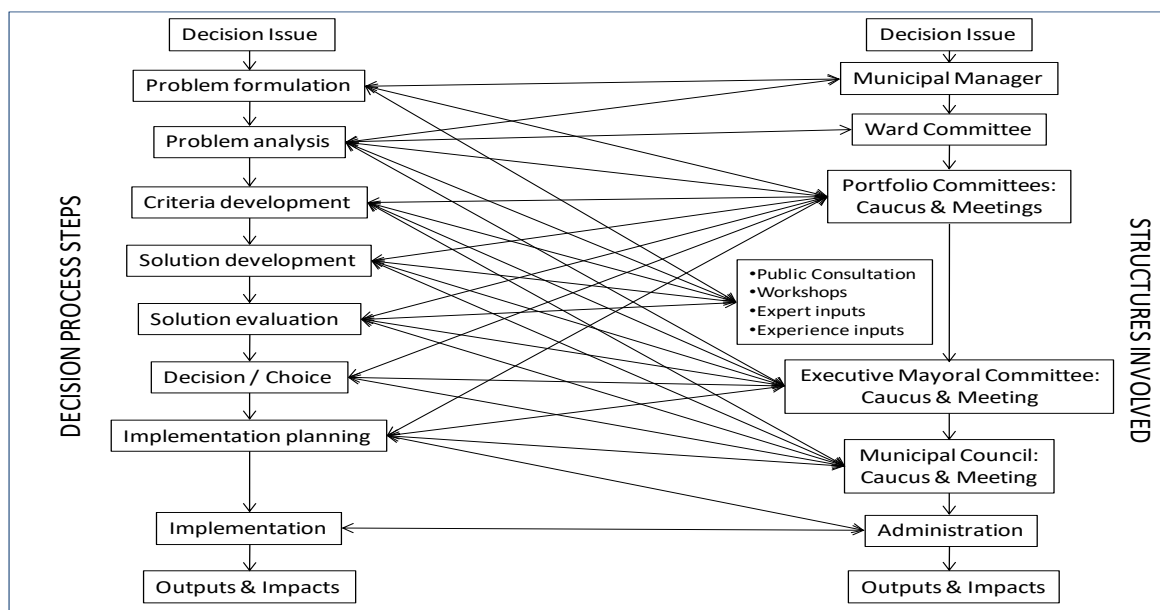
The following question arose: Could these two figures be integrated to show the linkages between the process steps in Figure 5.9 and the entities involved in the decision process in Figure 5.8? Figure 5.10 shows an initial attempt to superimpose the two figures onto one another.

Figure 5.10 depicts the links between the steps in the decision process and the entities involved in the formal decision-making structure. Although this is a tentative illustration of what happened within the decision processes and structures of the municipality the following was noted: The ward committee had no decision-making powers. The decision-making bodies (that could choose or "make the call" depending on delegated powers) were the portfolio committees, the EMC, and the council. Depending on the nature of the decision issue and the delegated authorities, any of these three bodies could participate in any combination of the process steps or in all the process steps. Implementation planning was normally performed by the administration. However, the task of implementation could be done by the municipality, or it could be contracted out. For the sake of simplicity, no feedback loops were included in the diagrams.

An interesting finding was that during all the interviews no one talked about the individual *process* steps involved in municipal decision making as depicted in Figure 5.9. Interviewees always talked about the structures involved in decisions as illustrated in Figure 5.8. The interviewees were much more aware of the structural aspects of decision making than of its process aspects. Interviewees were silent about themes such as problem formulation and verification, criteria development, solution development and solution evaluation when questioned about decision-making practices in the municipality. Only one director elaborated on the importance of decision *criteria* before decisions regarding land use were made.

A few concerns were raised about the formal decision process. Both the process model and the structural model were silent about environmental scanning, scenario development and foresight as process steps within the formal decision process. A senior official registered his

concern about the linear nature of decision making: “*The linear process gives rise to isolated thinking about decisions. There is no integrated thinking about decisions ... Sometimes departments take decisions in isolation.*”



Source: Candidate WTB Janse van Rensburg

**Figure 5-10 Links between decision process steps and applicable formal structures**

A focus on process aspects by decision makers may open up new ways to deal creatively and innovatively with decision issues, especially complex issues. The Cynefin framework, the deliberate creation and utilisation of adaptive spaces, dialogue and collaborative approaches may positively influence the decision process when complex decision issues are addressed (Snowden & Boone, 2007; Ibarra & Hansen, 2011; Van Loon & Van Dijk, 2015; Arena & Uhl-Bien, 2018; Uhl-Bien & Arena, 2018; Greenberg & Bertsch, 2021). These aspects will be addressed in Chapter 7.

**Sub-theme: Networks of decision processes:** The sub-theme *networks of decision processes* refers to the structural aspects of interconnections and interdependencies among serial processes, parallel processes and cyclical processes at different levels in the dimensions of space and time. This finding corresponds with the comment by Poole and Van de Ven (2010:545) that a process model of decision making includes layers of causation operating at different levels and temporal scales.

The generative mechanism that gives a general pattern to cyclical processes is the life cycle theory (Poole & Van de Ven, 2010:550). This theory depicted the decision process involved in developing the IDP and the budget as a sequence of stages as prescribed in Chapter 4 of the MFMA and in Chapter 5 of the Systems Act. “The goal and end point of the change process is defined from the start for a life cycle through a natural or logical developmental progression through institutionally prescribed rules or regulations” (Poole *et al.*, 2010:550-551).

Various cyclical, parallel and linear processes interacted to co-produce the formal decision process. Processes proceeded along the temporal dimension. The formal decision process was the emergent result of interconnected networks of decision processes. Many processes had feedback mechanisms with different time delays that influenced subsequent cycles of

decision making. For example, changes in voting patterns were often observed every five years during municipal elections or by-elections.

**Sub-theme: *Actors within structures*:** Actors functioned within formal hierarchical structures and at the same time they participated in formal and informal networks. The municipality governed locally within a cooperative governance framework that included national and provincial government. Councillors functioned within national, provincial, regional, and local party-political hierarchical structures. Within the municipality, the councillors functioned within the political structures that spanned the hierarchical levels of the council, the EMC, portfolio committees, and ward committees. Officials performed their duties within the seven organisational levels of the administration under the leadership of the municipal manager.

Officials and councillors were also connected to many formal and informal networks. ICT systems and technological innovations of the 4IR allow individuals to network across boundaries of all kinds. ICT networks span the globe and “shrink” time and space. These kinds of connectivity provide access to sources of information, knowledge, wisdom, resources, and human talent that can be mobilised to participate in decision processes (Friedman, 2006; Martin, 2006; Schwab, 2016).

Interconnectivity through all these structures and networks allow perturbations and stimuli to propagate through the municipal decision-making system. Connectivity allows external and internal political, economic, social, technological, environmental and legislative influences to spread widely. Connectivity is an important co-determinant of adaptive capacity (see Chapter 6).

**Sub-theme: *Bureaucratic structures*:** The administrative structures of the municipality are governed in terms of a bureaucratic governance model. This bureaucratic system brings order to the municipal environment. It enables the orderly implementation of decisions, policies and strategies formulated by the political structures involved. Unfortunately, this system is burdened by “red tape and nonsense”. Rainey (2009:209) defines “red tape” as burdensome administrative rules and requirements that entail compliance burdens without adding much value. A councillor, very much aware of this burden, said: “*We always keep red tape in mind and want to limit it where the law allows it.*” A director expressed his frustration with the burden of red tape:

We are caught up in red tape and all kinds of nonsense so that I feel I cannot make my full contribution about strategic matters as I am supposed to be doing, because it is a battle about minor aspects, procedures, and forms that must be completed ... As far as I am concerned it is a huge impediment here within the organisation; it is a big stumbling block.

The capacity to implement decisions in a stable and controlled environment is a key strength of the bureaucracy. In this way it also contributes to the adaptive capacity of the institution. Another important element of the bureaucracy is the delegation system which allows for the effective delegation of accurately structured decision issues.

The properly documented delegation register, policies, laws and regulations, the Collaborator data base and trained officials that were “*fit for purpose*” constituted essential components of the delegation system. A senior director made the following remarks about the delegation system:

Delegations are extremely important. When you get a new political environment, all delegations are withdrawn immediately. The more trust you build ... the more the decision-making authority delegates decisions to make run-of-the-mill decisions easier. Provided you have a proper set of rules you can take the decision and finalise it. It is driven largely by stability, political stability, and administrative stability. When trust is lost, all delegations are withdrawn immediately.



The bureaucratic governance model was discussed in Section 3.7.2.

**Sub-theme: *Voting patterns*:** The norm in the ruling party or coalition and in the opposition party had always been that all members of a caucus voted the same, namely, unanimously in favour of, or against proposals. This arrangement stifles independent thought and promotes groupthink (Janis, 1991).

General voting patterns were also observed in the way registered voters vote for councillors and for political parties. Communities and wards with a very large majority of very low-income residents tended to vote for councillors representing the ANC. Communities and wards with a majority of high-income voters tended to vote for DA councillors. Voting patterns also changed over time as a result of contextual influences.

**Sub-theme: *Creative spaces*:** A former deputy mayor said: “*Hessequa municipality believes in innovation, partnership, technology.*” Therefore, creative spaces (e.g., events, seminars, workshops, discussions, meetings, and advisory forums) are created to stimulate creativity and innovation. These events or creative spaces corresponded with the concept of adaptive spaces proposed by Arena and Uhl-Bien (2016) and Uhl-Bien and Arena (2018). Creative spaces may contribute to the adaptive capacity of a CAS.

**Sub-theme: *Power structures*:** Councillors and officials participate in decision processes from their positions of power and influence within hierarchical structures and networks. Each decision maker possesses a unique level and combination of influence and power. Influence is the ability to affect the behaviours of others in a particular direction (DuBrin, 2016:270). Power stems from positional power and personal power. Power also refers to “the potential or capacity to influence” (DuBrin, 2016:270). Influence is related to the ability to leverage such power in decision processes in order to affect the outcome of the decisions. The framework in Table 5.3 serves as a very tentative but convenient framework to plot the stakeholders affecting municipal decision making in terms of the variables of power and influence.

The municipal manager, speaker and mayor had high levels of formal power and influence in the municipality, emanating from their positions and legal appointments in the hierarchical structures. Ordinary councillors had very limited position power as individuals. The level of influence of individual councillors appeared to correlate with their years of experience, education, political appointments within the political party structures to which they belonged, voter support and their personality. The directors of the finance department and the department of planning and development appeared to have very high levels of both power and influence in decision processes.

**Table 5-3 Stakeholders with varying degrees of power and influence**

<b>Influence: High</b>	Influential residents, experts, academics, external stakeholders and politicians, minority parties, interest groups, other spheres of government.	The council, EMC, mayor, speaker, municipal manager, some directors, officials and councillors.
<b>Influence: Low</b>	Residents, indigent people, individual officials, individual councillors, and registered voters.	Individual councillors, directors and officials.
	<b>Power: Low</b>	<b>Power: High</b>

Source: Candidate WTB Janse van Rensburg

**Theme: *Contextual influences*:** The thematic analysis revealed that various contextual factors influenced the municipal decision process. This finding corresponds with an observation by Linstone (1984:43) who observes that decision processes are entangled with elements within the contexts within which they evolve and co-evolve. Factors such as the aims and objectives of stakeholders and actors, decision criteria applied during the decision

process, VUCA factors, inputs from stakeholders, and the value systems of actors and the organisation influence the decision process. Each category of factors is discussed next.

**Sub-theme: *Aims and objectives of stakeholders:*** The aims and objectives of the municipal institution, the councillors, and the officials were identified in the interview data. Formal needs or aims of the communities were found in documentary data, for example, the IDP and budget of 2020-2021. The consensus opinion among interviewees was that they pursued the objects of local government as stated in Section 152 of the Constitution to the best of their ability and within the constraints of resource availability. A former councillor articulated it as follows: “*You have the Constitution that prescribes what local government must do, Article 151 and the rest. It describes the goals of local government.*” Several interviewees emphasised the importance of the sustainable delivery of basic services and housing. A councillor put it as follows:

The primary function of Hessequa municipality is to supply water, sewage [removal services], electricity and waste removal services to communities. In squatter camps and informal living areas the big distress is housing, housing. This is priority.

A director phrased his understanding of the aims of the municipality as follows:

We know what we have to do – we have to provide clean water, we need to prevent sewage pollution, the roads must be decent, we need to do the basic stuff properly. Then the other things will fall in place. We have a constitutional accountability regarding basic services that we need to provide.

Political aims of national and provincial government and the party that governs the municipality also influence municipal decisions. A director used the following example to illustrate how he had to consider provincial goals in decision making:

The Western Cape Government has five goals that they want to achieve. Take the [application for an] abalone farm as a good example, and you consider one of the five strategic [provincial] goals... the development of aqua culture. The community revolts against it... On the other side the decision maker must consider the strategic goal of the province for municipalities to promote aqua culture.

A DA councillor explained that the manifesto of the DA had a strong influence on the decisions of the ruling party:

When we workshop or adjust a policy, we do it according to the DA policy. We had the DA manifesto ... Then we align the policy of the Hessequa municipality with the policies of the DA and with legislation.

The general pattern in the data was a very good alignment between the aims of the senior officials and the councillors regarding the aims and objectives of the municipality. A general observation in the data was that ANC councillors tended to focus specifically on the needs of the poor communities whereas the DA caucus had a relatively more balanced focus on all the wards. However, officials and councillors agreed that Still Bay, being the main growth centre with a majority of DA voters, attracted most of the allocations in the capital and operating budgets. In general, there was broad alignment of the aims of the different municipal role players.

**Sub-theme: *Decision criteria:*** Decision makers considered a range of decision criteria during the decision process. Rather than aims and objectives these criteria constituted constraints, limits or boundaries within which decisions had to be taken. Different categories of criteria had been identified in the data. These were financial criteria, technical considerations, reputational considerations, political considerations, social considerations, legal criteria, consequence management and the time factor. Each category was regarded as very important by most

interviewees. Some interviewees, however, emphasised the importance of specific criteria that applied directly to their area of concern.

*Financial criteria* were used to screen and to prioritise projects in terms of the following questions: Was the initiative affordable? Was it justifiable? Had it been budgeted for? Did it satisfy the requirements of the long-term financial plan? What cost containment measures could be applied? A former mayor, like many other interviewees, emphasised the importance of the long-term financial plan of the municipality as follows:

We always worked with it and considered it in our decisions ... We worked strictly according to the financial plan. We always took it very seriously. And it was always a reference. We always used it.

*Technical considerations* address the need to create sufficient infrastructure capacity over time based on projected changes in both the dependent and independent variables. An important consideration is the optimal balance among expenditures on maintenance, replacements and capacity expansions over the longer time.

*Reputational concerns* played a very important and determining role in decision making. After having received eight consecutive clean audit reports from the AG most interviewees regarded a clean audit report as a critical decision criterion. The following quote by a director represented the consensus view of the interviewees:

The clean audit is perhaps the best testimonial of good decision making, good administration, good management, good recommendations and support to the council who is ultimately accountable for the municipality.

The mythical importance of receiving a clean audit report and the fear of not getting it introduced conservatism into the decision-making process. See Section 5.2.3.2 and Section 6.3.3 for a detailed discussion about the importance of maintaining a good reputation and the associated effect on decision making.

Diverse *political aspects* influenced the decision process. Local municipal governance was influenced by the DA party that ruled in the Western Cape and the ANC party that ruled nationally. Strategic priorities in the IDP reflected those of the NDP and the provincial strategic plans. Manifestos of both the ANC and the DA influenced the policymaking processes of the municipality. A councillor from a minority party in a coalition government explained how he maintained the rights of minority groups in the coalition government:

I believe in coalition politics, especially where the FF+ comes in and contributes a certain political dimension. No one looks after the interests of minorities. Both the DA and the ANC go for the majority. The FF+ looks after the interests of the minority. A coalition government can balance the focus between majorities and minorities.

Politicians introduced the political perspectives of the parties that they represented into the municipal decision-making processes. Former mayors of the DA and the ANC confirmed that they would consider inputs from opponents provided that these inputs complemented the perspectives of the ruling party. The following quote from a former mayor illustrated this point:

In my time I was absolutely dependent on the advice and the critique of the independent candidate ... I used that critique and employed it to govern. It was important to me ... They could give me other insights that made me change decisions.

A current DA councillor, however, qualified their consideration of inputs by other political parties: *"We don't reconsider our decisions as a result of [their] political motivations but as a result of facts, good arguments and legal opinions."*

The importance of *social concerns* was raised by several interviewees. A quote from a director represented similar perspectives by his colleagues and councillors:

In my directorate I regard the community as the single biggest factor that influences decision making. The influence that projects will have on communities, and the reaction of the community on an application [for land use] play a big role in decision making.

*Legal considerations* have a very strong influence on municipal decision making. The analysis of the contextual environment in Chapter 4 demonstrates that municipal governance is co-defined by, and embedded in a legal framework. The sentiment expressed in the following quote by a senior manager was shared by almost all interviewees: *“In our environment we are led by legislation.”*

The importance of *expected consequences* of decisions as a consideration in decision making was illustrated by the following quote from a director: *“Every time we have to ask: If I take this decision ... what will be the consequences?”* A councillor confirmed: *“We always try to find out what the possible consequences of decisions may be.”* These quotes suggested that there was an element of future consciousness involved in decision making. However, based on all available data and observations this future consciousness appeared to be limited to the first order effects of decisions. A more structured, comprehensive and formal foresight process could build on this limited future awareness. An environmental scanning capability combined with a formal foresight capacity might enhance the decision-making capacity of the municipality (Morrison, 1996; Horton, 1999; Voros, 2003; Lombardo, 2006).

The *time factor* also introduces important considerations into the decision process. A critical analysis of data relating to the dimension of time reveals that the *urgency* of certain decisions, the *timing* of decisions, the *duration* of the decision process and the *planning horizon* have unique implications for decision making.

*Urgent decisions* regarding properly structured issues might be taken quickly based on good intuition and lots of experience as suggested by the following quote of a department manager:

Sometimes you must take decisions on the spot and then you can't go back. Then there is something like experience, and experience will normally lead you to the right outcome. To be honest, for me it is like second nature to take a decision. It is not something about which I really think. I take decisions unconsciously. It is not something about which I think.

Urgent decisions regarding critical or complex decision issues require a different approach (Grint, 2005; Snowden & Boone, 2007; Greenberg & Bertsch, 2021). In times of crisis, the leader must act fast and decisively from a position of command and control. *Timing of decisions* has to do with choosing an opportune time for a specific decision. Some decisions must be delayed or expedited due to variable contextual factors. A former mayor explained how the timing of a decision had to be planned properly under a very unstable and confrontational coalition government.

*Often, I had to delay decisions to calm the storms so that we could talk. That hampered decision making. Some decisions you could not take immediately, because then you know the decision would be in favour of the opposition.*

The *duration* of decision processes has to do with how long it takes to complete the decision process, namely, to conclude the choice opportunity just before implementation commences. The complexity associated with some decision issues results in long, drawn-out decision processes. Delays in the decision process often result in frustration among stakeholders, cost escalations and missed opportunities.

The *planning horizon* indicates to what extent decision makers consider the short term (e.g., one year), the medium term (e.g., five years) and the longer term (i.e., longer than five years) during the decision process. The planning horizon gives an indication of future awareness. Quite often the longer-term future is discounted by a limited focus on the short to medium term only.

**Sub-theme: VUCA factors:** Several VUCA factors originating from the dynamic and fluid municipal context influence the decision process. These factors have been examined in Chapter 4 in terms of different perspectives and frameworks. Essentially these factors introduce volatility, uncertainty, complexity and ambiguity into the decision process. A senior director believed that the most important characteristic of the current context was “*its variability due to environmental factors*”. Coded data contained numerous references to dynamic system variables that belonged to this category of VUCA factors. A key finding from the data analysis was that decision makers were not able to distinguish between complicated issues and complex issues (Poli, 2013). They lacked the vocabulary to describe the concepts. The implication was that they might find it difficult or impossible to frame a decision issue or to make sense of a decision issue in order to devise a strategy that was appropriate to deal with the issue (Grint, 2005; Snowden & Boone, 2007; Greenberg *et al.*, 2021).

**Sub-theme: Inputs from stakeholders:** Inputs from stakeholders were obtained through three broad strategies. *Communities are consulted* through the press, electronic and social media, meetings and personal interaction. *Workshops are conducted* often to get creative and innovative inputs from relevant stakeholders. *Individuals* with specialist knowledge and expertise as well as knowledgeable people with context-specific experience and knowledge *are consulted*. All three these sources of inputs provided valuable inputs into municipal decision processes. The following quotes from a DA councillor and an ANC councillor, respectively, illustrated the importance attached to inputs from communities.

We go to the communities. We ask what they think, [we] ask for their inputs. That is information that is considered in decision making ... You consult your community and bring the feedback to the council via the portfolio committee.

The community gives its inputs first and then the caucus. Last week we held a community meeting ... The community gave me a mandate to act. The mandate influences all my decisions as well as all the decisions we have to take ... We consult the people.

A former mayor confirmed the importance of workshops as a source of fresh ideas:

This is exactly where experts can share new technology and ideas with us in view of future decision making. You need fresh ideas from elsewhere and you have to get experts to come and talk about projects.

All these inputs found their way into the decision processes of the municipality where they were considered. The reality, however, was that the municipal decision makers were not legally obliged to accept or act upon any of these inputs.

**Sub-theme: Value systems:** Two main categories of values were observed in the data, namely *positive values* and *negative values*. Positive values referred to a set of values based on Christian principles. *Positive values* were constructive values that contribute to ethical and accountable governance and decisions. These values were shared and expressed by most interviewees. Positive values mentioned by interviewees included trustworthiness, honesty, integrity, respect for oneself and others, as well as care for one another and for communities. A councillor confirmed that Christian values were important in the municipality. He remarked:

For me it is all about respect, respect for yourself and respect for others. This is priority for me. And then care for one another and for our community. Religion is always important.

Here we can express our religion. We talk about the Christian religion. And we put it in the IDP.

Negative values were those that had a negative influence on decision making.

The importance of constructive and positive values among decision makers was a common theme in the data. In general, positive values informed the behaviours of the decision makers. Positive values dominated and overshadowed negative values in the municipality. These findings were supported by many observations over many years by the researcher and it was substantiated by the data.

#### 5.2.4 Making sense of the empirical findings

The empirical findings based on the thematic analyses in Chapter 4 and Chapter 5 can be interpreted in terms of the conceptual model of Franz and Kramer (2010:536). This oversimplified contingency model of decision making (depicted in Figure 3.1 above) considers the relationships among (1) the decision characteristics, (2) an appropriate decision process, (3) intervening contextual factors, such as personal and organisational characteristics, and (4) decision outcomes. The links between these four variables and the corresponding empirical findings based on the thematic analysis are discussed briefly.

**Decision characteristics:** The main theme called *characteristics of decisions* characterised decisions in terms of three sub-themes, namely *nature of decisions*, *purpose of decisions*, and *decision-making body*.

**Appropriate decision process:** The main theme called *the formal decision-making process* made provision for more than one formal municipal decision process. These included the formalised processes in terms of the delegation system and the formal linear and serial processes involving the political structures as depicted in Figure 5.8. The formal municipal decision process was studied with due consideration of its process and structural aspects.

**Intervening contextual factors:** The theme *contextual factors* contained various sub-themes of contextual factors that impacted upon the decision process. These sub-themes were *the aims and objectives of stakeholders*, *decision criteria*, *VUCA factors*, *inputs from stakeholders*, and *value systems*. In addition, Chapter 4 described in detail the context within which the municipality took decisions. It was depicted as a *political arena* with all its complex dynamics (see Table 4.2). Another main theme in Chapter 4, namely, *contextual awareness of interviewees* shed light on the temporal and spatial awareness of interviewees, their awareness of challenges and complexity, and on the municipal culture. The main theme *emergence of complexity* (in Chapter 4) sketched a picture of the complexity of the contextual domain.

**Decision outcomes:** Thus far the focus of this study had been on the municipal context and on the decision process and not on the outcomes of decisions. However, from a complexity perspective, it was not always possible to know whether the outcome of a decision regarding a complex issue would be favourable or unfavourable. Only time would tell.

In the next section, several municipal decisions are selected as case studies for analysis. Reference is also made to the empirical findings thus far.

### 5.3 Cases of complex decisions

Poole *et al.* (2010:543) describe research on decision processes as follows:

The investigator must follow the decision along its winding and often surprising path through time, reconstructing its significant features and looking for temporal patterns and

complex relationships among multiple interdependent variables. Processes are shaped by ... contingencies, complex conjunctions, historical and social context, intermittent causal factors that impinge on the process at only a single point in time, and path dependence.

A similar logic and a narrative approach are applied below to examine five purposively sampled decision issues (Polkinghorne, 1988). Patton's (2015:536) "case study rule" is applied here to purposively sample specific decisions as case studies at the "lowest level unit of analysis possible". These decisions are embedded as mini-cases within the municipality as the main case. Sampled decisions are used as case studies to illustrate how complexity renders them difficult to deal with. Due to space limitations the five decisions sampled for analysis are documented in Appendix Q. Two of these decision processes were studied in more detail and only the findings are presented in the latter part of this chapter. The annual budget process and the decision to build a solar-driven reverse-osmosis water purification plant in Witsand are selected for closer analysis.

### 5.3.1 A purposive sample of cases of complex decisions

During the depth interviews a purposive sampling strategy was applied to identify a population of potentially complex decision issues for examination (Patton, 2002:230-255; Bryman, 2012:418). The resulting list of 21 potentially complex decision issues appears in Appendix O. Each decision issue in the population appeared to be complex in terms of the descriptions of complexity in Table 3.2, Table 3.4 and Table 3.5. Interviewees referred briefly to some of these decision issues as examples of complex decisions during interviews. The decisions were not discussed in detail during the interviews. Included in the population were decisions described as failures or successes, and as good, bad or controversial.

A limitation associated with this sampling strategy is that lessons learned may suffer from lack of generalisability (Bryman, 2012:418). Extreme focus on either excellent or poor decisions may distort perspectives. Hence care was taken to minimise possible selection bias which may result in an overemphasis on either excellent or poor decisions.

From the list of 21 potential cases only those cases for which sufficient data was available for a proper analysis were sampled during a second round of purposive sampling. Staff from the directorate corporate services was requested to search the Collaborator data base for data about all 21 decision issues. They could only find sufficient data for five decision issues on Collaborator. From the population of 21 decisions only these five decisions were purposively sampled. Relevant data was off-loaded from the Collaborator database on 23 November 2021.<sup>4</sup> Note that this data search was done after second-cycle coding of the interview transcriptions started. Sufficient data was obtained for the following five purposively selected issues:

- The municipal budget process
- Decision to rent out Takkieskloof Holiday Resort
- By-law relating to the keeping and treatment of dogs and cats
- Decision to close and rehabilitate municipal landfill sites
- Decision to build a solar-driven water purification plant in Witsand

From this sample of five decisions two were selected purposively for a more detailed analysis. These two cases are the budget process and the water desalination plant in Witsand. The findings for these two cases are presented below.

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<sup>4</sup> After the national election of November 2021, a new council was appointed on 11 November to serve during the 2021-2026 term. The DA party and most of its councillors remained in power. As a result, this study could continue without any disruption and with the full support of the administration and council.

Data from the Collaborator data base, interview data, focus group data as well as additional documentary data and observations inform the analyses of the sampled decision issues. Rich data and documentation about municipal budgeting were supplied by the head of the budget office during an interview on 13 October 2021.

The focus of the analysis of the sampled decisions was on the decision process, the roles played by stakeholders of the decision processes, the nature of the decision issues, the relevance of context, and the contingencies that contributed complexity to the decision process. This purposive sample of decision issues was believed to contribute richly to the development of knowledge and understanding of municipal decision making (Patton, 2002: 236).

Details for all five sampled decisions appear in Appendix Q. The findings on the budget process and the desalination plant based on comprehensive data are provided next.

### 5.3.2 Budgeting: A complex decision process

The annual municipal budgeting process can be framed and understood as a complex decision-making process (Rubin, 2005; Rhodes, 2007; Teisman *et al.*, 2009; Preiser *et al.*, 2018). Many diverse and autonomous actors with contrasting aims and motives interacted during the budget process. These actors operated from different hierarchical levels of power and different levels of influence within a radically open environment. Connectivity was established through meetings, electronic and printed media, informal discussions, weather patterns, markets, and so forth. The budget process had to consider numerous dynamic variables from the internal and external context that might influence revenues and expenditures. Some participants experienced the budget as a political instrument that discriminated against the opposition party. A senior ANC councillor remarked:

I may sound racist. You'll see if you look at the budgets since 2011. In the poorest communities where there are no white people, you'll see the pattern... Most money is spent in Aalwynfleur [where white people live], an area that is much more developed than Kwanokuthula [where black people live]. That's why we'll never approve the budget ... our inputs are not considered in the budget. This is our biggest headache.

Another councillor from the ANC opposition shared the same sentiment in the following quote:

It may not be obvious, but you can detect the racist undertones very clearly, especially in decision making. Take the budget for example. I experience it as racist that my ward gets so little, and Still Bay gets so much.

The budget process proceeded through several iterative cycles during which expected revenues and planned expenditures converged towards a balanced budget. The process to balance the budget was an adaptive and self-organising process. During these cycles positive feedback loops that represented the untamed growth in needs were balanced by negative feedback loops that represented the availability of limited resources and cuts in expenditures. The recent Covid-19 pandemic and the effects of global warming introduced non-linear system dynamics that affected the 2020–2021 operating budget in several ways. The feature of path-dependency was observed in the budget. Certain patterns of funding and types of expenditures had a history. Historic investments in large low-cost housing schemes, for example, had the (unintended) result that provision for free services and infrastructure now had to be made in the budget for increasing numbers of jobless indigent people living in these houses.

The budget process could also be conceptualised as an emergent process. Diverse ideas, premises, goals, priorities, strategies, policies and constraints entered the formal decision process and they interacted. All these inputs were considered and processed before the



IDP and a corresponding draft budget were produced. The draft budget was adjusted and evaluated before the final budget was approved. Implementation of the approved budget generated tangible impacts.

### 5.3.3 Budgeting as a decision process: A theoretical perspective

A theoretical perspective of the budgeting process in terms of the theoretical frameworks discussed in Chapter 3 revealed several interesting findings. Incremental decision making was typically applied in the annual budget process (Lindblom, 1959; Rainey, 2009:184). The council normally restricted changes in tariff increases to limited increments in any given year. Incrementalism is appropriate for a relatively stable environment where trends are predictable with good accuracy (Jones, 2013:361). Incrementalism also stimulates continuous learning through multiple feedback loops (Lindblom, 1959:85). This approach results in a low-risk decision process (Lindblom, 1959:86).

Budgeting as a decision process can also be understood in terms of Etzioni's mixed-scanning decision model (Etzioni, 1967; 1986). From this perspective, the IDP contained the higher-order fundamental decisions that gave strategic direction to the lower order budget-related policies and budget decisions. The budget-related policies, the budget itself and the SDBIP therefore reflected the numerous incremental decisions in support of the strategic decisions contained in the IDP.

Janis's groupthink model of decision making aptly described the way the caucuses of both the ruling party and the opposition party often took decisions. Members of each caucus were deeply involved in a cohesive in-group of party members whose "strivings for unanimity over[rode] their motivation to realistically appraise alternative courses of action" (Janis, 1972:9). They suspended their independent critical judgement and thinking and then made inferior decisions. During council meetings the members of the ANC caucus and the members of the DA caucus voted according to the consensus within each caucus. Members of the ANC opposition party always voted unanimously against approval of the annual budget when tabled for approval at the March council meetings.

Morgan's (2006) political model of decision making provides a very appropriate framework to examine municipal decision making, including the decision process to compile the budget. The political model emphasises the use of power and influence by actors in pursuit of conflicting aims and objectives within a context of scarcity and political motives. This model was applied in Section 4.4.1 above to study the municipal context within which decisions were made. The context was described in terms of the metaphor of "a political arena", as the main theme. Corresponding sub-themes referred to the political actors within the arena, their diverse interests and aims, the strategies and tactics followed in pursuit of these aims, the conflict that arose in the process, and the use of power by each group.

A process theory of decision making explains how a series of events leads to some result or outcome (Poole & Van de Ven, 2010:544). The above overview of the budget cycle conceptualised the preparation of the budget as a cyclical decision process consisting of numerous process steps in series and in parallel that resulted in an approved budget. The generative mechanism that governed the budget process was primarily a life cycle motor (Poole *et al.*, 2010:550). The general pattern of this decision process was imposed by relevant legislation, such as the MSA and the MFMA. The budget process could be perceived of as a cyclical pattern of process steps with a one-year frequency. These steps included a divergent phase of collecting ideas and inputs for the IDP and budget, strategic direction setting (in the IDP) and alignment of the budget with the IDP, a convergent phase of harvesting ideas in support of the strategic goals, a phase of balancing the budget, a phase during which the budget was critiqued, and finally an approval phase. Thereafter the budget was implemented.

Teleological theory can be used as a generating mechanism to demonstrate how a series of annual budgets over several years pursue the developmental goals of the municipality and national government as stated in the Constitution (Poole *et al.*, 2010:551). These goals included the goal to provide all residents with running water, sanitation, electricity and a clean environment. An adaptive decision-making approach was followed over the years. Every year adjustments were made to the budget as priorities changed and targets set in the IDP and SDBIP were met.

Dialectical theory provided insight into the generating mechanism at work during the conflict-laden decision processes where councillors from the ruling DA party and councillors from the opposition ANC party debated allocations to budget votes (Poole *et al.*, 2010:552-553). Conflict and tension arose when limited funds had to be allocated to the different wards. Some form of synthesis normally emerged from the dialectical positions of the political parties as they dealt with the contradictions, conflict and tension involved in the negotiations.

Evolutionary theory can be used to describe how the evolutionary motor drives multiple ideas and premises in cooperative or competitive relationships through repetitive cycles of variation, selection, and retention events (Poole *et al.*, 2010:554). During these cycles, new ideas and premises were combined with multiple variations of existing ideas to produce winning ideas that were selected for survival and inclusion in the budget. Numerous “change events” and actors introduced novelty and creativity into the budget process (Van Gils *et al.*, 2009:79). The evolutionary process was influenced by the aims of these actors, competition for scarce resources (i.e., funds and human capital) and environmental pressures from all the PESTLE dimensions. As a result, the “decision path for an evolutionary motor [was] weakly determined” (Poole *et al.*, 2010:554-555).

The important finding was that the annual budget process was primarily driven by a life cycle motor. Debates among officials and councillors, and among councillors could be framed as a dialectical process of change. A longitudinal study of annual budgets was likely to show a pattern of goal-seeking trends that could be explained in terms of a teleological governing mechanism. Evolutionary theory shed light on the variation-selection-retention processes at work during the budget process. Therefore, the budget process can be conceptualised as a multi-motor decision process (Poole *et al.*, 2010:555).

#### **5.3.4 A complexity perspective of the water desalination plant**

Documentation about the solar-driven reverse-osmosis water desalination plant appears in Appendix Q. Findings regarding the decision process associated with the establishment of the plant are discussed here in terms of two perspectives. First, a systems perspective is given and then a complexity perspective. Linstone’s (1984) systems framework reveals eight important integrated system elements that facilitate a systems perspective of a decision process. These eight elements are summarised in Table 5.4.

The decision to build the desalination plant was the direct outcome of all the interactions among the eight dynamic system elements and the actors involved. A Biomatrix systems perspective could also be used to illustrate the seven organising aspects of the project (Dostal *et al.*, 2005).

A complexity perspective of the decision process in terms of the features of complex systems revealed its complementary aspects. Complexity pervaded the context, the decision issue, the decision process, and the subsystems involved. The decision to build the desalination plant was the culmination of numerous other decision processes involving various human actors and organisations in France and SA. Individuals and institutions at provincial and local government level, specialists from many diverse disciplines, politicians, and members of the public interacted across all kinds of open boundaries during these decision processes. Actors from different political arenas and different contexts had to negotiate their decision processes towards a common attractor. This common attractor was the shared vision to deploy this first-

of-a-kind technology on the African continent to alleviate a water crisis during a drought. The possible delayed effects of the technology on the natural environment and socio-economic environment would become known in the course of time.

**Table 5-4 The decision about the Witsand desalination facility as perceived from Linstone's (1984) systems perspective**

	System element	Illustration
1	<b>Technology</b>	A solar-powered reverse-osmosis desalination plant with intelligent membrane technology. The plant is connected to the national electricity grid.
2	<b>Physical setting</b>	The Breede River Estuary near Witsand in the southern Cape.
3	<b>Socio-technical setting</b>	Key players include Mascara, the French government, Western Cape Government, the Overberg Water Board, Hessequa municipality, including the municipal council, the SGGF, HIH, the Witsand community, and the innovative technology.
4	<b>Techno-personal setting</b>	Design engineers, entrepreneurs, innovators, scientists and financiers enabled the project. Beneficiaries include residents, holidaymakers, officials and councillors.
5	<b>Organisational actors</b>	The Hessequa municipality, the Western Cape Treasury, the French Treasury, CapeNature, national and provincial Departments of Environmental Affairs.
6	<b>Individual actors</b>	The municipal manager, the chairpersons of the HIH and the SGGF, the CEO of TWS.
7	<b>Political action</b>	Lobbyists campaigned for the project in local and provincial government. Provincial government officials, municipal officials and DA councillors supported the project. Environmentalists, ANC councillors and some municipal officials opposed it.
8	<b>Decision</b>	After consideration of all relevant information and public consultation the municipal council decided to build and operate the desalination plant in Witsand.

The decision issue could be perceived from different perspectives. From a technical perspective the desalination plant as such could be framed as a complicated piece of technology. However, the plant embedded within the natural environment of the Breede River Estuary and the Witsand community constituted a complex system. There was dynamic interaction among the desalination plant, the natural environment, the communities, and the governance institutions involved. These interactions could lead to favourable and unfavourable feedback processes with leverage effects, time lags and unknown (and unknowable) effects. The self-organising and adaptive capacities of the various subsystems also rendered the integrated system resilient. The decision makers involved, especially those who facilitated the decision process, employed a similar kind of complexity thinking.

In terms of the framework in Figure 5.6, above, this decision could be framed as a highly complex decision, with a medium to high level of agreement among decision makers, and a variable value judgement among stakeholders.

#### **5.4 Summary, conclusions and recommendations**

The research findings regarding the municipal decision processes are summarised below, followed by the main conclusions and recommendations.

### 5.4.1 Chapter summary and conclusions

The aim of this chapter was to develop an understanding of how the Hessequa municipality took decisions within a complex context. The nature of this context was discussed in Chapter 4. In this chapter the nature of the formal decision processes and associated processes were examined.

Abductive thematic analysis of the empirical data revealed three main themes in the data, namely *definition of a decision*, *characteristics of decisions*, and *the formal decision-making process*. Key findings of the analysis are summarised below:

**Definition of a decision:** The analysis led to the following definition of a municipal decision:

A municipal decision is the result of a choice opportunity for a decision issue that was processed and shaped by a formal decision process that considered relevant municipal constraints, criteria, objectives and contingencies in pursuit of the aims of the municipality or the initiator. Implementation planning is part of the decision process. Actual implementation of the decision is only part of the decision process if the decision is implemented by the municipality or by another party on behalf of the municipality.

**Characteristics of decisions:** The *characteristics* of decisions were described in terms of the *nature of decisions*, the *purpose of decisions* and the *decision-making body*.

The *nature of decisions* was defined in terms of three mutually exclusive dimensions. Each dimension could be represented as a spectrum with extreme end points. The three dimensions (with their respective end points in brackets) were the following:

- Dimension 1: A value judgement (good decisions; bad decisions)
- Dimension 2: Level of complexity (black-and-white decisions; complex decisions)
- Dimension 3: Level of agreement (consensus decisions; controversial decisions)

These dimensions could be used as a framework to categorise decisions taken into eight separate categories of decisions. The focus of this study addressed the second dimension only.

Interviewees confirmed that the municipality did not make use of a framework to define decision issues as simple or clear, complicated, complex or chaotic. Interviewees were not able to distinguish between properly structured, complicated matters, and complex matters as defined in the literature and in this text.

Properly structured decision issues were delegated effectively and efficiently in terms of the delegation system. Complex decision issues required a collaborative and adaptive decision strategy. *“Black-and-white”* decisions were well structured and were delegated. The Cynefin framework prescribed decision strategies for well-structured *“black-and-white”* decisions and for complex decisions. Normally there was consensus about *“good”* decisions. In contrast, *“bad”* decisions were often controversial.

A fourth dimension that referred to the difficulty of decisions was also observed in the data. Decisions were described as difficult because they were complex, unpopular, emotionally demanding or political in nature. A difficult decision might be observed in any one of several domains in the three-dimensional framework.

An important finding was that officials did not experience any difficulty to take decisions. On the one hand, officials alleged that they did not take *“difficult decisions”* because they only implemented policy and did not formulate policy. Councillors, on the other hand, claimed that they found it difficult to take certain decisions related to policy formulation. Another key finding

that might be linked to the latter one was that most interviewees assigned or attached a mythical importance to a clean audit report by the AG. The perceived reputation value of a clean audit report and the fear of losing it kept officials and councillors from taking any decision that may put the clean audit report at risk. As a result, decision making was very conservative and difficult decisions were avoided.

Decisions could be characterised in terms of the *purpose of decisions*. The following possible purposes of a decision were identified, namely, to *set strategic direction, to formulate policy, to implement policy, and to manage risk*. It was the constitutional duty of the municipal council to set the strategic direction of the municipality and to formulate policy. It was the duty of the administration of the municipality to implement policies and to manage risk.

Decisions were also characterised in terms of the *decision-making body* accountable for taking the decision. This might be the council, the EMC or a delegated authority. Interviewees often referred to “*portfolio committee decisions*”, “*executive mayoral committee decisions*”, and “*council decisions*” without any reference to the characteristics of the decision issue in focus.

**The formal decision-making process:** According to the thematic analysis the formal decision-making process of the municipality could be described in terms of the *issues for decision, the process aspects of decision making, the structural aspects of decision making, and the contextual influences* that affected the decision process.

“*Issues for decision*” activated the decision-making system. These issues originated from “agile actors”, officials, councillors, residents and communities that pursued private aims, and from municipal aims. The IDP contained strategic objectives and issues that informed policymaking, policy implementation and risk management.

“*Process aspects of decision making*” uncovered several entangled and interdependent secondary processes that constituted the formal decision-making process. Important secondary processes included the following: *Framing and routing decision issues, item writing, deciding on issues, governance of decision processes, feedback processes, implementing decisions, drivers of decisions, and consultation*. The emergent process of municipal decision making was co-defined by each of these processes. Each secondary process had specific implications for the formal municipal decision-making process. In order to design a conceptual framework to enhance municipal decision making it was important to identify the different secondary processes and the way in which each of them influenced the formal decision-making process.

The way a decision issue was framed by a decision maker had important implications for both the decision process and for the strategy employed to implement the decision. A key finding was that interviewees, who were all important decision makers were not able to differentiate between complicated and complex decision issues. No evidence was found that the municipal decision-making system differentiated between complicated decision issues and complex issues. The implication was that decision errors could be committed, and an inappropriate strategy might be implemented to address the decision issue.

Decision issues were routed through the municipal decision-making processes according to the way a decision issue was currently framed. Properly structured issues could be routed through the delegation system to delegated authorities.

Item writers were able to influence or manipulate the decision process through the way they framed a decision issue within its ontological context and through the choice of language in which the item was prepared. All the directors and all but one of the councillors, who used isiXhosa, used Afrikaans as first language. There was strong evidence and confirmation that items written in English stimulated much less debate and discussion in council meetings than items written in Afrikaans. Items written in English tended to raise less critique from councillors

during council meetings and proceeded with much less debate and discussion than items written in Afrikaans. The perception of senior officials was that some of the councillors with a poor command of English were less prepared to discuss items written in English rather than in Afrikaans. It appeared possible to manipulate the decision process by writing items in complicated English instead of the home language of most decision makers.

Municipal decisions were officially taken by a delegated authority, a portfolio committee, the EMC, or the council. This research confirmed that the caucus of the EMC (consisting of members of the governing party or coalition only) was the forum that actually decided about important policy and budget issues. The EMC formally presented issues for decision from its caucus to the council for the formal decision to be taken. The multi-party council then only rubber stamped or formalised the EMC decisions. There was (almost) no way that the opposition party could stop or fundamentally change a decision of the EMC caucus without the support of the caucus of the EMC. Only with substantive and convincing arguments the opposition might be able to influence decisions of the ruling party. The caucus of the EMC demonstrated that it had the power to push controversial decision issues through in their favour and against the will of the administration and the opposition party.

Decision making was governed by means of external governance processes in terms of legislation and corporate governance principles as well as self-governance processes in terms of internal by-laws and policies. Self-governance at the municipality was very effective and law-abiding.

Feedback processes provided feedback to the decision-making system of the municipality. Feedback processes constituted an important component of action learning and learning in general. Feedback informed continuous improvement processes. Unfortunately, the current performance management system did not inform cycles of continuous improvement. The internally focused system was not aligned with its design intent which aimed to benefit residents.

Implementation planning was part of the formal decision process, but the act of implementation was not. Normally the administration was accountable for project implementation. Implementation management could be enhanced through feedback regarding implementation performance.

Decisions were driven or propelled through the decision system by means of prescribed time schedules and temporal cycles, by “agile actors” or institutional entrepreneurs who took ownership of their projects, and by legislation.

The entire decision process was characterised by formal and informal consultation processes. Both councillors and officials might initiate consultation processes during, and in support of the decision processes. Consultation ensured that legal processes were followed and that inputs from stakeholders and experts were considered during the decision processes.

*Structural aspects of decision making* emphasised all the structural aspects of municipal decision making. A focus on structure revealed hierarchies and networks of actors and decision-making entities endowed with different levels of power and influence. It also revealed structural aspects of processes. A focus on process revealed how numerous sub-processes influenced the formal decision process. The structural aspects and the process aspects were intertwined and interdependent.

The formal municipal decision process was fundamentally a linear process that made provision for consultation, collaboration, dialogue, discussion and (some) learning. Provision was made for “adaptive spaces” or “creative spaces” where diverse stakeholders participated in innovative and creative sessions. The linear process accommodated isolated thinking about decision issues as well as groupthink within the caucuses of the dominating parties. However,

interviewees affirmed that they valued the inputs of stakeholders in the decision processes. Actors participating in the decision processes represented the political and power structures to which they belonged. As a result, they also imparted the worldviews, policies, priorities, and aims of these structures onto the decision processes.

Bureaucratic structures brought order to the municipal decision processes and provided the infrastructure to implement decisions. The unproductive phenomenon of red-tape was an integral part of a traditional bureaucracy and hindered effectiveness and efficiency of decision processes.

Interviewees were much more aware of the prescribed, structured, linear and formal decision processes than the process steps of framing a problem properly within its context, formulating an appropriate approach to address the decision issue, and experimentation or “probing” when unstructured decision issues were addressed. The intense focus on the linear and structural aspects of decision making might have resulted in a neglect of the process aspects of decision making. A process theory of decision making emphasised the importance of accurate problem formulation, problem analysis, decision criteria development, solution development, evaluation and selection, and implementation planning.

“*Contextual influences*” referred to a spectrum of contextual variables that influenced the decision process. These variables included the inputs, aims and objectives of stakeholders, various financial, legal and other decision criteria that applied, VUCA factors that contributed complexity, and the value systems of actors involved.

An analysis of the annual budgeting process revealed the highly complex nature of this incremental decision process. The generative mechanism that drove the budget process forward was primarily a life cycle motor. However, the budget process could also be understood in terms of evolutionary theory, teleological theory, and dialectical theory. The budget linked higher-order strategic decisions captured in the IDP and lower order operational decisions as described by Etzioni’s mixed-scanning decision model. Morgan’s political model of decision making and Janis’s groupthink model of decision making also provided interesting insights regarding the budget process.

Other mini-cases illustrated how the municipality addressed complex decision issues with multiple stakeholders spanning all types of open boundaries. Empirical data suggested that the municipal decision makers intuitively used consultative processes to address complex decision issues. They did so without the formal use of complexity theory and without formally framing decision issues as complex, complicated or simple.

The main conclusion from this chapter was that the decision processes of the municipality were not designed to take care of complexity. Decision processes were not informed by a complexity understanding of contextualised decision issues or the complex contexts within which decisions were taken. Decision makers did not have the skills and knowledge or resources to identify and to address complex decision issues. Decision strategies were not matched with the nature of framed decision issues. According to the data no distinction was made between the way complicated decision issues and complex decision issues were treated by decision makers. The municipal institution was not geared to deal with the complexity that confronted the municipality and its residents.

## **5.4.2 Recommendations**

The findings suggested several recommendations to enhance municipal decision making. The main recommendation is that the municipality and the decision makers involved should be equipped with the knowledge, skills, understanding, resources and practices that are required to deal with complexity. Specific recommendations in this regard are provided below and in subsequent chapters.

First, a formal sense-making and framing step may enhance the effectiveness and efficiency of the formal decision process. A conceptual framework can be devised to frame decision issues as simple and clear, complicated, complex or chaotic so that appropriate decision strategies can be implemented.

Second, the current performance management system of the municipality does not contribute much to better decision making and better performance of the municipality. It is focused on inputs rather than outputs and outcomes. It benefits officials rather than residents. This system needs to be transformed in terms of a worldview that puts the benefits of residents first. Performance management should address effectiveness, efficiency and impact of decisions.

Third, a more balanced focus on both the process aspects and the structural aspects may significantly enhance municipal decision making. A process focus may result in a better focus on problem formulation, collaboration, creativity, innovation, and community participation.

Fourth, the municipality lacks a formal environmental scanning and foresight ability to inform decision making. An environmental scanning ability in combination with a foresight process will eliminate current blind spots in the IDP. It will inform the municipality about possible future risks and opportunities, and it will stretch the planning horizon far beyond a mere five years.

Fifth, the IDP in its current format is underutilised as a resource that can provide decision makers with a strategic overview of the contextual environment within which decisions need to be taken. The current IDP lacks a comprehensive overview of all the PESTLE domains of the contextual environment and the associated risks, uncertainties, and opportunities for the municipality and its residents in each domain.

Sixth, the decision-making capacity of the municipality may be enhanced if the capacity of the existing bureaucracy to process and implement decisions can be complemented with more sophisticated adaptive spaces that span the boundaries of the various directorates. Adaptive spaces stimulate creativity and innovation and break down thinking in silos.

Seventh, the current prescribed format of council agenda items may be adjusted to include additional elements such as assumptions, uncertainties, the nature and features of decision issues, and risks and opportunities regarding each decision issue over its lifetime. The robustness of proposals for different formal scenarios should be tested.

Eighth, the capacity of the municipal council to take good decisions is largely determined by the adequacy and competency of the elected councillors in taking good decisions. Residents with voting rights have the power to elect councillors that have the skills, competencies, consciousness, insight, understanding, wisdom, and sophistication to take good decisions instead of popular individuals who may be less competent. Feedback loops ensure that voters receive service delivery of a quality that correlates with the decision-making capacity of the councillors they have elected.

The thematic analysis of the data on the formal municipal decision-making processes has revealed several opportunities to improve decision making. In the next two chapters these opportunities are explored further. In Chapter 6, the adaptive capacity of the municipality is evaluated in terms of a novel adaptive capacity framework. Building on the thematic data analysis and the adaptive capacity evaluation, a conceptual framework for decision making is proposed in Chapter 7. A well-developed adaptive capacity will contribute to the municipality's ability to implement wise decisions.



## CHAPTER 6 ADAPTIVE CAPACITY OF THE MUNICIPALITY

### 6.1 Introduction

This chapter is based on three important findings of this study so far. A key finding from Chapter 3 was that the Newtonian mode of thinking was inadequate to address the complexity of the current era. A key finding from Chapter 4 was that the municipality functioned within a complex contextual environment. A key finding from Chapter 5 was that a linear model of decision making dominated municipal decision making. Another key finding is that the municipality and its decision makers are not equipped to deal with the phenomenon of complexity. Decision makers do not have the knowledge, skills and resources to address complex and adaptive decision issues in a complex context. This chapter evaluates the adaptive capacity of the municipality as an indicator of its fitness on its fitness landscapes. The corresponding research sub-question was stated as follows:

*What are the strengths and weaknesses of the adaptive capacity of the municipality?*

The research objective was to assess the adaptive capacity of the municipality. This assessment was important for the following reason: In order to cope with the dynamics of a VUCA contextual environment, decision makers at the municipality will have to replace the dominating reductionist paradigm with the (unfamiliar to the municipality) complexity paradigm. The ability to shift one's paradigm is one of the strongest leverage effects that a decision maker may have on a system, but it is also one of the most difficult and challenging processes to implement (Meadows, 1999). A complexity perspective provides for more mobility and agility in the Ashby space in order to address complex decision issues (Ashby, 1961; Boisot & McKelvey, 2011). Adaptive capacity co-defines the ability of an organisation to implement its decisions.

Meadows (1999) argues convincingly that the power of leverage increases as the focus of efforts to adapt a system moves from superficial changes at the surface level to the systems level and further to the cognitive level of paradigms and worldviews. This insight is shared by Inayatullah (2004) who argues that, in terms of the CLA approach, the deeper levels of reality in the cognitive domain are fundamental to the systems in physical reality that produce outcomes at a surface level. Efforts to adapt a system through a focus at the 'surface level', therefore, are less effective than efforts aimed at the systems level. Similarly, adaptation efforts aimed at the fundamental levels of myth, metaphor, paradigm, and worldview are more powerful than a focus at the systems level. The power of leverage increases the deeper the level at which an adaptative strategy is applied.

A key feature of a CAS is its ability to adapt to perturbations from its environment. If it can be proven that the municipality is indeed a CAS, the conclusion would be that it should possess some degree of adaptive capacity at a systems level. Alternatively, the adaptive capacity of the municipality can be assessed in terms of an adaptive capacity framework. Two strategies are followed to address the research question. First, it will be established whether the Hessequa municipality, consisting of the administration and the political structures, possesses the characteristics of a CAS and whether it demonstrates the behaviours of a CAS. Second, the adaptive capacity of the municipality will be assessed in terms of an adaptive capacity framework derived from the literature. In the next section, two models of a CAS will be applied to establish whether the municipality can be defined as a CAS.

### 6.2 A complex adaptive system perspective of the Hessequa municipality

Two theoretical models of a CAS will be applied to data to establish whether the municipality can be defined as a CAS or not. If it can be demonstrated that the municipality does possess

all the important characteristics (i.e., both the features and the behaviours) of a CAS as suggested by the literature then it will be concluded that the municipality is adaptive. Empirical and documentary data will be examined to establish whether the municipality possesses the features and demonstrates the behaviours associated with a CAS. CAS theory was reviewed in Section 3.2.5. The very basic modelling framework used by Rhodes *et al.* (2011:8-15) and the six organising principles of a CAS suggested by Preiser *et al.* (2018) will be applied to the data to determine whether the municipality is a CAS or not.

### 6.2.1 The municipality in terms of a basic complex adaptive system framework

The basic modelling framework suggested by Rhodes *et al.* (2011:8-15) was summarised in Section 3.2.5. That framework is used here to determine whether the municipality possesses the features of a CAS and behaves like a CAS. Each CAS element of the framework is evaluated below.

**The system:** The municipal system is defined here as the combination of the administration and the political structures of the municipality as defined in legislation. The municipal system is embedded within a multidimensional contextual environment which was described in Section 4.2. This system and its boundaries have been co-defined by the analytical questions and the focus of attention of the observers. What constitutes a system is a matter of judgment by the actors and agents comprising the system as well as by observers (Gerrits *et al.*, 2009:137).

**Factors and rules in the external environment:** In Section 4.2, the external environment was analysed by means of multiple complementary frameworks and perspectives. All these frameworks were used to identify external factors that might interact with the municipal system. Factors with a prominent influence on the municipal system were observed in all the PESTLE dimensions. Of specific importance were the laws that applied to municipalities, local socio-economic factors, party politics, and variables in the natural environment. Various factors at the systems level and the cognitive level of myths and worldviews that interacted with the municipality were identified. These factors influenced agent behaviours and the behaviours of the system.

**Factors and rules in the internal environment:** In addition to external factors, several internal factors influenced the dynamics and processes of the municipal system. In Section 4.4 the internal environment was described as a “*political arena*” where actors with conflicting aims and interests used their power to compete for scarce resources. Coalition politics and political party politics had a huge influence on the operations of the entire system. The rules of a bureaucratic administration and a constitutional democracy applied in the internal environment. Laws, by-laws, the delegation system, standard operating procedures, budgets, the SDBIP and KPIs, and governance systems co-defined agent and system behaviours.

**Agents:** Agents or actors in the internal environment of the system included the councillors and officials who played prominent roles. External actors included members of the communities, agile actors, and other stakeholders as discussed in Section 4.4. and Section 5.2. Agents within the municipality interacted with one another and with agents outside of the municipality in pursuit of individual or joint objectives.

**Purposeful processes:** Several purposeful inward-directed, outward-directed, and self-directed processes of the municipality were discussed in Section 4.3 (Dostal *et al.*, 2005:282-287). These purposeful processes linked agent behaviour with the outputs and impactful outcomes of the municipal system.

**Impactful outcomes:** The purposeful processes and actions of the municipal actors resulted in decisions that led to direct outputs. Outcomes, however, were the impacts and effects that the outputs had on the relevant environment over time. For example, budget decisions regarding rates and taxes affected the taxpayers directly. Strategic decisions regarding spatial

development and infrastructure development had major long-term implications and impacts on communities, the local economy and the natural environment.

In addition to the above systems aspects, the municipality has to demonstrate the behaviours associated with a CAS to qualify as a CAS (Rhodes *et al.*, 2011). Unique CAS behaviours include processes such as self-organisation, adaptation, emergence, path-dependency, and bifurcation. These behaviours and the six characteristics discussed above together constitute necessary and sufficient indicators for the existence of a CAS. In Section 4.4.6 the main theme *emergence of complexity* and its sub-theme *complex behaviours* of the municipality were discussed. All the complex behaviours of a typical CAS were observed according to the thematic analysis.

In terms of the above application of the CAS framework proposed by Rhodes *et al.* (2011) it can be concluded that the municipality did have the features of a CAS and that it did display complex behaviours associated with a CAS. In terms of this analysis, it is concluded that the municipality was indeed a CAS.

## 6.2.2 The municipality in terms of complex adaptive system organising principles

The six organising principles of a CAS proposed by Preiser *et al.* (2018) will be used here as an additional and complementary framework to determine whether the municipality met the requirements of a CAS. Each principle will be considered individually. The municipality is still defined as the administration and its political structures.

**CASs are constituted relationally:** A CAS is defined more by the rich interactions and relationships among its constituent parts and its relationships with its environment than by the individual components themselves. Preiser *et al.* (2018:50) define relations as ‘processes of engagement, as well as the outcomes of such processes’. The municipal structures and processes were defined and governed by legislation as explained in Section 4.2.1. At the core of these structures and processes were the individual officials within the bureaucratic hierarchical structures of the administration and the individual councillors within the hierarchy of political structures. They all interacted with one another and with actors outside the municipality. These actors were members of networks that spanned the boundaries of the municipality, the province, and the country.

The main theme *a political arena*, in Section 4.4.3, was used to describe the nature of the interaction among the officials, councillors, residents and other stakeholders as they pursue their aims. Many of the relations among stakeholders were co-defined by legislation, and by the positional power and the personal power of individuals involved. Some other relations might have had a personal and social character. The overarching theme *features of the municipal context*, used in Chapter 4, described the municipal context in terms of the connectivity among actors and the systemic, hierarchical and orderly nature of the context. Relations among actors were co-defined by power relations, interdependencies, organisational hierarchies, political orientation, their role and function, cultural aspects, personality, aims, objectives and their motives. Analysed data illustrated how actors with diverse aims within different hierarchical structures and networks participated in municipal processes.

**CAS have adaptive capacities:** The adaptive capacity of a CAS co-defines its ability to adjust to changes in its environment, to adjust to potential damage, to exploit opportunities, and to respond to consequences (Jones *et al.*, 2017:5). Adaptive capacity also refers to the robustness of a system, its ability to learn, to innovate and to experiment (Cilliers, 1998; Hammerstein *et al.*, 2006; Northrop, 2011). The adaptive capacity of the municipality was demonstrated in the many cases of complex behaviours observed in the analysed data. The main theme *emergence of complexity* (in Section 4.4.5.) and the sub-theme *complex behaviours* (in Section 4.4.5.2) contained references in the coded data to all kinds of complex and adaptive behaviours, such as self-organisation and learning. Establishment of the solar-

powered water desalination plant in Witsand demonstrated the adaptive capacity of the municipality during a severe drought. The adaptive capacity of the municipality was also reflected in the annual budget in numerous ways as budget priorities as well as contextual variables changed. Focused development of the Still Bay area demonstrated an adaptive capacity which aimed to benefit from economic growth in the area.

**CAS behaviours are the result of dynamic processes:** Non-linear dynamic processes introduce leverage, uncertainty, and unpredictability in CAS behaviours. Slow and fast non-linear variables characterise positive and negative feedback effects that allow a spectrum of possible stable states to exist (Preiser *et al.*, 2018:50). The interplay of unpredictable contextual variables in each of the PESTLE dimensions of the external environment (as discussed in Chapter 4), the nature of dissipative systems such as the municipality itself (Nicolis & Prigogine, 1977:3-4) and the action of opportunistic agile actors or first movers (Room, 2011:144) within the political arena of the municipality kept most municipal processes in states that were far from equilibrium. The Covid-19 pandemic, municipal elections, by-elections, coalition politics, climate change and the forces of nature acted as change events and even bifurcation points that introduced unpredictable system dynamics into the municipal environment. The delayed feedback effects of these contextual variables had numerous unfavourable impacts upon the municipality.

The municipality was operating within an attractor basin characterised by good and clean governance, teamwork among political parties and the administration, shared values and principles, and strong competition between the ruling party and the opposition party. Demographic changes and changes in voting patterns and legislation may however introduce transitions to other attractors in future.

The better performance of the DA party during the 2021 municipal elections could be regarded as the effect of feedback loops that benefited the party. Good administration, eight consecutive clean audit reports from the AG, and strategic investments in infrastructure since 2011 contributed to the significant growth in the support base of the ruling party and a decline in the support base of the opposition.

**CASs are radically open systems:** CASs interact on a continuous basis with their contextual environments. The contextual analysis in Chapter 4 illustrated how the municipality interacted on a continuous basis with its environments in multiple domains. A CAS exchanges matter, energy, information and meaning with its environment across porous, vague and fuzzy boundaries. The following examples illustrated the openness of the municipal boundaries. Every five years newly elected councillors entered the municipality and others left. Newly appointed officials entered the administration and others left daily. Every year the municipality formulated and implemented new policies, tariff structures and taxes that impacted directly on its environment. ICT and the 4IR contributed to the radical openness of municipal boundaries. Similarly, new legislation and institutional arrangements from other spheres of government had a direct impact on the municipality. Droughts, climate-change effects, economic cycles, epidemics (e.g., Covid-19) and global risks in the external environment generated a continuous stream of unpredictable stimuli that impacted on the municipality. Political parties in power at national and provincial level also influenced internal municipal processes directly. Ontologically the municipality was embedded and entangled within its multidimensional context in such a way that it was difficult to distinguish between internal and external environment.

**CASs are determined contextually:** CASs are embedded in their contextual environment, and they are entangled with environmental structures and processes. The internal structure of the municipality emerged from patterns of dynamic interaction between internal actors (e.g., officials and councillors) on the one hand, and between internal actors and external stakeholders and actors, on the other hand. Internal systems were normally employed to deliver traditional municipal services to communities. Under abnormal environmental

conditions such as extreme weather events, veld fires and the Covid-19 pandemic these same internal systems were harnessed to provide rescue services, to attend to emergencies and to deliver food parcels. These service delivery systems were therefore multi-functional (Dostal *et al.*, 2005:80-81). In a similar way the functions and focus of the political structures of the municipality changed during elections. During the five-year terms between local elections the political structures focused on their governance functions. Just before elections these same structures started to focus on election campaigns. Whenever there was a change in political leadership of the council due to changes in voting patterns there were implications for the administration. Very often changes in the external PESTLE domains had direct implications for the municipality and its subsystems, as illustrated in Chapter 4. The sensitivity of these subsystems to environmental changes is associated with their multiple context-dependent identities (Preiser *et al.*, 2018).

**Novel qualities of CASs emerge through complex causality:** The municipal system consists of multiple interacting subsystems. Some of these subsystems span the municipal boundaries. The non-linear interaction among these subsystems may cause unanticipated emergent events at a system level (Santos *et al.*, 2017). Large webs of interacting actors within the political arena and in the contextual environment as well as contingent variables provide multiple pathways of causality that co-produce emergent properties at a systems level (Lewin, 1992; Cilliers, 1998; Rihani, 2002; Dostal *et al.*, 2005; Morçöl, 2012). Complex causality caused system-wide regime changes in the municipality. Such regime changes had been observed during the formation of coalitions among political parties and changes in governing party during the past decades. Regime changes had significant impacts on municipal policies, the IDP, budget priorities, the administration of the municipality, the delegation system as well as performance of the municipality. The establishment of the Witsand water desalination plant served as an example of a physical structure that emerged as the result of complex causal processes (see Section 5.3.). Similarly, every new policy that was considered, researched, debated, formulated, adopted, implemented and evaluated was a novel product of complex causality within numerous interconnected webs. Section 5.3 contains various examples of novel products resulting from complex causality.

The conclusion from the above analyses was that the municipality did possess the features of a CAS and that it did display behaviours associated with a CAS. Therefore, the Hessequa municipality was indeed a CAS.

The next section investigates the adaptive capacity of the municipality in terms of an adaptive capacity framework.

### **6.3 Adaptive capacity of the municipality in terms of an adaptive capacity framework**

This section builds on the previous section where it was demonstrated that the Hessequa municipality is indeed a CAS. In terms of the principle of general complexity, the adaptive capacity framework developed in Chapter 3 also applies to the Hessequa municipality (Morin, 2005; 2007). It is important to note that CASs contain adaptive components and capacities. The adaptive components allow complex systems to change and evolve over time in response to feedbacks and changes in the system's context (Preiser *et al.*, 2018:47). The focus in this section is on the adaptive capacity of the municipality.

The adaptive capacity of a system is co-defined by its ability to implement its decisions (Gupta *et al.*, 2010; Jones *et al.*, 2017). Therefore, the decision process is defined here such that the implementation step forms part of the decision process (Simon, 1949:2; Drucker, 1967). Most of the decisions of the municipality were implemented within local communities, and for the benefit of the communities. In addition, many municipal decisions were implemented with the cooperation and involvement of the local communities and local resources. Other decisions were implemented with the help of external actors, networks, and resources. For these reasons

the municipality, as the unit of analysis, was defined in this chapter, as the administration, the political structures and the communities of the municipality as stipulated in the Structures Act. The adaptive capacity of the municipality, which was entangled with its communities and contextual environment, is assessed below.

The adaptive capacity of the municipality is evaluated here in terms of the adaptive capacity framework derived from the literature and as adjusted for this study (see sections 3.2.5.2 and 3.2.5.3.). This framework consists of twelve dimensions that are arranged in terms of a CLA perspective. This multilevel feature of the framework is unique and novel (see Table 3.3). Adaptive capacity in each of these dimensions is enabled through several contributing criteria or specific interrelated abilities that co-produce adaptive capacity. These criteria are general in nature. To evaluate the adaptive capacity of the municipality each dimension is considered. However, not all the general criteria listed in Table 3.3 are necessarily applied below. Only those criteria that have specific relevance to the municipal context are applied. The adjusted adaptive capacity framework is shown in Table 6.1, below. This framework is applied to interview data, secondary sources, observations, relevant literature and documentary sources within the municipality. Most of the documentary data was obtained from the municipal website (Hessequa municipality, 2022).

The adaptive capacity of the municipality is evaluated at three interrelated causal levels. These are the semantic level, the systems level, and the cognitive level. Adaptive capacity in terms of dimensions that span all three causal levels is also assessed. The depth of the assessment of each dimension is limited to a general evaluation of the corresponding criteria in terms of available data and within the limitations of space for this chapter.

### **6.3.1 Adaptive capacity at the semantic level**

Adaptive capacity at the semantic level will be evaluated in terms of the following dimensions: *Resources and assets*, and *ability to implement*.

#### **6.3.1.1 Resources and assets**

The availability of resources and assets will be assessed in terms of data published by the Western Cape Government (2020c), the current IDP of the municipality, and other documents available on the municipal website. The relatively stable population of around 55 000 people had a literacy rate of 78,5 per cent, a per capita income of just over R40 000,00 per annum, a Gini coefficient below 0,60 and a dependency ratio of 0,60. More than one-third of the workforce was informally employed and about two-thirds were employed in the formal sector. Only one out of four people employed in the formal sector was skilled. The balance was either semi-skilled or low-skilled. Growth in the secondary and tertiary sectors of the economy was driving the demand for skilled workers. The coping capacity of unskilled and semi-skilled workers in the local economy was extended through social grants provided by national government and free basic services supplied by the municipality.

Although levels of malnutrition and pregnancy terminations were low, high levels of teenage pregnancies, HIV/AIDS infections, tuberculosis and drug-related crimes were causes of concern. More than 90 per cent of the population had access to basic services (e.g., piped water, electricity supplies, sanitation, refuse removal, and housing) but only 30 per cent of the residents had access to Wi-Fi services. Rural residents, however, had much lower levels of access to basic services and the internet. More than 30 per cent of all households were financially vulnerable and received free basic services from the municipality. Residents had access to three primary health care facilities, a district hospital and nineteen public schools, including twelve that were no-fee schools. Only seven schools had libraries. Residents scored 0,81 on the HDI. This index was increasing very slowly. The overall impression was that the population was relatively poor and very vulnerable to environmental risks and disasters.

**Table 6-1 Dimensions and criteria of an adaptive capacity framework applied to Hessequa municipality**

<b>Dimensions</b>	<b>Criteria to evaluate adaptive capacity</b>
<b>Dimensions and criteria of adaptive capacity at the semantic level</b>	
<b>1. Resources and assets</b>	Availability and distribution of knowledge, education, skills, expertise, human capital and labour. Availability of and access to economic, natural, technological and financial resources and infrastructure. Distribution of income and physical resources and assets. Strength of collective action and social cohesion. Availability of robust, interchangeable infrastructure and technology with redundant capacity and back-up systems. Access to housing, health services, education facilities, clean water and sanitation, electricity, and transport infrastructure. Ability of stakeholders to access, control, and utilise these resources. Availability of infrastructure that connects actors, e.g., ICT, roads, railways, harbours, and airports.
<b>2. Ability to implement</b>	Availability of resources and human talent to implement decisions. Ability to collaborate with key, diverse actors at different levels from different sectors to implement decisions. Degree of empowerment of individuals to improvise, to self-organise, to innovate and to implement. The level of success of communities in dealing with disruptions, such as economic crises, droughts, floods, storms and diseases.
<b>Dimensions and criteria of adaptive capacity at the systems level</b>	
<b>3. Institutions and governance</b>	Stable and reliable political and legal resources. Level of public support for the institution. Levels of legitimacy and transparency of policymaking processes. Whether or not institutional rules and policies are fair and accepted. Responsiveness of the institution to society. Level of institutional support to communities. The presence of norms, rules, policies and laws that promote adaptive capacity. Extent to which inequalities in society and equitable access to resources are addressed. The level of care for the poor and vulnerable groups.
<b>4. Experimentation, innovation, and learning</b>	Whether adaptive spaces are created and utilised. Extent to which actors are encouraged to learn and experiment. Evidence of institutional learning from past experiences. Willingness to question current assumptions, insights, paradigms, policies, and procedures; and to update them. Existence of learning networks with diverse collaborators from diverse sectors and levels. Evidence of process, product or service innovations.
<b>5. Future-conscious decision making</b>	Extent to which decision making is informed by environmental scanning (i.e., situational awareness), an anticipatory capacity and foresight. Evidence that key stakeholders collaborate in decision making. Evidence of a range of proactive policy options, strategies, and measures to exploit opportunities and address possible risks. Examples of initiatives to foster the autonomous capability of individuals to improvise.
<b>6. Information and knowledge management</b>	Level of understanding of reality in terms of a complex systems perspective. Level of understanding the consequences of decisions. Level of institutional knowledge about drivers of change, complex causality, and adaptation options. Ability of the institution and stakeholders to access, receive, generate, assess, share, and disseminate information and knowledge regarding adaptation options available to exposed individuals. Examples of residents' ability to analyse information and to devise and implement adaptation options for critical, basic needs. Examples of cases where the institution shared information with stakeholders to enable them to act proactively in anticipation of perturbations.
<b>Dimensions and criteria of adaptive capacity at the cognitive level</b>	
<b>7. Paradigms and worldviews</b>	Frequency of continuous reflection and evaluation of current paradigms, worldviews and mental models. Willingness to participate in multiple discourses with diverse stakeholders. Willingness to consider diverse perspectives, problem frames and solutions.

<b>8. Myths and metaphors</b>	Openness to acknowledge and review the relevance and applicability of current myths and metaphors.
<b>9. Organisational culture</b>	Level of trust and respect observed. Extent to which experimentation, learning, teamwork, collaboration, information sharing, and transparency are promoted.
<b>Dimensions and criteria of adaptive capacity that cut across all CLA levels</b>	
<b>10. Power and agency</b>	Degree to which power and influence is used to enhance the adaptive capacity of the institution at all three causal levels. Levels of self-agency, i.e., people's perception of their self-efficacy and power to control the future through personal motivation, initiative, and drive to carry out adaptive actions. Extent to which actors initiate and take action in response to stressors.
<b>11. Leadership capacity</b>	Availability of good and effective management and leadership capacity in the CAS. Effective communication. High-level strategies that define CAS responses to disturbances. Leaders initiate partnerships, engage stakeholders, and manage resources effectively. Extent of visionary, adaptive, collaborative, and complexity leadership practices. Willingness to consider different perspectives and opinions, and to discuss doubts.
<b>12. Variety and options</b>	Availability of a range of adaptation options and initiatives. Availability of a range of resources and substitutes. Access to a range of food supplies, water and electricity supplies, transport facilities and land. Diversity of means to earn an income and to source funding under different scenarios. Multiple perspectives, worldviews, truths, insights, and ideas inform decision making.

Socio-economic risks included the financial sustainability of the municipality, the ability of low-income households to pay for basic services, deteriorating educational outcomes and the availability of fresh water. The Hessequa geographic area was a relatively arid area with limited freshwater supplies and storage capacity. As a result, the agricultural sector was highly vulnerable to climate-change effects. Risks associated with climate change were addressed in the Hessequa climate-change adaptation strategy and the Hessequa climate-change adaptation plan (Hessequa municipality, 2022). The following statement in the adaptation plan confirmed that a shortage of funds hindered the development of adaptive capacity: *“With regard to disaster management in Hessequa, there is a good understanding of where the risks are, however there is a lack of resources and capacity to be able to deal with these disasters and risks.”* Fortunately, the municipality continued to implement climate adaptation strategies and plans within its limited means.

Although the mineral resource base of the Hessequa geographic area was very limited the area was blessed with an abundance of natural beauty. The area was bordered by a coastline with four beautiful coastal towns, the Langeberg Mountain range in the north, the Gouritz Cluster Biosphere Reserve (GCBR) in the east and the Breede River Estuary in the west. UNESCO designated the GCBR as ‘a place of major biodiversity significance for the planet’ (Gouritz, 2022).

Availability of external sources of funding and loans was controlled by the strict limits set by the long-term financial plan of the municipality (Hessequa municipality, 2022e). Municipal infrastructure grants (MIGs) and other categories of provincial and national funding had been insufficient to address most of the current needs at the municipality. Municipal ability to further develop and expand technological and economical resources and infrastructure was primarily limited by the availability of funding.

The municipality and its residents had access to a railway line between the Western Cape and the Eastern Cape, and the N2 National Road that connected the area with the George and Cape Town airports, the harbours of Cape Town, Coega and Port Elisabeth and with the rest



of SA. Logistical infrastructure was in a relatively good condition and redundant, interchangeable capacity existed.

Efforts by the municipality and provincial government to build adaptive capacity included investments in economic infrastructure (e.g., roads), social infrastructure (e.g., health and educational facilities), housing, and the provision of infrastructure for the supply of basic services to communities. Most of the municipal bulk infrastructure was relatively old and most of it was utilised to its full capacity. Therefore, limited adaptive capacity existed in this domain.

The following observations by the researcher over the last few decades indicated that the communities of the municipality might be suffering from a lack of social cohesion and collective action: Only one of the nine towns and settlements in the Hessequa area (i.e., Still Bay) had an active business chamber from 2011 to 2021. Residents' attendance at meetings organised by the municipality was generally poor. Players in the various economic sectors of the area, e.g., manufacturing and construction sectors, retail, hospitality sector and other domains of the tertiary sector were in most cases poorly coordinated and they operated as independent actors. Competition within each sector was normally fierce. The exception was the agricultural sector where most sub-sectors were managed and coordinated effectively.

In summary, the adaptive capacity of the municipality in terms of the availability of a spectrum of resources was rather limited. Redundant capacity existed in logistical infrastructure. Socio-economic inequality in terms of levels of income, education, and skills levels corresponded with inequality in adaptive capacity. Adaptive capacity could be enhanced through better utilisation of the 'grey power' of retired knowledgeable people, the natural beauty of the region and a better organised business sector.

### **6.3.1.2 Ability to implement**

Decisions taken by the Hessequa municipality were implemented either by the employees and resources of the municipality or they were implemented by contractors on behalf of the municipality. The municipality had demonstrated on many occasions that it had the capacity to implement projects by means of its own resources. It had also demonstrated that it had the capacity to collaborate with contractors to implement its projects. According to the recent annual reports the municipality spent around R100 million on capital projects every year. Examples of large projects that were implemented from 2011 to 2021 were the following: Upgrading and repair of storm water infrastructure of more than R30 million, participation in upgrading of the tar road linking Still Bay with the N2 National Road at a cost of R192 million, the upgrading of the electricity supply line to Still Bay costing R32 million, upgrading of two sport stadiums at Melkhoutfontein and Slangrivier costing R13 million, and a housing project at Melkhoutfontein costing R120 million. Numerous projects related to community development, infrastructure maintenance, investments in new infrastructure, spatial development and corporate services were implemented successfully every year. Ability to implement was primarily limited by budget constraints and not by the availability of other resources or systems to implement approved projects. (Details of all major projects are available on the municipal website.)

Project implementation was not without its challenges. Legislation as well as very strict supply chain policies and regulations tended to delay project implementation. Strict adherence to these strict rules often resulted in an inability to spend approved capital funds according to plan and according to time schedules. A director blamed the red-tape associated with supply chain processes as the most frustrating part of his job. Other interviewees explained how legislation and supply chain requirements introduced delays in decision processes, project implementation and capital flows. Capital spending during the 2020-2021 financial year, for example, amounted to only 83 per cent of the budget according to the Municipal Audit Committee (Hessequa municipality, 2022).

In most cases, the municipality collaborated effectively with other spheres of government, government departments, and contractors to implement projects and initiatives. The decision process to build the solar-powered desalination plant in Witsand illustrated how diverse parties collaborated with the municipality throughout the project (see Section 5.3 for details).

During the Covid-19 pandemic, the municipality played a key role to enforce lockdown regulations in collaboration with the SA Police Service. The municipality also provided extensive humanitarian aid to less privileged people (Hessequa municipality, 2021b:35).

The municipality and its communities had successfully dealt with disruptions and disasters, such as droughts, floods, fires, storms and diseases, in the past. Adaptive capacity was enhanced through an early warning system that was connected to residents' cell phones. This system was used regularly to inform residents about possible floods, veld fires and storms. A decentralised fire brigade had been in operation since 2016. This local service reduced response times during emergencies.

In summary, the municipality demonstrated that it had the capacity to implement its decisions successfully in collaboration with its communities and other stakeholders. Strict adherence to supply chain requirements resulted in inefficiencies, delays in project implementation, and under-expenditure of capital. Municipal adaptive capacity in terms of this dimension was relatively good.

### **6.3.2 Adaptive capacity at the systems level**

Adaptive capacity at the systems level will be evaluated in terms of the following dimensions: Institutions and governance, experimentation, innovation and learning, future-conscious decision making, and information and KM.

#### **6.3.2.1 Institutions and governance**

The municipal administrative bureaucracy is embedded within the SA constitutional democracy (Schwella, 2015). The White Paper puts forward an approach to municipal transformation, stating that “national government is committed to developing a stable and enabling framework in which change can occur, and providing a range of support mechanisms to assist municipalities during the transition. However, transformation ultimately rests in the hands of each municipality” (RSA, 1998a:11).

The adaptive capacity of the municipal institution reflected the adaptive capacity of the bureaucratic governance system entangled with the political structures. The governance system employed by the administration was best described by the bureaucratic governance model as discussed in Section 3.7.2. However, some aspects of the public value model, the learning governance model, the NGM, the collaborative governance model and the NPM were also visible within the dominating bureaucratic governance system (see Section 3.7 for an overview of these models).

The design intent that informs the bureaucratic governance model is based on the machine metaphor that remains appropriate for a stable and predictable environment in which tasks are well defined (Mintzberg, 1996:80; Morgan, 2006:27; Kim, 2006:21; Serpa *et al.*, 2019). The model is “geared to order and efficiency” and it “appear[s] to be resistant to creativity and innovation” (Thom, 1981:199). Bureaucratic governance is inappropriate in a fluid and dynamic environment. The model lacks flexibility and responsiveness to individual initiative (Mintzberg, 1996:80). It provides limited scope for innovation, and it was regarded as “an impediment to successful service delivery” (Coats, 2006:4). Central authority and the culture of command and control of the human ‘machine parts’ that characterise the bureaucratic model contribute to the inappropriateness of the bureaucratic model in a VUCA environment.

Political governance at the municipality was based on a multi-party democratic governance system. During the two terms from 2011 to 2021 the municipality was governed by both a DA-dominated coalition and by the DA as the majority party. Previously the ANC governed, both as a majority party and as a member of a coalition government. During turbulent regime changes the administration demonstrated that it could adapt and cope with the implications thereof. During these times strong administration served as a substitute for leadership (DuBrin, 2016:9).

Hessequa residents had always experienced good and stable governance under both the ANC and the DA as governing parties. Instability caused by coalitions had been buffered effectively by a very stable, capable, and reliable administration. Measured in terms of the turnout ratio of registered voters during national elections the municipality had enjoyed a relatively good level of support of around 70 per cent until 2016. This figure dropped to 63 per cent in 2021 (IEC, 2022). Another rough indicator of public support for the municipality might be the percentage payment for services rendered to residents. This figure, namely, the collection rate, was above 95 per cent (Hessequa municipality, 2021a:51). Basically, all the annual reports and financial statements reflected effective financial governance in terms of sound accounting practices and norms.

Adaptive capacity was promoted by means of policies, strategies, and plans (Hessequa municipality, 2022). The Hessequa Climate Change Strategy and the Hessequa Climate Change Adaptation Plan addressed the adaptive capacity of the municipality regarding a spectrum of climate-change effects. A disaster management framework and plan that formed part of the current IDP, as well as a comprehensive environmental policy, a solid waste disposal policy, a communication policy and various other policies also addressed aspects of adaptive capacity (Hessequa municipality, 2022). The aim of the communication policy was to promote democracy and “to make the community part and parcel of decisions that impact[ed] on their lives”. The intent of all these policies was aligned with the strategic objectives stated in the IDP and was reflected in the annual budgets, SDBIP, KPIs of officials, and the annual reports.

Many interviewees explained how public consultation and direct communication processes and workshops informed policy formulation processes, the development of the IDP, the annual budget and important decision processes. Details of these public participation processes were captured in the annual report for 2020-2021 (Hessequa municipality, 2022). Public consultation and effective communication processes contributed to the acceptability, legitimacy and transparency of policymaking processes as well as the adaptive capacity of the municipality and its communities.

The municipality addressed inequalities in society in terms of its strategic objectives stated in the IDP. Specific initiatives to eliminate inequalities included the provision of basic services to all residents, the creation of a safe and healthy living environment, development of integrated and sustainable settlements, development of the formal and informal local economies, as well as numerous community development projects. These initiatives were complemented by an employment equity plan and a grant-in-aid policy (Hessequa municipality, 2022). Poor and vulnerable groups were supported by means of free housing, free basic services, and rebates or subsidies on services in terms of the indigent policy (Hessequa municipality, 2022).

Institutional support to communities transcended and included basic service delivery. It also included fire protection services, community development initiatives, indigent support, early warning of abnormal weather conditions, and food aid during times of distress. Details were included in the annual reports.

The legitimacy of the municipal institution, transparent and effective governance processes, and a spectrum of policies and rules contributed to both the adaptive capacity of the

municipality and its overall performance. In 2021 the municipality received its eighth clean audit report from the AG. In March 2022, Hessequa municipality was ranked among the four best performing non-metro municipalities in SA (News24, 2022).

A general observation was that the adaptive capacity of the municipality could be enhanced significantly if the relatively low level of cooperation and collaboration between the municipal structures and the private sector, professional people, retired and knowledgeable people and business forums could be developed further. The establishment in 2022 of an umbrella business forum representing business forums from all the individual towns in the Hessequa geographical area was a step in this direction (the researcher is a member of this forum). This forum would collaborate with the municipality and other stakeholders in order to promote socio-economic development of the area.

The dimension of *institutions and governance* represents a core component of the adaptive capacity of a municipality. The bureaucratic model as such does not provide for *transformational adaptation* in order to change the fundamental attributes of the municipality in response to expected disruptions and perturbations. Bureaucratic governance does allow for *incremental adaptation* which aims to maintain the integrity of the municipality in the short to medium term.

The conclusion is that the bureaucratic model served the purpose of maintaining stable governance rather than flexible and adaptive governance. Bureaucratic governance had enhanced the *coping capacity* of the municipality by successfully addressing, managing, and overcoming adverse conditions in the short to medium term. Governance models based on networks, collaboration, learning, and the creation of public value are more suitable than a bureaucratic system to inform adaptive governance practices in a complex context.

### **6.3.2.2 Experimentation, innovation, and learning**

Both the councillors and the officials of the municipality purposefully networked with other actors in order to experiment, innovate, and learn. Examples of typical initiatives to stimulate innovation included the establishment in 2014 of the Grey Power advisory forum, consisting of knowledgeable residents who assisted with the long-term strategic planning of the municipality (Prins, 2015), the establishment of the Hessequa Innovation Helix as an adaptive space for innovation and the creation of public value in 2015 (Hessequa municipality, 2022a), the Hessequa Energy Summit held in Still Bay in July 2015 (Fouché & Brent, 2019; Hessequa municipality, 2022b), and the Hessequa Tourism Indaba held in November 2016 in Albertinia (Hessequa municipality, 2022c). Checkland's (1981) soft systems methodology was used as a decision framework to devise a long-term sustainable renewable energy action plan for the Hessequa municipality in July 2019. This approach required participants to apply different paradigms to develop renewable energy futures for the municipality. (The researcher played a leading and active role in each of the above initiatives.) The intent with all these initiatives was to learn, to experiment, and to innovate (i.e., to also implement). Senge (2006:364) very aptly defines learning as the process of building capacity for effective action and to produce results.

Adaptive spaces were created in the form of workshops with residents, stakeholders and external actors to address specific issues of concern and to inform policy formulation (see, for example, the decision process to formulate a policy for the keeping of dogs and cats in Appendix Q.)

The Covid-19 pandemic triggered several technological innovations. One example was the use of ICT for conducting virtual meetings and interviews instead of physical meetings. Council meetings were held virtually and were made available in YouTube format (Hessequa municipality, 2022d). Another category of municipal innovations aimed to render certain categories of services at the "home of the resident" via ICT systems. It was now possible to submit building plans and other land use applications electronically rather than in

hard copy format at the municipal offices. Social media was used very effectively to issue warnings about severe weather events and other disruptions to residents.

Prins (2015) discussed learning networks that had been established with academic institutions, knowledgeable residents, and external experts. The annual reports of the municipality referred to many forums and networks where representatives of the municipality interacted with external actors. Examples of such external parties included SALGA, numerous provincial and national government departments, chambers of commerce, academic institutions, service providers, community forums, and sport and recreation associations (Hessequa municipality, 2021b). Interviewees confirmed that many of these networks supported learning and innovation processes. Relevant learning was captured in the IDP and reflected in budgets and projects. Amendments to existing policies and the drafting of new policies were often informed by learning. See for example the decision process that resulted in the by-law that regulated the keeping and treatment of dogs and cats in Appendix Q.

Officials participated in many learning processes that could be described as single-loop learning (Tosey *et al.*, 2011; see Section 4.4.5 above). A general observation was that most learning took place within municipal directorates rather than across the boundaries of the directorates. A second observation was that the risky processes of experimentation and innovation could jeopardise the proud record of eight consecutive clean audits by the AG. The municipal administrative bureaucracy, in general, was perceived as risk averse by several interviewees. As a result, experimentation and innovation initiatives were limited to low-risk endeavours. However, several innovative initiatives demonstrated that the municipality did have some capacity to innovate. The first-in-Africa solar-powered water desalination plant in Witsand, a small-scale solar-powered electricity generation facility in Riversdale, energy optimisation initiatives, and the application of ICT to support administrative functions were examples of innovations that the municipality might be proud of.

The freedom of officials and councillors to innovate, and to implement was constrained by legislation, standard operating procedures, policies, and governance arrangements. Any initiative that might threaten a clean audit report by the AG was deemed inappropriate at the municipality. Therefore, freedom to innovate was limited not only by the nature of the bureaucratic environment but also by a risk-averse approach.

The primary aim of this dimension of adaptive capacity, namely, experimentation, innovation and learning, was to explore the domain ranging between rigid bureaucratic order and the unpredictable domain of chaos in search of innovations that might introduce new futures for the municipality (Kauffman, 1993). No specific provision was made in the 2021–2022 municipal budget for experimentation and innovation. The dimension of experimentation, innovation, and learning represented an underdeveloped component of adaptive capacity at the municipality.

### **6.3.2.3 Future-conscious decision making**

Complex causality causes the municipal environment to be volatile, unpredictable, and ambiguous. Therefore methods, such as strategic foresight and scenario planning, which can anticipate alternative longer-term futures should be adopted. A municipality, as a learning organisation, needs a future consciousness and an ability to detect, interpret, and act upon early warning signals about future trends and patterns (Morgan, 2006:88).

Municipal decision making was normally focused on the remaining part of the current five-year term of office for councillors and directors. Decision making was aligned with the strategic direction of the municipality as captured in the IDP. The current IDP covered the period of 2017 until 2022 (Hessequa municipality, 2021a). This IDP contained an overview of the socio-economic conditions within the municipal area. It contained a summary of current legislation that applied to municipalities, the development needs of each community, and the capital projects planned for each community. The IDP, however, was quiet about the current

status of available technology and about initiatives to harness the power of technology to realise its objectives. Although the IDP referred to existing legislation it did not refer to upcoming legislation that was being formulated and that might affect the municipality and its residents in the near future. The IDP was also vague about climate change and its potential local effects. It appeared as if the situational awareness of the municipality as reflected in the IDP might suffer from several blind spots.

There is no evidence that formal scenario work or foresight exercises had informed the IDP documents of the past two terms (i.e., 2011 to 2021). Interviewees confirmed that the municipality did not make use of formal environmental scanning or foresight techniques to inform decision making. Scenarios considered in the Long-Term Financial Plan (LTFP) of the municipality for the period 2019 to 2029 were limited to a sensitivity analysis regarding key financial inputs into the financial model (Hessequa municipality, 2022e). Instead of developing a range of robust policy options and strategies that could address different futures, the municipality adopted a specific set of policy initiatives that were integrated, aligned, and entangled with those of the district municipality, the Western Cape province, and the national government as set out in the IDP (Hessequa municipality, 2021a). As a result, the adaptive capacity associated with the integrated set of policies could be considered as rather limited and restricted.

Key stakeholders who participated in municipal decision making included the financial consultants who developed and continued to update the LTFP, academics, knowledgeable residents, residents with experience of local conditions, government institutions and other actors who were listed in the communication policy as “tertiary audiences”. A specific group of key stakeholders who actively participated in municipal decision making was the Still Bay business forum. Interviewees also referred to retired professional people in the municipal area that contributed to important decision processes. Access to external networks of knowledgeable people and institutions compensated somewhat for the absence of internal environmental scanning initiatives and it enhanced adaptive capacity.

The dimension of future-conscious decision making was underdeveloped. Current planning was primarily based on a single shared view of the future as documented in the IDP. A significant change in the trajectory of any key contextual variable might render such planning inadequate. Skilled resources from the municipal area were available, able, and willing to address this aspect.

#### **6.3.2.4 Information and knowledge management**

Officials, councillors, residents, and stakeholders could access a wealth of information and knowledge about the internal and external environments of the municipality through the internet, literature sources, sophisticated ICT systems, and social networks. However, the institutional capacity to process and interpret this information and to understand its potential implications remained a challenge. The argument throughout this study had been that a complexity perspective was more appropriate than a linear perspective to process information about complex contextual issues. Findings from Chapter 5 confirmed that current attempts to make sense of available information were primarily informed by a linear paradigm rather than a complexity paradigm or a systems paradigm. A common observation during the interviews was that interviewees lacked the vocabulary and understanding of complex systems required to describe and to discuss the nature and behaviours of such systems (see Section 4.4.4). The analysis of empirical data about the contextual awareness of municipal decision makers revealed that most interviewees were aware of different drivers of change but only a small minority had some understanding of the systemic interrelationships among them. It was therefore unlikely that municipal decision makers applied complexity thinking when they processed information in order to produce knowledge, understanding, and insight about decision issues and the consequences of decisions.

It appeared as if the municipality had the capacity and skill to access, receive, generate, evaluate, share, and disseminate information and knowledge regarding adaptation options of *immediate importance* to exposed individuals. This capacity had been demonstrated during the Covid-19 pandemic and during recent natural disasters, such as floods, droughts, storms, and fires. The ability of residents to analyse this information and to devise their own short-term adaptation options proactively had also been demonstrated. Yet, the same skill had not been demonstrated regarding adaptation options for the longer-term future.

The municipal institution had not demonstrated its ability to convert available knowledge and information regarding contextual matters to a level of understanding and insight based on a complex systems perspective. A key argument in this study was that a complexity perspective of available information and knowledge might reveal insights and understanding that could enhance both the quality of decisions and the adaptive capacity of the municipality.

The main finding was that the municipality had only exploited a small portion of the full potential contribution of information and KM to enhance its adaptive capacity. Much more could be done to enhance future-conscious decision making by means of advanced information and KM. Adaptive capacity might be enhanced significantly through the application of a complex systems perspective and by raising residents' awareness of longer-term challenges and risks.

### **6.3.3 Adaptive capacity at the cognitive level**

Adaptive capacity at the cognitive level will be evaluated in terms of the following dimensions: *Paradigms and worldviews, myths and metaphors, and organisational culture.*

#### **6.3.3.1 Paradigms and worldviews**

Adaptive capacity at the level of paradigms and worldviews will be determined by the flexibility of the current paradigms and worldviews to accommodate different perspectives. It will also be determined by the ability of decision makers to replace current paradigms and worldviews in order to adopt a new paradigm and worldview different to the current ones.

The current paradigms of bureaucratic governance, a constitutional democracy with three distinctive, interdependent and interrelated spheres of government, and a reductionist approach to decision making informed local governance in SA in general (RSA, 1996). This was also the case at the Hessequa municipality. The bureaucratic paradigm dominated. Blueprint planning, which was technical, clean, precise, comprehensive, but inflexible continued to characterise most planning activities (Swanepoel & De Beer, 2011:57-58).

The worldview of the municipality was that it had to perform the role of giver of good things (Swanepoel & De Beer, 2011:38). It fulfilled this role by providing free housing and free or subsidised basic services to thousands of people as well as paid-for services to residents. The worldview of many residents as expressed at community meetings was that the municipality and government had to provide for their basic needs and government had to create jobs. About one-third of all households in Hessequa were registered for indigenous support (Hessequa municipality, 2022). Unfortunately, the provision of free basic services and social grants did not enable residents to develop an adaptive capacity of their own.

A general observation was that the worldviews and paradigms of the key actors within the administration, the political structures, and the communities had remained relatively fixed between 2011 and 2021. No empirical data or observations suggested that any dedicated effort was made to adjust or change the current fundamental worldviews and paradigms of the municipal actors. No data was found that suggested that current paradigms and worldviews were challenged, reflected upon, or critiqued on a regular basis. However, most interviewees indicated that they did participate in multiple discourses with diverse stakeholders. Most interviewees, namely, both councillors and officials cited cases where they actively searched

for diverse perspectives, problem frames, and alternative solutions that could inform decision making. The researcher attended dozens of municipal work sessions between 2004 and 2022 where specific decision issues were approached from multiple perspectives. Although interviewees confirmed that they did consider different perspectives and innovative approaches to address decision issues the outdated paradigms and worldviews endured.

The adaptive capacity of municipal actors at the level of paradigms and worldview appeared to be marginal rather than transformational.

### 6.3.3.2 *Myths and metaphors*

The ability of the municipality to adjust, reconsider or replace current myths co-defined its adaptive capacity. The following two myths, shared by several directors and senior officials, had been observed and confirmed during interviews:

- Officials did not take difficult decisions, but councillors did.
- The administration would do nothing that might jeopardise a clean audit.

A number of senior officials and a few directors believed that they did not take “*difficult decisions*” because they only applied relevant laws and implemented policies and council decisions. In contrast, councillors believed that they did take “*difficult decisions*” when they formulated policies and when they compiled the budget.

Several directors and senior officials admitted that receiving a clean audit was a key consideration during all decision-making processes. A director remarked that “*a clean audit [was] probably the best testimony of proper decision making, good administration, good management, good recommendations and support to the council ...*”. Another director confirmed this by stating that “*this [a clean audit] is the strongest motive that exists to do the right things in the right way and the right time within the rules*”.

The implication of these myths was that the officials would not take or support any kind of decision that might jeopardise a clean audit. As a result, the “*difficult decisions*” that were typically required during uncertain innovation and experimentation processes were avoided. Decisions in the complex domain “between the domains of order and chaos” are subject to VUCA conditions. This is also the domain where possible failure and possible breakthroughs are to be found (Kauffman, 1993). The motivation of a clean audit resulted in preferential support for decisions with a predictable output within the domain of order. The implication of these myths was that the adaptive capacity of the municipality was impeded.

A study of the five annual reports for the years 2016/17 to 2020/21 revealed two other myths that informed the municipal performance management framework. The first of these myths was that a significant component of municipal performance was evaluated in terms of the *activities* of officials (e.g., the number of progress reports written, the regular review of important documents, such as the IDP, risk register and delegation register, and percentage spending of capital and operating budgets during a year) rather than the *impact* of these activities or the *quality* of the documents involved. The second myth that informed many KPI targets was that various important performance management targets should be based on inputs rather than outputs and impact that benefit residents. In addition, performance targets for a specific year were set at much lower levels than the actual performance levels of the previous year or years (see, for example, the time allowed to evaluate land use applications and building applications). The same low-level performance targets (e.g., for electricity losses and water losses) were set for five years in a row rather than using the best performance of any previous year as the challenging target for the new year. The implication of these myths was that the municipal performance management system did not incentivise behaviours that would benefit the customers of the municipality. Instead, officials benefitted. In many instances the KPI targets



provided no incentive to improve performance relative to a previous year. These contextual factors were not aligned with decision making that put residents' interests first. Current KPIs did not inform a culture of continuous improvement. It might even promote mediocre performance.

In summary, the drive for a clean audit informed a risk-averse approach to decision making within the domain of order and it led to avoidance of "*difficult decisions*" in the complex domain. The myths that informed the design of the municipal performance framework were not conducive to decisions that resulted in impactful outcomes that benefited residents. Taken together, all these myths contributed directly and indirectly to mediocre decision making. In addition, these myths hollowed out the adaptive capacity of the municipality.

### **6.3.3.3 Organisational culture**

Organisational culture was discussed in Section 4.4.4.3. High levels of respect and professionalism, and reasonable levels of trust were observed. Learning processes were promoted (see Section 4.4.5.2). The municipal culture also provided for collaboration, teamwork, and information sharing at a systems level, as discussed above in this section. The risk-averse culture did accommodate critical and innovative thinking and experimentation provided it did not jeopardise a clean audit. The researcher participated in many productive municipal workshops and public consultation processes characterised by critical, creative and innovative thinking. These workshops had been the source of numerous innovative ideas as discussed above. Unfortunately, only a small number of these ideas had been implemented. Unfortunately, many good ideas had not been implemented. Cases of successful experiments and innovations were discussed above.

The conclusion is that the municipal culture was sound but risk-averse and conservative regarding decision-making processes. The municipality was successful in facilitating the generation of good ideas but very particular and cautious in their implementation. Municipal culture did contribute to the adaptive capacity of the municipality, but it was reined in by conservatism in decision making and by a bureaucratic culture.

### **6.3.4 Adaptive capacity across causal levels**

Adaptive capacity across causal levels will be evaluated in terms of the following dimensions: *Power and agency, leadership capacity, as well as variety and options.*

#### **6.3.4.1 Power and agency**

Leaders and managers within the administration and political structures employed their diverse sources of individual and collective power and self-agency to plan initiatives and projects, and to implement them. They used their cognitive abilities to devise strategies and plans, and systems and networks to produce the outputs that they desired. Details of numerous examples of successfully implemented initiatives were documented in the annual reports (Hessequa municipality, 2022). This combination of power and agency was continuously being applied at all three causal levels to enhance the adaptive capacity of the municipality and its communities. However, residents' levels of self-agency appeared to vary from high to very low.

Although the researcher had not specifically collected data about the self-agency of residents, he had made the following general observations in the Hessequa region over the last decades: Poor, illiterate and unskilled residents appeared to have very low levels of agency and power. They also had a very limited adaptive capacity and remained dependent on free basic services and social grants made available by all three spheres of government. Actors with low levels of agency and power found it increasingly more difficult to survive on their own. As a result, more and more people registered at the municipality and at schools and churches for indigent aid. In contrast, people with skills and higher levels of education appeared to have higher levels of

agency and power. They benefited from a better developed adaptive capacity and were able to devise alternative means to generate an income and to cope during times of distress. They took control of the future through proactive actions to improve their adaptive capacity. Many skilled young men from the region found employment overseas as contract workers, for example. Young people with tertiary qualifications found employment overseas and in cities. Actors with high levels of power and agency had implemented major projects and initiatives with favourable socio-economic outcomes.

The virtues of power and agency were distributed very unevenly throughout the Hessequa population. The power and agency of a minority of innovative residents contributed much to enhance the coping capacity of large numbers of poor and unskilled residents in the area. Overall adaptive capacity of the municipality was largely limited by the low levels of power and agency of the majority of the population. The municipality had significantly enhanced the adaptive capacity of local communities by means of service delivery and provision of housing between 2011 and 2021.

#### **6.3.4.2 Leadership capacity**

Municipal leadership consisted of a combination of administrative and political leadership, which were entangled, interdependent and inseparable. Administrative leadership could be described as both ethical and bureaucratic in nature. Political leadership at Hessequa municipality could be described as ethical and opportunistic. The way in which each type of leadership influenced adaptive capacity will be evaluated here.

Hessequa municipality was served by a very capable administration under the leadership of an experienced municipal manager (see Section 4.4.3.1.) Although the administration was not always praised by the rate payers and taxpayers, the administration was perceived to be legitimate and effective in municipal terms. In March 2022, Hessequa municipality was again ranked among the top performing municipalities in SA according to News24 (2022). In 2021, the Hessequa municipality was ranked as the twentieth best municipality out of 205 local municipalities in SA (GGA, 2022).

Although the municipality had a proud history of good and stable political leadership there were a few cases of political instability caused by unreliable coalition partners from minority parties. During these unstable times and during regime changes a capable administration adhered to strong professional norms and continued to function effectively. In this way, professional administration served as a substitute for political leadership (DuBrin, 2016:9). The ability of the administration to serve as substitute for political leadership might have been the result of earlier leadership during which leader substitutes might have been built into the system (King, 1990:49). The well-educated and experienced directors and municipal manager managed to continue with service delivery and performance of municipal functions despite discontinuities in political leadership. During a focus group session with the caucus of the ruling DA party, the consensus was that the administration would be able to continue to function effectively for up to six months without political leadership and oversight. A councillor remarked that *“there [was] a good foundation, there [were] good policies in place”*. Another councillor referred to *“our highly qualified and experienced officials in the positions of directors”* that served as substitutes for political leadership. The availability of a strong administration that could serve as a substitute for political leadership enhanced the adaptive capacity of the municipality.

Political leaders of the municipality applied (mostly) ethical and opportunistic political strategies and tactics to gain power and to build relationships with actors who could help them to achieve the aims of the municipality as well as their own aims (DuBrin, 2016:226). This type of leadership contributed to adaptive capacity. An experienced official remarked: *“I think we have one of the best councils possible.”* The municipality benefited from the experience of several

respected councillors from both the opposition and governing parties that had served more than one term.

The adaptive capacity of the municipality was enhanced through effective teamwork and communication between the administrative and the political leadership structures. Several observations as well as interview data served to substantiate this claim. All municipal leaders employed ICT systems, social media, printed media, local radio stations, workshops, meetings, public communication, consultation processes, the internet and YouTube to communicate and interact with one another and with the public in terms of the communication policy (Hessequa municipality, 2022). Availability and use of an effective communication system contributed much to the adaptive capacity of the municipality.

The current (2017-2022) IDP contained blue-print strategies and plans to address numerous current, known socio-economic and infrastructure-related challenges in conventional ways. However, the IDP did not consider different possible futures and it did not make provision for the contingencies associated with such possible futures. Fortunately, the municipal leaders and managers were connected to many external government and non-government institutions through multiple formal and informal networks, as discussed in Chapter 4. Access to these networks tended to enhance adaptive capacity.

Interview data and many observations by the researcher confirmed that the councillors and directors, as leaders, consulted widely. They actively searched for alternative perspectives and opinions regarding issues of concern. Then they debated and evaluated them and discussed uncertainties and doubts before decisions were made. The debates and discussions took place during workshops, public consultation sessions, caucus meetings, portfolio committee meetings, and council meetings. Despite the bureaucratic character of the municipality some elements of adaptive and collaborative leadership were observed. Adaptive capacity was enhanced through this type of leadership. However, the focused adoption of adaptive and transformational leadership may contribute much more to the adaptive capacity of the municipality than what was currently the case.

#### **6.3.4.3 *Variety and options***

The adaptive capacity of the municipality within each dimension was co-defined by the availability of alternative means to realise the same adaptive capacity objective. At the semantic level the municipality had access to a limited variety of internal resources. Skilled and educated human resources, financial resources, and fresh water were in short supply. However, the capacity of the limited supply of local sophisticated, well-educated, retired and experienced human talent had remained underutilised. This potential remained available. Resources that were in short supply internally might be supplemented by other spheres of government, academic institutions, funders, and strategic partners, in cases of need or emergency. The capacity of existing basic infrastructure, such as water and sanitation systems, electricity supply systems, waste handling and housing, was rather limited and without redundant capacity (see details in the IDP). In some cases, these limitations prevented further spatial development as substitutes or alternative solutions were in short supply as well. The diversity of means to earn an income was positively related to skills and education levels and levels of work experience. As a result, many poor, uneducated, and unskilled people were unemployed and were dependent on social grants.

Experience during the recent Covid-19 pandemic and earlier periods of severe droughts, fires, and storms had shown that the municipality and its residents had the coping capacity to deal with disruptions. In cases where the municipality itself could not implement specific adaptive measures the option was there to involve external actors, such as provincial and national government or contractors to act on its behalf.

At the systems level, a legitimate institution had governed the municipal domain effectively and prudently under different governing parties and coalitions. A strong administration served as substitute for political leadership. The municipal structures created ample opportunities where creative and innovative ideas were generated. The risk-averse bureaucratic structures, however, remained hesitant to implement them, especially when it might be at the cost of a clean audit. This reality limited the spectrum of possible developmental paths for the municipality. Decision making was primarily focused on the short to medium term and was insensitive to preferred longer-term futures. This linear approach increased the likelihood of current futures to materialise, namely, futures informed by the extrapolation of current trends. Information and KM benefited from effective communication systems, but their effectiveness was limited by the capacity of decision makers and stakeholders to interpret and use the information.

At the cognitive level, the bureaucratic and the Newtonian paradigms dominated, as discussed in chapters 4 and 5. Adaptive capacity could be enhanced significantly if a complex systems perspective were to be adopted. The myth that a clean audit remained the ultimate objective of municipal governance resulted in risk-averse decision making. The municipal culture did accommodate diversity within certain boundaries and limits. Although multiple perspectives, truths, insights, and ideas informed decision making a conservative approach was adopted at the critical point when choices had to be made.

It is important to note that the dimensions and criteria considered above were not independent of each other. They could influence and reinforce one another. For example, good leadership and effective governance could reinforce all the other dimensions. The dimensions and criteria did not carry the same weight or importance. The relative importance of the dimensions and criteria were context dependent (Gupta *et al.*, 2010:11). The adaptive capacity of the municipality in terms of the strengths and weaknesses of each dimension was summarised in Table 6.2.

**Table 6-2 Strengths and weaknesses within each dimension of adaptive capacity**

<b>Dimensions</b>	<b>Strengths</b>	<b>Weaknesses</b>
<b>Dimensions at the semantic level</b>		
<b>Resources and assets</b>	Directors and officials are 'fit for purpose'. Most residents have access to schools, basic services, housing, and medical facilities. Good quality logistical infrastructure with alternative access routes is available. Highly qualified human capital in the form of grey power is available.	Most residents are poor, low-skilled or unskilled, and many depend on grants. Low levels of social cohesion. Limited availability of municipal funds. No redundant capacity of critical infrastructure and no substitutes for it. Shortages of fresh water and minerals.
<b>Ability to implement</b>	The bureaucracy has proven its capacity to implement large projects, it collaborates effectively with external actors, and it has demonstrated its capacity to deal with the Covid-19 pandemic and natural disasters.	Risk-averse decision makers only support low-risk initiatives. Legislation and supply chain policies tend to delay project implementation and capital expenditure.
<b>Dimensions at the systems level</b>		
<b>Institutions and government</b>	A stable and legitimate governance institution and administration. Effective cooperation between administration and political structures. Effective and sound financial management. A policy structure that enhances adaptive capacity. Care for indigent groups.	Collaboration between the municipality, the private sector and organised business forums is limited.
<b>Experimentation, innovation and learning</b>	The capacity to learn and to generate and implement innovative ideas has been demonstrated. Learning networks exist. Adaptive spaces are created and used to some extent.	The current risk-averse municipal culture and context do not stimulate innovation and experimentation. No provision is made in the budget for experimentation and innovation.
<b>Future-conscious decision making</b>	Networks provide access to relevant contextual information and knowledge resources. External sources of expertise and knowledge are available.	Lack of formal environmental scanning and foresight capabilities. A short to medium term planning horizon of up to five years. No provision for scenario planning.
<b>Information and knowledge management</b>	Access to relevant information exists. The ability to share and receive information of immediate importance exists. Effective communication systems are in place.	Limited capacity to process information from a complex systems perspective. Limited ability to raise awareness of longer-term risks and challenges.
<b>Dimensions at the cognitive level</b>		
<b>Paradigms and worldviews</b>	Bureaucratic and reductionist worldviews dominate in a stable micro-environment. Willingness to consider diverse perspectives. Democratic principles are adhered to.	Bureaucratic and Newtonian worldviews are ineffective in a complex context. Inflexible paradigms and worldviews prevail. Unwillingness to challenge inappropriate paradigms.
<b>Myths and metaphors</b>	The mythical clean audit informs conservative but honest government. The reputation of a clean audit report informs low-risk decision making. Officials do not (have to) take difficult decisions.	Overemphasis on a clean audit informs risk-averse decision making. Performance management is focused on inputs rather than outcomes. It does not stimulate competitive behaviour and sustains mediocre performance.

<b>Organisational culture</b>	The culture is characterised by respect, professionalism, important trust relations, honesty and openness to consider alternative points of view. Learning is promoted. Different perspectives are welcomed, and a common vision is shared.	The culture is risk-averse and limits experimentation and innovation. Current futures are entertained in planning and decision making. Subtle, negligible undertones of racism amid good race relations.
<b>Dimensions that cut across all levels</b>		
<b>Power and agency</b>	The administration and political structures display strength of power and agency. Powerful leaders set direction. Residents with high levels of power and agency enhance adaptive capacity.	Many poor, unskilled and uneducated residents suffer from a lack of demonstrated levels of power and agency. Power and agency is very unevenly distributed among residents.
<b>Leadership capacity</b>	A history of stable political leadership under different political regimes and coalitions. Motivated, well-educated and experienced directors and senior officials serve as substitutes for political leadership. Effective teamwork and communication among political structures, administration and residents.	Conventional bureaucratic leadership practices dominate. Limited evidence of adaptive and transformational leadership. Groupthink practices limit optimal performance of the council. Inappropriate party-political considerations affect decision making.
<b>Variety and options</b>	Strong networks with actors in the internal and external environments provide access to external human and physical resources. Both the DA and the ANC has governed the municipality with good effect. Several fit-for-purpose directors and officials can act as municipal manager. Collaborative networks and advisory forums can be established to harness expertise, knowledge and insight from local communities and organisations.	Natural resources, water and funding are limited, or often lacks. Municipal infrastructure has limited or no redundant capacity. Conservative worldviews and leadership inhibit experimentation, innovation and learning. Alternative metaphors and worldviews are required to support alternative futures. Latent human resources are underutilised.

Source: Candidate WTB Janse van Rensburg

It appears as if the adaptive capacity of the municipality varied among the different dimensions and causal levels. Based on the above evaluation it appeared as if the overall adaptive capacity of the municipality was rather limited. Despite a relatively low adaptive capacity, the municipality did have a coping capacity that enabled it to deal effectively with perturbations having a limited impact on the municipality. A limited adaptive capacity made the municipality vulnerable to high impact perturbations.

#### **6.4 Adaptive capacity of the municipality from a complexity perspective**

Adaptive capacity of the municipality can also be evaluated in terms of other frameworks and metaphors associated with a CAS. The conceptual framework of the 'Ashby space' will be considered first. Then the metaphors of a 'fitness landscape' and 'the poised state between order and chaos' will be considered.

Adaptive capacity in terms of the Ashby space refers to the range of responses a system can marshal in order to match the range of situations (i.e., threats and opportunities) confronting it. Ashby's (1956:207) law states that "only variety can destroy variety". The law of requisite complexity, which was derived from Ashby's law, states that "to be efficaciously adaptive, the internal complexity of a system must match the external complexity it confronts" (Boisot & McKelvey, 2011:279). The adaptive capacity of the municipality allowed it to generate complex responses that matched the complexity facing it, but only within certain limits. Without a vibrant adaptive capacity, the municipality would struggle to remain viable and sustainable under more

extreme conditions when these limits were exceeded. Stated differently, the coping capacity of the municipality was rather limited, but sufficient for small perturbations.

Boisot *et al.* (2011:285) add that the rate at which the adaptive capacity of a complex system increases must at least match the rate at which the variety of the environment increases. The level of *adaptive tension* refers to the difference between the adaptive capacity available in a system (i.e., its *adaptive capacity frontier*) and the adaptive capacity required by its context (McKelvey, 2001; Boisot & McKelvey, 2011). These authors divide the Ashby space into an ordered regime, a complex regime, and a chaotic regime. This conceptual framework is useful to evaluate the bureaucratic governance model employed by the municipality.

Bureaucratic governance was appropriate and sufficient to address 'variety' or challenges in the ordered regime of the Ashby space but insufficient to address the challenges posed to the municipality in the complex regime. The level of *adaptive tension* that the municipal decision makers observed or experienced might motivate them to develop the adaptive capacity of the municipality further. Without an awareness of adaptive tension and corresponding initiatives to address shortcomings the gap between the adaptive capacity frontier of the municipality and the adaptive capacity required by a VUCA context was likely to grow. As a result, adaptive tension would increase. The ability to sense adaptive tension within the municipal context may probably be enhanced through regular reflection on the adaptive capacity and the coping capacity of the municipality and the application of a complexity lens.

Boundaries between the domains of order, complexity, and chaos are rather fuzzy and difficult to define. A transition from one domain to another requires a phase shift (Kauffman, 1993; Snowden, 2021:59). The optimal region for rapidly improving adaptive capacity or fitness occurs "at the edge of chaos" where emergent self-organisation takes place (McKelvey, 2001). Kauffman (1993:174) distinguishes three "broad regimes of behavior" within which systems may operate, namely the ordered regime, the chaotic regime, and the complex regime at "the border between order and chaos". In the highly ordered ('frozen') regime, complex behaviour and change cannot propagate through the system. Highly ordered systems can only respond to significant changes in their environment through small changes in behaviour. Thus, adaptive buffering capacity would be absent. Within the chaotic regime it becomes impossible to control complex behaviour (Kauffman, 1993:232). Complex systems exist within the complex regime, 'poised' within the 'phase-transition region' between frozen states of 'fixed activity or inactivity' (i.e., order) and the unfrozen regime of chaos. Within the poised state a complex system can optimise both the complexity of tasks the system can perform as well as its evolvability within its context or fitness landscape. A change in system parameters within the ordered domain may initiate a "phase transition" from the ordered regime to the chaotic regime (Kauffman, 1993:174). This framework provided additional insights into the adaptive capacity of the municipality

The municipal bureaucracy represented a relatively 'frozen' component of the municipality whereas the municipality itself demonstrated CAS behaviours in the complex domain. Every time an adaptive space was created the bureaucracy and the municipality were exposed to the unfrozen regime of contextual chaos. Creative and innovative ideas that were likely to expand the adaptive frontier of the municipality also tended to expose the municipality to risk and uncertainty associated with the chaotic regime. A risk-averse culture often acted as a negative feedback loop that tended to freeze new initiatives through conservative decision making. Adaptive capacity of decision makers should therefore be characterised by an aptitude for creative thinking, risk taking, and some tolerance for mistakes.

The metaphor of a 'fitness landscape' can be used to model and to imagine the behaviour of the municipality as a CAS. A fitness landscape indicates how well a system 'fits' within varying situations and circumstances. Mountains on a fitness landscape represent areas of high fitness, valleys represent areas of poor fitness, and flatlands represent areas of neutral fitness.

The features of adaptability, flexibility and the capacity to learn contribute to success and survival on a fitness landscape (Geyer & Rihani, 2010:61-64). According to this metaphor, a high level of adaptive capacity within each of the domains of the adaptive capacity framework should enable the municipality to conquer most or many of the metaphorical mountains on its dynamic fitness landscapes. In contrast, bureaucratic governance that does not accommodate the development of municipal 'fitness' as required by its fitness landscapes will only end up in the lowest, sterile valleys on these landscapes.

The application of a complexity lens to the municipal context and to the municipality (in chapters 4, 5 and 6) revealed the 'frozen components', the bureaucratic requirements for order, the capacity to adapt, and the need for 'adaptation to the edge of chaos'. "A generalised poised state may prove to be the ultimate attractor of an evolutionary dynamics" for the municipality (Kauffman, 1993:281).

## 6.5 Conclusions

In this chapter, the adaptive capacity of the municipality was evaluated in different ways. In the first part of the chapter, two theoretical models of a CAS were used to evaluate whether the municipality was indeed a CAS or not (Rhodes *et al.*, 2011:8-15; Preiser *et al.*, 2018). It was confirmed that the municipality did possess the characteristic features of a CAS and that it did demonstrate the behaviours of a CAS. The conclusion therefore is that the municipality can indeed be described as a CAS. This finding corresponds with the literature consulted. Public governance systems and processes can be regarded and treated as CASs that are not amenable to linear management processes (Rihani, 2002:5; Teisman, Van Buuren & Gerrits, 2009; Rhodes *et al.*, 2011).

In the second part of this chapter, the adaptive capacity framework, developed in Chapter 3, was used to evaluate the adaptive capacity of the municipality at, and across, three different causal levels in qualitative terms. Although some of the co-determinants of the adaptive capacity of the municipality were indeed fixed, the adaptive capacity of the municipality as such was not fixed. It was co-determined by a number of time-dependent, interdependent variable factors at different levels of reality. Some of these factors were outside the control and influence of the municipality and others were within the control and influence of the municipality. Some factors could be enhanced and changed in the short term while others would take much more time to change. It was important to understand the nature of the determinants of adaptive capacity in order to manage them.

From a complexity perspective, the absence of adaptive capacity in all or any of the dimensions evaluated did not necessarily imply that the entire municipal system was without adaptive capacity. Complex systems, in general, demonstrate emergent behaviours at a systems level that are not observed in any of its constituent parts. Preiser *et al.* (2018:48) state that "there are certain distinguishable properties of CAS that are only observable when viewed at a holistic systems level. These features are all examples of systemic properties that do not reside in individual elements or components of the systems." Therefore, the absence of an adaptive capacity in any (or all) of the municipal subsystems does not necessarily imply that the municipality is unable to be adaptive in its decision-making processes.

According to the convincing arguments of Meadows (1999) and the theory of CLA (Inayatullah, 2004) the adaptive capacity of the municipality was partly rooted in the myths and metaphors, paradigms and worldviews, and culture of the municipality. These aspects informed the way in which the leaders and decision makers dealt with challenges, strategic planning, policy formulation, decision issues, uncertainty, complexity, and uncertain possible futures. These hidden aspects currently informed blueprint planning, a risk-averse approach to decision making, a low tolerance for experimentation, innovation, and risk taking, and no tolerance at all for mistakes. The fear of committing a "section 32 offence" as per the MFMA (i.e.,



unauthorised, irregular or fruitless and wasteful expenditure) hindered experimentation, innovation, and risk-taking. The fear of not receiving a clean audit had the same effect. As a result, adaptive capacity was sacrificed.

The catalytic influence of the dimensions of power and agency, and leadership capacity cut across all three causal levels. The mental models, power, and agency of formal and informal leaders enabled them to envision new possibilities. Those with an aptitude for risk took decisions and implemented them in order to establish the systems that produced the desired outputs. Some initiatives might fail. However, those that succeed were likely to enhance the adaptive capacity of the municipality.

The following findings were also distilled from the evaluation of the adaptive capacity of the municipality:

The adaptive capacity of the municipality varied between the different dimensions and the three causal levels as summarised in Table 6.2.

The scarcity of critical natural resources and funds, and the underutilisation of other available resources limited the adaptive capacity of the municipality.

The bureaucratic governance model provided for incremental adaptive capacity which enhanced the coping capacity of the municipality in the short to medium term. This governance model, which tended to maintain stability, did not provide for the transformational adaptation that might be required in the longer term.

The mythical importance of receiving a clean audit report from the AG informed a risk-averse and conservative approach to decision making that limited experimentation, innovation, and learning. As a result, adaptive capacity was sacrificed.

The IDP for 2017 to 2021 was based on blueprint planning for a single, current future with a five-year planning horizon. It was not informed by a comprehensive scan of relevant contextual domains, and it did not make provision for different future scenarios. Adaptive capacity could be enhanced if available resources were mobilised to inform future-conscious decision making.

Information and KM could be enhanced through the application of a complex systems perspective to process and interpret available information and data. A complexity perspective provided a new paradigm for planning. It had the potential to transform decision-making processes and could significantly enhance the adaptive capacity of the municipality. The advice of Cilliers (1998:127) is very relevant: "We need to come to grips with complexity in order to ensure our survival. In both science and politics, therefore, the acknowledgement of complexity is a vital step."

Current networks of strong relationships that linked municipal actors to external collaborators constituted strengths of the municipality that enhanced adaptive capacity.

Adaptive capacity could be raised to much higher levels through the adoption of complexity and adaptive leadership styles.

A complexity perspective of the adaptive capacity of the municipality in the latter part of the chapter revealed the following: Bureaucratic governance that did not expand the adaptive capacity frontier of the municipality at a rate that matched the growth in the demand for adaptive capacity imposed by its context was likely to fail. Municipal leaders and decision makers had to manage the adaptive tension between the adaptive capacity available internally and the contextual demand for adaptive capacity. This meant that municipal leaders should develop and exploit the adaptive capacity potential that is available as far as possible.

Development of the adaptive capacity of the municipality may require that decision makers must enter the complex regime of the Kauffman framework and the Ashby space, away from the comfort of the domain of order and stability. This transition implies and demands a phase change in mental models. It requires a complex systems perspective that is adequate to deal with issues in the complex domain. Enhancement of adaptive capacity within any of the domains will tend to improve the fitness of the municipality on its fitness landscapes.

The above analysis may be used as a resource by the municipality to manage and to expand its adaptive capacity. Both the White Paper and the Systems Act (Section 51.f) instruct the municipality “to organise its political structures, political office bearers and administration in a flexible way in order to respond to changing priorities and circumstances”.

The findings of this chapter, and the findings of chapters 4 and 5 will be used in the next chapter to devise a framework for municipal decision making.

## CHAPTER 7 A CONCEPTUAL FRAMEWORK FOR MUNICIPAL DECISION MAKING

The art of model-building is the exclusion of real but irrelevant parts of the problem and entails hazards for the builder and the reader. The builder may leave out something genuinely relevant; the reader, armed with too sophisticated an experimental probe or too accurate a computation, may take literally a schematized model whose main aim is to be a demonstration of possibility.

Very often such, a simplified model throws more light on the real workings of nature than any number of 'ab initio' calculations of individual situations, which even where correct often contain so much detail as to conceal rather than reveal reality. It can be a disadvantage rather than an advantage to be able to compute or to measure too accurately, since often what one measures or computes is irrelevant in terms of mechanism. After all, the perfect computation simply reproduces Nature, does not explain her.

Phillip W. Anderson (from his 1977 Nobel Prize acceptance speech)

### 7.1 Introduction

This chapter addresses the fourth research sub-question stated as follows:

*What are the features of a conceptual framework that could enhance the capacity of the municipality to take decisions under conditions of complexity?*

The research objective related to this chapter is to devise a conceptual decision framework that considers the contextual complexity, the decision process complexity, and the adaptive capacity of the municipality. The potential value of such a framework was pointed out in the preceding chapters. Opportunities were identified to improve current decision-making practices and to integrate new and innovative sub-processes into the formal decision process.

The design of the proposed decision framework was informed by the main findings of the preceding chapters. The literature review in Chapter 3 indicated that the paradigm of complexity was more appropriate to deal with complex decision issues within a complex context than an inflexible reductionist approach. The study of the municipal context in Chapter 4 revealed its complex and VUCA nature. In Chapter 5 the formal decision process was examined, and its complex nature was illustrated. Not only the decision process but also some of the decision issues were found to be complex and adaptive. The strengths and weaknesses of the adaptive capacity of the municipality were investigated in Chapter 6. The analyses of both Chapter 5 and Chapter 6 showed that the capacity of the municipality to address decision issues under conditions of complexity could be enhanced significantly if adjustments were made to its existing decision-making system.

The framework proposed below evolved from a very basic initial model (Franz & Kramer, 2010:536) that had been included in the research proposal. Key elements of this model were decision characteristics, contextual factors, the decision process, and the outcomes of decisions. The more detailed framework proposed here emphasises the dynamic nature of decision making in a bigger context. Key elements of this framework are addressed below.

This chapter will also address a specific gap in decision theory defined by Nutt and Wilson (2010:25) in their *Handbook of Decision Making*, namely that "decision research could begin to address the more normative aspects of decision making, such as what managers should do when facing a particular kind of decision situated in a particular way". The proposed framework will prescribe strategies that will be appropriate and adequate to address different kinds of contextualised decision issues.

The proposed framework can be defined as a *prescriptive* model of decision making that offers guidelines for taking action rather than a *descriptive* model (Nutt & Wilson, 2010:12). Some

aspects of the model represent a *normative* model that focuses more on what decision makers should do when they face a particular kind of decision situated in a particular context (Nutt & Wilson, 2010:25). Nutt and Wilson (2010:646-647) illustrated that a “merger” between a descriptive and a prescriptive approach offered additional insights.

The introductory part of the chapter will consider the objective, the design intent, and the design parameters of the framework. Then the framework itself will be built in terms of important theoretical concepts, legislation and the research findings. Following this, the guidelines and conditions for the effective implementation and use of the framework will be set out. A Biomatrix systems perspective will be used to understand the internal municipal context in which the framework will be used and institutionalised. The framework will be evaluated in terms of applicable criteria before the chapter will end with a summary, conclusions, and recommendations.

## 7.2 The objective

The objective was to devise a framework that would address the opportunities to enhance municipal decision making as identified and reported thus far. Such opportunities had been observed during the literature review and the field work. The framework was aimed at closing the ‘gap’ between current decision-making practices, as documented in Chapter 5, and an alternative approach that would be more capable to deal with complexity. Gaps or opportunities to improve decision making included the following:

**Gaps from Chapter 3:** The complexity paradigm revealed contextual data and information that were not accessible through the reductionist worldview that was applied in local government. Decision frameworks found in the literature contained concepts that could be used to address shortcomings of the municipal decision process.

**Gaps from Chapter 4:** The breadth, depth and planning horizon of the contextual analysis that informed the current IDP were very limited. Critical blind spots were identified in the IDP.

**Gaps from Chapter 5:** The current formal decision-making process was primarily focused on the structures involved in the linear decision process rather than on the process aspects that constituted it. Opportunities existed to create more adaptive spaces and to involve knowledgeable residents and other collaborators in the decision-support processes.

**Gaps from Chapter 6:** The analysis of the adaptive capacity of the municipality revealed several weaknesses and opportunities which might hold the key to enhanced decision-making.

The design intent for the decision framework is to close most or all of these gaps.

## 7.3 Design intent and design considerations

The intent with the framework is to devise an “internal model” for decision making within the municipal environment “which compress[es] information and allow[s] action” and that can be used to facilitate effective decision making (Kauffman, 1993:232). The following quote also captures the design intent of the framework: “Effective decision-making procedures ... may result in decisions that are more likely to achieve intended outcomes” (Tasa & Whyte, 2005:119).

The framework must be in a format that is easy to understand and to apply once users have been trained. It is intended to serve as a practical, user-friendly aid for councillors and officials. The following definition of a decision framework by the US National Research Council (NRC) (2013:70) provides a few guidelines to consider:

Decision frameworks provide a way to facilitate and enhance decision making by providing conceptual structures and principles for integrating the economic, social, ecological, and legal/institutional dimensions of decisions. Their application can result in consistent and effective results.

According to the NCR the framework must facilitate and enhance decision making. It must provide conceptual structures and principles to integrate the dimensions of decisions, such as the PESTLE dimensions, into the decision process. For the purposes of this study, it also must facilitate decision making in a complex context. Gray (2021) defines conceptual frameworks as “mental representations that order experience in ways that enable us to comprehend it”.

The framework must integrate existing theoretical concepts (identified in the literature review) deductively and knowledge gained empirically in this study inductively (Mouton, 2001:177). The Constitution and related legislation also provided aspects to consider. Thus, an abductive approach will be followed to integrate and summarise theoretical aspects and practical learning in the conceptual model, as illustrated by Järvensivu and Törnroos (2010). Considerations from the preceding chapters, the literature, and legislation are the following.

### Considerations from Chapter 3:

- Incorporate a mechanism to categorise different types of contextualised decision issues entering the decision process (Rittel & Webber, 1973; Snowden & Boone, 2007).
- Consider the law of requisite complexity (Boisot & McKelvey, 2011:279).
- Include relevant principles of decision frameworks from the literature (Grint, 2005; Snowden & Boone, 2007; Van Loon & Van Dijk, 2015; Greenberg & Bertsch, 2021).
- Limit the probability of committing decision errors (Boal & Meckler, 2011:327).

### Considerations from Chapter 4:

- The collection and collation of environmental data that may apply to strategic planning or to a decision issue (Morrison, 1996; Horton, 1999; Voros, 2003; Lombardo, 2006)
- The VUCA character of the municipal context (see Section 4.3 and Section 4.4)
- Frameworks to interpret contextual information (Slaughter, 1999; Inayatullah, 2004; 2014; Dostal *et al.*, 2005; PESTLE Analysis, 2014; Greenberg & Bertsch, 2021)

### Considerations from Chapter 5:

- Consider shortcomings of the current formal municipal decision-making process and the recommendations to deal with them (see Section 5.4).
- Address the need for a future awareness and a foresight capacity in the framework (Horton, 1999; Linstone, 2002; Voros, 2003; Lombardo, 2006).

### Considerations from Chapter 6:

- Consider the strengths and weaknesses affecting the adaptive capacity potential of the municipality (see Table 6.2).

### Considerations from legislation:

- **Constitution:** The effective, efficient and accountable performance of the legislative and executive duties of the municipality (Section 151) and the achievement of the municipal objectives (Section 152) through effective decision making.
- **MSA:** Provide for community participation (Chapter 4). Compile a comprehensive IDP that reflects the sustainable long-term strategic plan of the municipality (Chapter 5). Establish a performance management system that provides useful feedback regarding the quality and impact of municipal decision making (Chapter 6).

- **The White Paper:** Promote development-oriented local government (Section B).

### Considerations from the literature:

Considerations and design criteria were harvested from the literature review in Chapter 3 and from the literature referenced below. The NRC (2009; 2013) suggests the following measures:

- Decision frameworks need to make provision for learning and knowledge-building.
- The decision process should be started by defining users' or customers' needs collaboratively and iteratively (also see Ulrich [1991] in this regard).
- The right decision process should be employed to deliver the desired outputs.
- Networks should be established that link information producers and users of the information.
- Connections and relationships should be developed across disciplines and organisations to source information from different disciplinary domains.
- Decision-support systems need institutional stability through formal institutionalisation.
- Networks should be established, new decision routines and mandates should be implemented, and resources should be allocated to the decision process.
- The decision framework should be flexible, adaptable, and scalable and participants must learn from experience.

Various authors emphasised the importance of contextualising decisions issues: "It is imperative that the decision-taker[s] have a detailed knowledge of the environment in which the decision is being taken ... and the key is to identify the features that are instrumental in determining the situation" (Keast & Towler, 2009:6). "Just as there is no best way to organize, to teach, or to do research, there is no one best way to make decisions. The effectiveness of the approach depends on the situation" (Tarter & Hoy, 1998:222). "The point is that the ideal pattern of decision making is not invariant across task environments but is dependent on the nature of task demands" (Johnston *et al.*, 1997:620).

Gerrits *et al.* (2009) recommend that a decision framework must incorporate "composite policy action systems" rather than "singular policy action systems". Singular policy action systems are self-referential. They reinforce existing beliefs, goals and processes. Composite policy action systems are open and dissipative in the sense that they redefine system boundaries and connect with new actors that may share diverse ideas in order to create more creative approaches to policy formulation.

The following recommendations from the Santa Fe Institute apply to decision processes taking place within a complex context (Waldrop, 1992:333-334):

- Keep as many options open as possible.
- Develop workable, viable solutions rather than "optimal" solutions.
- Maximise robustness and survivability when faced with uncertainty and non-linear system behaviour.

Other authors contribute the following considerations to the framework:

- Address the complexity of decision-making (Nutt & Wilson, 2010a; Morçöl, 2007).
- Apply a systems perspective and a CAS perspective to contextualised decision issues (Byrne & Callaghan, 2014; Capra & Luisi, 2014).
- Include a mechanism to categorise contextualised decision issues as simple and clear, complicated, complex or chaotic (Snowden & Boone, 2007; Greenberg & Bertsch, 2021).
- Enable a temporal consciousness of past, present, and future and an awareness of time, timing, and time lags (Linstone, 1984; 2002; Lombardo, 2006).

- Consider longer-term implications of decisions and “consequence management” (Martin, 2006; Laszlo, 2009; Slaughter, 2010).
- Consider the worldviews and paradigms of the decision makers (Meadows, 1999; Cook-Greuter, 2005; Beck & Cowan, 2006; Laszlo, 2009).
- Consider the dynamic interaction among contextual variables at different levels of reality (Wilber, 1996; Slaughter 2001; 2002; 2010; Inayatullah, 2004; Esbjörn-Hargens, 2009).

A decision-making framework contains a model for decision making. The model should make provision for the (initial) framing and classification of a problem issue or a decision issue. The framed decision issue has to be classified as either well-defined and structured, or ill-defined and unstructured (Checkland, 1981:154). Although the framework addresses decision issues ranging from simple and ordered issues to complex and chaotic issues, the primary focus should be on complex decision issues. The framework must be able to recognise complex decision issues and must also be adequate to deal with them. In addition, the framework must make provision for rational decision making about simple matters<sup>5</sup>.

A complexity-based approach to decision making requires a paradigm shift away from the reductionist approaches that characterise current decision making (Teisman *et al.*, 2009:5). Instead, a plurality of epistemological perspectives is required to understand decision making better – although not fully! Complex systems can only be understood partially, and within a certain epistemological framework.

The domain of action, which gives expression to a decision or a strategy, reflects the decision maker’s assumptions about risk and uncertainty. In a stable and predictable environment, the implementation of a programme (and pre-programmed actions) would be appropriate. However, in a complex environment characterised by risks, uncertainty, bifurcations, and random events predictability is reduced. Therefore, a flexible strategy to inform action would be appropriate (Morin, 2008:54). Morin concludes that “complexity needs a strategy” and “simple thought solves simple problems” (Morin, 2008:56-57).

A complexity lens allows one to view social systems as path-dependent and CASs rather than mechanistic systems with straightforward cause-and-effect linkages and orderly, predictable behaviours (Anderson *et al.*, 2005). Therefore, decision makers must consider initial conditions and the historical evolution of decision issues.

Any model of a complex system would have to possess the capability to model the processes of representation and self-organisation (Cilliers, 1998:10). The term representation refers to the capacity of a system to gather, store, interpret, and use information about its environment in order to cope with changes in the environment. Self-organisation refers to the capacity of a complex system to develop and change its internal structure by itself.

The design of the framework has to address all the aspects listed above in terms of empirical findings, legislation, and literature sources. It must have practical value and should be easy to use. In addition, it must be compatible with the existing municipal operations and processes. Therefore, it is important to consider the scope of the framework first.

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<sup>5</sup> The municipality already employs the delegation system where the tasks and the operating context afford relatively stable, clear, simple conditions (Rainey, 2009:183). Rational decision making takes place according to the prescriptions of the Delegation Register and SOPs.

## 7.4 A framework for municipal decision making

The main objective of this research is to devise a conceptual framework for municipal decision making that captures most of the learning involved. The scope of the framework and the components thereof are discussed next.

### 7.4.1 Scope of the framework

It is important to define the scope of the decision framework from a complex systems perspective. Both the literature review and the empirical work have indicated that municipal decision making can be described as follows:

Decisions about a spectrum of decision issues impacting upon numerous stakeholders are taken by means of a formal decision process by appointed actors with diverse backgrounds, worldviews, and aims within a municipal context which is exposed to the contingencies of a VUCA world.

In terms of this description, the scope of the framework has to seriously consider the following aspects and the implications of each: *Appointed actors*, *diverse backgrounds*, *worldviews and aims*, *a spectrum of decision issues*, *numerous stakeholders*, *municipal context*, *contingencies of a VUCA world*, and *a formal decision process*. Each of these interrelated aspects will be discussed briefly.

***Appointed actors:*** These are the leaders, councillors and officials directly involved in decision making. Councillors are appointed through a legislated, democratic election process by individual voters in their constituencies at five-year intervals. Legislation prescribes that the municipal council (read ‘the caucus of the governing party’) appoints the municipal manager and directors. Officials at lower organisational levels are appointed by the municipal managers and directors. It is a requirement that officials be ‘fit for purpose’. Decision makers have to be capable to deal with the decision issues they face. Once the municipal council adopts the decision framework, users will have to know how to use it.

The implication is that the sophistication and quality of municipal decision making is co-defined by the ability of registered voters to identify and vote for capable councillors, and the ability of councillors to choose ‘fit-for-purpose’ officials. Decision makers should be selected and appointed based on their knowledge and decision-making skills rather than on popularity and charisma. In addition, they must be trained in the use of the framework. They need a working knowledge of the features and behaviours of complex systems.

***Diverse backgrounds, worldviews and aims:*** Empirical observations indicated that decision makers at the municipality differed in terms of demographic features, race, culture, education and experience. They also differed in terms of their worldviews, mental models, beliefs, myths, cognitive abilities, and personal aims and objectives. A complexity perspective favours diverse perspectives and worldviews. A complexity perspective also demands that actors are adequately prepared to deal with complex decision issues. Actors should be able to accommodate diverse perspectives.

The implication is that the strength of diversity has to be complemented by decision makers that can adopt or at least consider an alternative paradigm such as a complex systems perspective when required. This may require training and mentoring of decision makers.

***A spectrum of decision issues:*** For the purposes of this study a distinction must be made among the following categories of contextualised decision issues, namely simple and clear issues, complicated issues, complex issues, and chaotic issues. An instrument is required to differentiate and identify each category. Each category requires a different type of strategy and



leadership to address it effectively. The quality of decisions taken reflects the sophistication of the decision makers to deal with a spectrum of contextualised decision issues.

The implication is that the decision framework needs a mechanism that enables decision makers to differentiate among the different categories of decision issues before an appropriate strategy is employed to address each category. Therefore, decision makers have to be trained in the use of the framework and its constituent parts.

**Numerous stakeholders:** Numerous stakeholders (i.e., interested, involved, and affected parties) need to be considered in the decision processes of the municipality. Human stakeholders include at least the decision makers, the affected parties (e.g., residents, taxpayers, other spheres of government, suppliers, customers, funders, consultants), entities that govern the decision processes (e.g., legislators, audit committees, and auditors) and numerous other parties from each of the PESTLE domains. Human stakeholders also include future generations, future municipal councils and administrations, future communities, taxpayers and voters. Non-human 'stakeholders' include nature, the current and future natural environment with all its integrated systems, such as weather and climate systems, ecological systems on land, in water bodies, and the atmosphere, biospheres, and *fauna* and *flora*. Other non-human stakeholders include the economy, politics, technology, and society at large.

The implication is that the decision framework must sensitise decision makers to the entire spectrum of stakeholders in different domains and the interdependencies among them.

**Municipal context:** The framework must be compatible with the internal context of the municipality because the framework has to be institutionalised within the current operations of the administration and the political structures. Therefore, the framework must fit into the hierarchy of planning cycles, decision processes, and organisational structures. Ideally, decision makers and users of the framework should understand the complexity paradigm to appreciate the potential value of the framework.

The implications are that the framework should be institutionalised with care. Institutionalisation will probably require that the council formally adopts and implements the framework. This will require decision makers and users of the framework to be trained in its use.

**Contingencies of a VUCA world:** Contingencies that affect decision making emerge from the multiple dimensions of space and time. The spatial domains include the PESTLE domains, the different visible and invisible levels of causality, systemic networks of causality and interdependence, hierarchies, patterns, feedback loops, and much more. The temporal domain considers the past, the present, current futures and possible futures, desired and preferred futures, potential and probable futures, path-dependency, anticipation and an awareness of time.

The implications are that the framework must sensitise decision makers to the dimensions of space and time in which they take decisions, and it has to provide complimentary frameworks that decision makers can apply to conceptualise these domains. Decision makers' temporal and spatial awareness may have to be developed through training and mentoring.

A further implication is that decision makers need a minimum capacity to comprehend the nature of complex systems and their unpredictable behaviours, and they must know how to identify and approach complex decision issues. The framework must accommodate inputs from environmental scanning, scenario planning and foresight exercises.

**A formal decision process:** The formal decision process constitutes only a fraction of the framework that contains it. Municipal decisions are taken in terms of the strategic aims and objectives of local government as documented in the IDP and in legislation. The decision

process relates to all the other aspects of the framework discussed above. As a result, the decision process is also affected directly and indirectly by each of these aspects. Therefore, the decision process and the containing decision framework form an integrated whole.

The implications are that the proposed framework has to be implemented as a whole. Councillors and officials must be trained in the basic concepts of complex systems thinking, environmental scanning, scenario planning, and foresight, in order to utilise the decision framework optimally.

The components of the framework are considered next.

#### **7.4.2 Components of the framework**

The decision framework integrates longer term strategies that are based on strategic foresight and the vision of the municipality with short-term planning and day-to-day decision making. Foresight is informed by environmental scanning and interpretation of the scanned information. Foresight considers global and local trends in contextual variables within all the PESTLE domains and at different levels of causality. Megatrends and early signals of possible or probable breakthroughs, events or inventions are considered when strategies are developed. Robust and adaptive strategies that consider contextual complexity over the longer term inform lower-level plans with a five-year planning horizon. These plans are captured in the IDP and related plans. Short-term planning and day-to-day decision making are informed by the IDP.

The decision framework is specifically designed to address complex decision issues, but it can also deal with simple and clear issues, and complicated, or chaotic issues. Properly structured and well-defined decision issues can be delegated to relevant decision-making structures in the municipality. Decision issues with a chaotic nature must be framed as such before immediate action is taken to address them. The framework is mainly designed to address complex issues. Therefore, the specific focus below is on aspects of the framework that are required to address complex decision issues. Only the minimum required components of the framework would be activated when simple and clear, or complicated, or chaotic decision issues are addressed.

The proposed framework consists of the following interconnected components:

- Environmental scanning
- Strategic foresight
- Strategy development and planning
- Preparation of the IDP, KPAs, KPIs, and budgets
- Contingencies and contextual variables
- Decision-making process, implementation, impact
- Governance of the decision process
- Feedback and learning

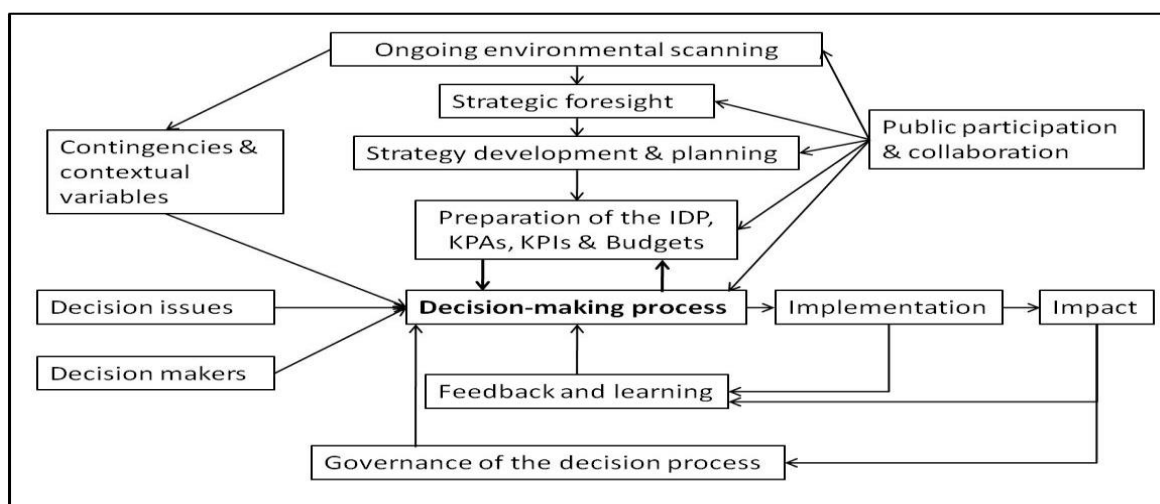
Each component will be discussed further in terms of its constituent parts. These parts may consist of phases, processes, or action steps, or combinations thereof. The graphic presentation of the framework in Figure 7.1 depicts the main components of the framework and their relationship with the formal decision-making process. Important aspects of each component are discussed briefly in the sub-sections that follow.

The formal decision process is informed by several factors that include the IDP. The IDP contains the results of environmental scanning, strategic foresight, and strategy development and planning. This very important collaborative process of developing an IDP is discussed first. The strategic implications of the IDP for the day-to-day decision-making processes of the municipality can be understood in terms of Etzioni's "mixed scanning" model of decision making (Etzioni, 1967; 1986). The IDP represents the "higher order, fundamental decision

making” that sets the basic long-term direction and defines the context whereas the decision process itself takes care of the “lower order, incremental decisions” that facilitate either implementation of fundamental decisions, or result in fundamental decisions (Etzioni, 1967:385; 1986:8). The idea is that decision makers mix both perspectives but that they first consider the major issues and alternatives “to prevent the shortsightedness of incrementalism” (Rainey, 2009:185).

#### 7.4.2.1 Environmental scanning

Environmental scanning constitutes phase one of the strategic foresight process and provides the inputs for it (Horton, 1999; Voros, 2003). Environmental scanning is a continuous process of monitoring change in the contextual and task environments of the municipality. It provides early warning of new developments, it identifies important trends, ‘landmark events’ and other issues of potential importance (May, 1996). Active scanning of the PESTLE dimensions of the contextual environment provides early warning of change. It enhances “abilities to understand, anticipate, and respond to the threats and opportunities posed by changes in the external environment” (Morrison, 1996:816). The goal is to identify a combination of “basic or fundamental driving forces that suggest the most likely future” and potential change-drivers that may introduce alternative future outcomes (Bishop & Hines, 2012:58). Scanning provides strategic intelligence that can be used for strategy setting and planning. The relation between environmental scanning, strategic foresight, and strategy development and planning is depicted in Figure 7.2.



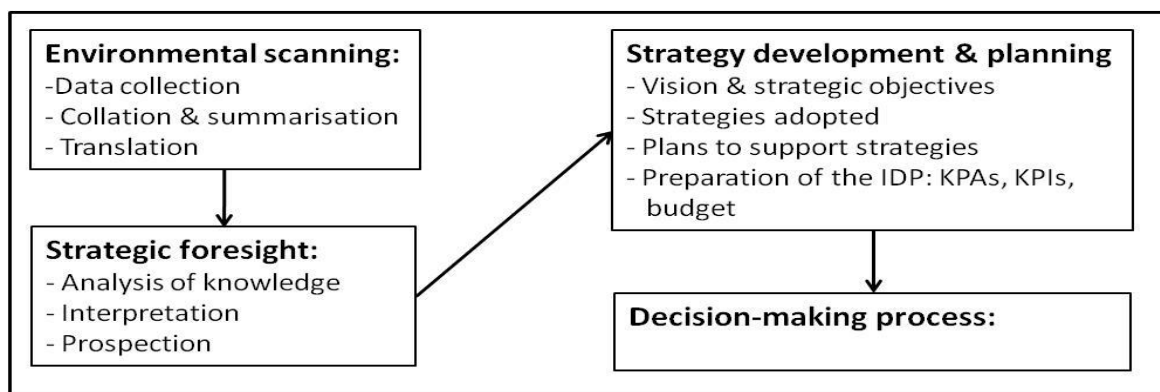
Source: Candidate WTB Janse van Rensburg

**Figure 7-1 A Conceptual framework for municipal decision making**

Environmental scanning consists of three basic processes, namely *collection*, *collation and summarisation*, and *translation* of available data and information.

**Collection:** Data and information from all the PESTLE dimensions of the external and internal environments of the municipality (as discussed in Chapter 4) are collected on an ongoing basis from a wide range of sources. Ideally, decision makers should be involved in the process “in order to generate some sense of ownership and credibility of the resulting knowledge” (Horton, 1999:7). In the case of the Hessequa municipality, the huge capacity of ‘grey power’ currently available within the local communities should be harnessed to assist with the collection of environmental data. In fact, the ‘grey power’ advisory group and various advisory forums

demonstrated the capacity of residents to serve in this capacity during the 2011–2016 term (Prins, 2015).



Source: Candidate WTB Janse van Rensburg

**Figure 7-2 The relation between environmental scanning, strategic foresight, and strategy development and planning**

**Collation and summarisation:** The large volume of data and information must be collated to reduce its volume and to make it relevant, focused, and presentable. Environmental scanning produces knowledge that is used as input to the strategic foresight process that follows (Horton, 1999; Voros, 2003). The summarised information and knowledge represent ‘inbound change’, that is ‘change coming at one from the external world’ (Bishop & Hines, 2012:55).

**Translation:** The summarised knowledge produced by environmental scanning originates from different disciplinary and knowledge domains. Therefore, it must be converted into a format that makes sense for the participants. This knowledge must be ‘packaged’ into a language that reflects the municipal slant and terminology. Participants need to receive this knowledge in simple, understandable language that allows them to participate effectively in the foresight process.

#### 7.4.2.2 Strategic foresight

Strategic foresight consists of three process steps along a knowledge value chain. This value chain transforms scanned data and information resulting from environmental scanning into knowledge. Strategic foresight transforms this knowledge into understanding through the processes of *analysis*, *interpretation* and “*prospection*” (Horton, 1999; Voros, 2003).

**Analysis:** The analysis process step aims to find out ‘what seems to be happening’ based on a first cycle of analysis. This analysis is at a “surface level” in terms of CLA terminology (Inayatullah, 2004; 2014). Important trends, events, early warning signals, and indications of possible changes, risks, and opportunities are analysed almost in a superficial manner. The results of this analysis are fed into the second step of interpretation.

**Interpretation:** At the heart of the foresight process is the more detailed interpretation of the available knowledge. Participants need to interpret the translated knowledge in order to develop an in-depth understanding of and insight into the specific implications of environmental changes for the municipality. Essentially, participants need to answer the following questions (Horton, 1999; Voros, 2003):

- What does this really mean for the municipality?
- What are the future implications for the municipality?

In order to answer these questions, one has to delve deeper beneath the surface. The methods of CLA (Inayatullah, 2004; 2014), systems thinking (Dostal *et al.*, 2005; Bishop & Hines, 2012; Capra & Luisi, 2014), complexity thinking (Preiser *et al.*, 2018) and the integral framework (Wilber, 2007; Slaughter, 2001; 2002; Esbjörn-Hargens, 2009), can be applied to understand the deeper structures of environmental changes contained in the available knowledge base. The thorough understanding that emerges from this type of analysis links events and trends 'on the surface' with the underlying systems that produce phenomena at the surface over time. It also links these systems with the mental models, myths, worldviews, and cultural aspects that inform the systems.

An important output of the interpretation process is that participants would understand the nature and complexity of environmental changes and its implications for the municipality in the longer term. Participants should also develop a shared vocabulary of the applied methods and processes. Armed with this understanding, participants would be ready to enter the creative and innovative process of 'prospection'.

**Prospection:** Prospection is defined as "the activity of purposefully looking forward to create forward views". The aim of this activity is to examine how alternative futures may unfold (Voros, 2003; Bishop & Hines, 2012). Other aims are to reduce the probability and impact of any future surprises and to sensitise mental models for what may happen (Bishop & Hines, 2012:58). Several techniques are available to facilitate this process, namely scenario planning, visioning of desired or preferred futures, influence diagrams, or causal loop diagrams. A collaborative and participative process involving external stakeholders is employed to develop different perspectives of possible futures for the municipality.

The foresight process generates several outputs (Horton, 1999; Slaughter, 2001; 2002; Voros, 2003). The tangible outputs of the foresight process include the vision of the council, a range of strategic options available to the municipality to achieve its vision, and a few plausible scenarios or other frameworks to make sense of the contextual complexity. Tangible outputs are documented and shared as reports and presentations and are communicated to a wider audience of participants in the decision processes through workshops and multimedia. Intangible outputs include better insight and more sophisticated thinking engendered by the interpretation and prospection steps, a common understanding of the dynamic interactions between the municipality and its VUCA context, and a new way of talking about foresight and decision making. Participants in the process develop ownership and commitment through their involvement. These insights and an expanded understanding of strategic options would be applied to inform the process of strategy development and planning that follows.

#### **7.4.2.3 Strategy development and planning**

Strategy development and planning constitutes an integral part of the process to develop the IDP, KPAs, KPIs, and the budget. However, for the purposes of this discussion, these two components are separated.

The output of the strategic foresight process only has real value if it leads to action through strategy development and planning. A strategy offers a flexible and adaptable approach to address dynamic decision issues because it can modify itself depending on information furnished *en route* (Morin, 2008:63). Morin adds that strategy is the art of working with uncertainty (Morin, 2008:96).

Strategy development and planning has to do with the "outbound change", that is the change that one seeks to effect upon the world based on one's understanding of the nature of the inbound change (Bishop & Hines, 2012:55). These authors define strategy development and planning as the bridge between the vision and action. The goal of strategic planning is to translate the vision and alternative future possibilities into a strategy. Just as there are alternative futures, there are alternative ways of achieving them (p. 59).

Strategy development and planning aims to answer the following question: What can be done about the implications of the foresight work?

The detailed answer to this question is contained in the IDP in terms of strategic options to achieve the vision and broad objectives, multiple contingency plans, and adaptive strategies. Strategic planning for the municipality is captured in the IDP as prescribed in Chapter 5 of the MSA. Section 35(1.a) of this act describes the status of the IDP as follows:

An integrated development plan adopted by the council of a municipality is the principal strategic planning instrument which guides and informs all planning and development, and all decisions regarding planning, management and development, in the municipality.

Section 36 of the MSA confirms the importance of Section 35 as follows:

A municipality must give effect to its integrated development plan and conduct its affairs in a manner which is consistent with its integrated development plan.

Other important prescriptions of the MSA are the following: Section 25(c) stipulates that the IDP, as the single, inclusive and strategic plan for the development of the municipality. It forms the policy framework and general basis on which annual budgets must be based. Section 26 refers to core components of the IDP which include the municipal council's vision for the long-term development of the municipality, the council's development priorities and objectives for its elected term, the council's development strategies, the council's operational strategies, disaster management plans, and a financial plan, which must include a budget projection for at least the next three years. Section 34 of the MSA prescribes that the IDP must be reviewed and amended annually. Section 16(1.a) stipulates that the municipality must encourage, and create conditions for, the local community to participate in the affairs of the municipality, including in the preparation, implementation and review of its integrated development plan.

The implications of these prescriptions are that the IDP must be updated annually based on new information. Therefore, the process of active environmental scanning (ideally) must be an ongoing process that informs strategic foresight, and strategy development and planning on a continuous basis. Continuous scanning can also indicate which current contextual variables have to be considered in the day-to-day decision-making process. The requirement that a financial plan and a three-year budget must be included in the IDP implies that planning must be done in sufficient detail to inform such a budget and plan. In short, the IDP contains the vision and objectives of the council, the strategies to realise these objectives, and more detailed plans in support of the strategies, together with the approved medium-term budget. Approved strategies and plans constitute the basis of the IDP.

#### ***7.4.2.4 Preparation of the integrated development plan, key performance areas, key performance indicators and budgets***

The IDP is informed by the preceding interconnected components of the decision framework, namely environmental scanning, strategic foresight, and strategy development and planning. The format of the IDP makes provision for the inclusion of summarised versions of the outputs of each of these three processes.

Two important provisions of the MSA are relevant here. First, community participation in the preparation, implementation and review of the IDP, and a performance management system are both compulsory (Section 16(1.a) of the MSA). Second, the IDP informs the performance management system of the municipality and the governance of municipal performance in terms of its KPIs (Section 41 and Section 42 of the MSA).

The IDP, being the "principal strategic planning instrument which guides and informs all planning and development, and all decisions with regard to planning, management and

development in the municipality”, has a determining influence on the decision-making process of the municipality.

#### **7.4.2.5 Contingencies and contextual variables**

Findings from Chapter 4 and Chapter 5 indicate that various contingencies and situational factors influence the decision process. Nutt and Wilson (2010:16-17) identify two kinds of contingencies, namely *content* and *context*. *Content* identifies the type of decision and *context* identifies the environment in which decisions are made. Chapter 4 contains the empirical findings regarding the nature of the contextual environment within which decisions are made. The complex nature of this environment and the behaviours of decision makers are identified as important contextual variables and contingencies. Chapter 5 focuses more specifically on the contingencies associated with the decision process and the types of decision issues encountered (see Section 5.2). The literature review (in Chapter 3) indicated that both the type of leadership and governance models may constitute important contingent factors to consider.

In this study, four categories of decision issues have been distinguished, namely simple and clear decision issues, complicated issues, complex issues, and chaotic decision issues (Snowden & Boone, 2007). No distinction is made between strategic and non-strategic decisions.

A distinction is made between internal environment and external environment. Nutt and Wilson (2010) refer to internal factors such as surprise, confusion, threat, organisational features, resistance to change, importance of the decision, and attributes of the decision maker (e.g., willingness to take risks, creativity, decision style, tolerance for ambiguity, intelligence, power, need for control, experience, values and education) that may influence the decision process. External factors refer to factors in the external environment, for example, economic conditions. The inclusion of contingency factors in the decision framework is to sensitise decision makers to the potential influence of these factors on the decision process and the decision outcomes. Contingency factors tend to contribute to the complexity of the decision process.

#### **7.4.2.6 Decision making process**

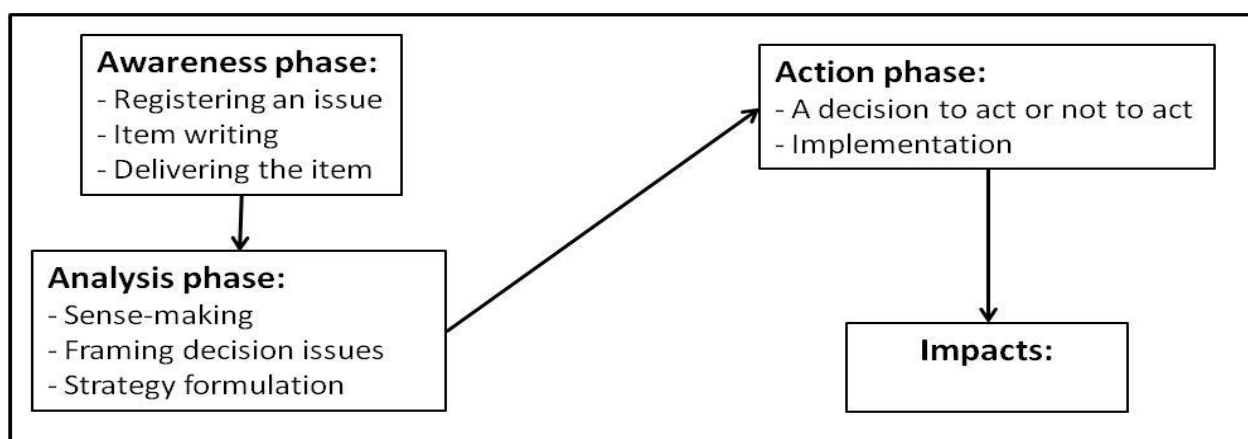
At the core of the decision framework is the *decision-making process*. This process is embedded within the VUCA contextual environment of the municipality as discussed in Chapter 4. The IDP provides the strategic direction and overall objectives for the decision process. Decisions that are implemented have impacts in space over time. The decision process is entangled with various other processes that have a direct or indirect effect on the decision-making process (see Section 5.2). The decision process has to deal with the contingencies, contextual variables, and decision issues originating in the contextual environment. At the same time the decision process has to be governed according to applicable legislation, regulations, and other prescriptions. Feedback and learning from actual performance of implemented decisions also influence the decision process. A spectrum of decision issues enters the municipal decision-making system and activates the decision processes. Decision makers with their diverse aims, objectives and perspectives have a strong influence on the decision process. A spectrum of collaborators, stakeholders, and residents participate in the decision-making process and the preparation of the IDP. The analysis in Chapter 6 revealed several strengths and weaknesses regarding the adaptive capacity of the municipality. These strengths and weaknesses are considered in the framework as well. Important aspects of the decision process are discussed next.

**Decision issues:** The theme *issues for decision* was discussed in Section 5.2 in relation to the main theme *the formal decision-making process*. Decision issues that are registered at the municipality activate the decision-making process.

**Decision makers:** Morgan (2006:404) states that, strictly speaking, it is not organisations that think and act, but rather its members, “the key people involved” in the organisation. Therefore, the framework for decision making and its institutionalisation should carefully consider the key individuals to be involved in the decision-making processes. Leaders as decision makers play key roles in the decision processes. Leadership roles are influenced, among others, by their aims and objectives, their power and influence, and their decision-making skills and knowledge as discussed in the literature review in Chapter 3. Behaviours of decision makers within the political arena of the municipality were discussed in Section 4.4.3. The important aspect of contextual awareness of current decision makers was examined in Section 4.4.4. The temporal and spatial awareness, future consciousness, and awareness of complexity of decision makers were analysed as contingent factors in the municipal context. The contextual awareness of decision makers, their decision-making skills, and their ability to deal with complexity are likely to have a huge influence on the effectiveness of the decision process.

**Decision-making process:** Empirical findings regarding the main theme *the formal decision-making process* as documented in Section 5.2.1 inform this component of the decision framework.

The various phases and process steps of the decision process are illustrated in Figure 7.3. The decision process consists of three basic phases, namely an *awareness* phase, an *analysis* phase, and an *action* phase (Noorderhaven, 1995; Keast & Towler, 2009). For the purposes of this framework, the *action* phase is split up in two components, namely *a decision to act or not to act* and *implementation*. A decision to act or not to act links the *analysis* phase with the *implementation* phase.



Source: Noorderhaven (1995), and Keast and Towler (2009).

**Figure 7-3 Phases of the decision-making process**

**Awareness phase:** The awareness phase consists of three process steps, namely *registering an issue*, *item writing*, and *delivering the item*. **Registering an item:** During the *awareness* phase, a decision issue is identified and recognised by the municipal manager, an official, or a political structure who forwards the decision issue to a decision forum based on an initial and an intuitive evaluation of the nature of the issue. **Item writing:** An item writer is appointed to collect and to collate relevant data and contextual information. Data may be collected through workshops, consultants, community meetings, the printed media, the internet, or electronic media. The item writer then processes the data and prepares the item, which consists of a comprehensive report that captures the relevant aspects of the decision issue in its applicable context. **Delivering the item:** The report and supporting documentation are forwarded to a decision forum, such as the portfolio committee, EMC or Council, for analysis.



**Analysis phase:** The *analysis* phase consists of the following interrelated process steps, namely *sense-making*, *framing decision issues* and *strategy formulation*. During this phase decision makers are “using data toward a shared understanding of problem areas so as to generate the right action” (Rihani, 2002:105; Greenberg *et al.*, 2021:30). **Sense-making:** The aim of sense-making is to understand the decision issue in relation to the different contexts that apply from different perspectives. All the dimensions of the problem have to be identified including the variable factors that may interact with the issue in focus (NRC, 2013). The PESTLE framework, CLA, an integral perspective, influence diagrams, a systems perspective and a complexity perspective can be applied to develop an in-depth understanding of the decision issue (see Chapter 3 for details about these methods). In addition, the decision issue has to be understood within the context of the current reality of the municipality, the scenarios that apply and the strategic plan as documented in the IDP. Other important aspects to consider include the longer-term effects, costs, benefits, advantages, and disadvantages of taking action versus not taking action.

**Framing decision issues:** The aim of framing a decision issue is to find out what kind of a strategy will be capable to address the decision issue in terms of the law of requisite variety and the law of complexity (Boisot & McKelvey, 2011). The Cynefin framework provides a mechanism to frame decision issues (Snowden & Boone, 2007; Greenberg & Bertsch, 2021). Decision issues can be framed as simple and clear, complicated, complex, or chaotic. Table 3.4 and Table 3.5 can be used as a mechanism to categorise decision issues as simple and clear, complicated, complex, or chaotic. Accurate framing of the contextualised decision issue will significantly reduce the risk of committing a decision error (Boal & Meckler, 2010). However, the character and nature of some decision issues may change dramatically as a result of contextual changes during the process of decision making and implementation of action steps (Kurtz & Snowden, 2003). In such cases the decision issue has to be reframed and strategies to address it have to be devised through an iterative or adaptive process.

**Strategy formulation:** Different leadership and management strategies are applied to address the four categories of contextualised decision issues (Grint, 2005; Snowden & Boone, 2007; Poli, 2013; Greenberg & Bertsch, 2021). *Simple and clear decision issues* can be delegated according to standard operating procedures and the delegation system. Best practices can be applied to address this category of issues. *Complicated decision issues* require the involvement of experts to investigate different possible solutions based on “good practice” rather than “best practice” (Snowden *et al.*, 2007). Experts *sense* data coming from complicated systems, then they *analyse* that data before *responding* according to expert knowledge or interpretation of that analysis (Kurtz & Snowden, 2003; Snowden & Boone, 2007). Complicated issues can be studied through their structural decomposition and by investigating the linear relationships between the parts (Poli, 2013). Complicated issues and problems can be solved effectively (Dostal *et al.*, 2005). Most of the properly structured complicated decision issues can be delegated to specialists in the respective municipal departments.

*Complex decision issues* require a strategy of a different kind and type (Snowden & Boone, 2007; Poli, 2013). Complex systems are studied and understood through functional analysis, by studying the patterns of behaviours and activities exerted by the whole system at a systems level. One cannot solve complex issues, but one may *probe* them in order to *sense* changed behaviours in order to formulate an appropriate *response*. Several strategies are recommended to address complex decision issues, adaptive challenges, and wicked problems within a domain of complexity. One strategy is to create adaptive spaces. These are environments that stimulate creativity, innovation, collaboration, experimentation, dialogue, learning, and free communication (Grint, 2005; Snowden & Boone, 2007; Van Loon & Van Dijk, 2015; Arena & Uhl-Bien, 2016; Arena *et al.*, 2017; Uhl-Bien & Arena, 2018;). Productive adaptive spaces enhance the adaptive capacity of the municipality and create environments where complex decision issues can be addressed effectively. It is important to involve

participants with a spectrum of diverse perspectives and knowledge bases in the adaptive spaces.

Another strategy to address complex decision issues is to make use of action learning and cycles of iterative learning processes, as discussed in Section 3.7.8. Behaviour patterns of complex systems can also be studied through experimentation and cycles of probing, sensing and responding (Kolb, 1983; Senge, 2006; Snowden & Boone, 2007; Mitleton-Kelly & Ramalingam, 2011; Schwella, 2014). Complex systems can also be influenced through the creation of attractor basins that stimulate desired system behaviours (Capra & Luisi, 2014). An attractor basin may be created through incentives and conditions that promote desired behaviour patterns.

*Chaotic decision issues* are normally associated with crises that demand immediate, firm action to re-establish order. Under such critical conditions, a command-and-control strategy is appropriate (Grint, 2005; Snowden & Boone, 2007). Clear, quick and direct communication is required. Leaders should try to transform a chaotic situation into a complex situation so that patterns can be identified and utilised to get the situation under control.

Once a decision issue has been framed reasonably accurately, appropriate action can be initiated as indicated above. The link between the *analysis phase* and the *action phase* is a decision to proceed with implementation of the decision.

**Action phase:** The action phase consists of two process steps, namely *a decision to act or not to act* (which concludes the preceding awareness and analysis phases) and *implementation*.

**A decision to act or not to act:** A decision to act will initiate the implementation process. A decision not to act will terminate the decision process for the municipality. Quite often a municipal decision would require no further action from the municipality itself because the decision would be to allow other parties to implement their projects. This category of decisions is not discussed further. In other cases, a decision to implement is followed by the physical activity of implementation by the municipality, or by another party on behalf of the municipality. Although the implementation step is not part of the focus of this study, it is briefly described here because feedback loops connect the implementation and impact steps with the decision process itself.

**Implementation:** Decisions implemented on behalf of the municipality are normally implemented by the directorate involved in terms of the delegation system. Alternatively, contractors or other parties are appointed to implement decisions on behalf of the municipality or the directorate. Often supply chain (SC) plays a key supporting role in the implementation of decisions. SC defines the scope of a project, initiates a tender process, evaluates tenders and appoints contractors to implement projects for the municipality. Successful bidders then implement the decisions or projects for the municipality. In cases where the municipality implements its own projects, the SC collaborates with the departments involved. Once projects have been implemented their outputs and outcomes impact upon the affected environments.

**Impact:** Implemented decisions or projects have widespread implications through space and time in some or all the PESTLE dimensions. It is difficult to identify and to quantify these impacts (Nutt & Wilson, 2010:17). Impacts may also be measured in terms of the “triple bottom line” effects on environment, the economy, and people (Elkington, 1994). It is important to measure actual favourable and unfavourable impacts and to compare these measurements with the initial planned or expected impacts where possible. The results may be very useful to inform a learning process that feeds back into the decision process. Feedback can be used very effectively to capture learning and to inform governance processes.

### 7.4.2.7 Governance of the decision process

The decision process is governed through a hierarchy of governance processes that includes self-governance, internal audit committees, and the AG at the top of the hierarchy. These governance processes are discussed in Chapter 5 where the decision process is terminated by a decision to implement or not to implement. The framework for decision-making contains an expanded version of the decision process which now includes the additional process steps of *implementation* and *impact*. (See Figure 7.1.) As a result, the governance process has to be expanded to address the entire decision process, including the critical steps of *implementation* and *impact*. Feedback processes from the *implementation* and *impact* steps inform governance of the decision process.

Several laws, codes, principles, and standards are used for governance of the decision process and related processes as indicated earlier. The MFMA regulates the financial dimension of the decision processes. This includes budgets and budget processes as well as the SC processes associated with the implementation of projects. Chapter 6 of the MSA establishes the municipal performance management system. This system must be aligned with “the priorities, objectives, indicators and targets contained in its integrated development plan ... [and it must] promote a culture of performance management among its political structures, political office bearers and councillors and in its administration”. A further requirement of Section 39 of the MSA states that the municipality must “administer its affairs in an economical, effective, efficient and accountable manner”. Section 41 addresses the core components of the performance management system including the following:

A municipality must ... set appropriate key performance indicators as a yardstick for measuring performance, including outcomes and impact, with regard to the municipality’s development priorities and objectives set out in its integrated development plan; set measurable performance targets ... [and] monitor performance; and measure and review performance at least once a year; ... take steps to improve performance.

Section 42 states the following:

A municipality ... must involve the local community in the development, implementation and review of the municipality’s performance management system, and, in particular, allow the community to participate in the setting of appropriate key performance indicators and performance targets for the municipality.

Subsequent sections of Chapter 6 of the MSA prescribe that both the KPIs and the respective targets must be made public. The act also makes provision for the auditing of the performance results through internal auditors and the AG. Performance reports and measures to improve performance have to be prepared and published as part of the annual report.

Key points contained in the MSA and MFMA that are relevant for the decision framework are the following:

- Public participation is required for the development of the strategies and plans contained in the IDP.
- Public participation is required for the development, implementation and review of the performance management system.
- The municipality must allow communities to participate in the setting of KPIs and performance targets for the municipality.
- Section 41 of the MSA stipulates that performance management must address “outcomes and impact”.

The implication is that the governance system, which includes the performance management system, must measure the effectiveness and efficiency of the implementation of decisions as

well as the outcomes and impact of decisions (see Figure 7.1). A further implication is that a proper feedback process should be established between “outcomes and impact” and the decision process, the performance management system and the IDP<sup>6</sup>.

Another feedback process may inform OL and capacity building.

#### **7.4.2.8 Feedback and learning**

The framework for decision making shown in Figure 7.1 contains only two feedback loops for illustrative purposes rather than many loops. This is for reasons of diagrammatic simplicity and not due to conceptual omission. From a systems perspective feedback loops connect each process step with all (or most of) the preceding or interrelated process steps. Some of these feedback loops can be used very effectively to inform learning and innovation, to improve processes, to adjust the performance management system, or to regulate the governance system.

An important feature of the decision framework is the fact that some sub-processes are cyclical and repetitive. The preparation and review of the IDP, the corresponding performance management agreements, KPI sets and performance targets, the annual budgets and the multi-year rolling budgets, annual reports and performance reviews are all cyclical with one-year frequencies. Each cycle can be perceived and utilised as an iterative attempt to improve the performance of the integrated decision-making system.

Planning and implementation in the complex domain require an “adaptive incrementalist approach” (Swanepoel & De Beer, 2011:195). Incrementalism assumes that uncertainty is a given fact. Planning and implementation are entangled with learning, reflection, replanning, and implementation. Enhancement of the entire decision-making framework can be perceived as “an internal adjustment procedure in an ongoing, dynamic process” that assesses results on a continuous basis, which ensures participation by all interested groups, and that applies multiple perspectives (Teige *et al.*, 1977:239).

The municipality can be used very effectively as a social laboratory serving as a platform for team learning (Senge *et al.*, 2014). Social laboratories (or social labs) are “platforms for addressing complex social challenges” (Hassan, 2014:57). The core characteristics of social labs are the following: They are *social* groups consisting of diverse participants from different sectors. They are *experimental* and use iterative approaches to prototype interventions on an ongoing basis. They are *systemic* and pursue a whole-systems approach to address challenges.

Learning and innovation could also be facilitated through the establishment of adaptive spaces (Arena & Uhl-Bien, 2016; Arena *et al.*, 2017; Uhl-Bien & Arena, 2018). A learning governance model and action learning can also be used to enhance decision making by adapting and tuning the framework (see Section 3.7.8). The experiential learning cycle of Kolb (1983:31, 38) can also be used as a simple method to enhance decision making. Kolb defines learning as a holistic process of adaptation to the world and as the process whereby knowledge is created through the transformation of experience. This process consists of four phases, namely concrete experience, reflective observation, abstract conceptualisation, and active experimentation.

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<sup>6</sup> The current (2020-2021) set of KPIs and corresponding targets published in the five annual reports of the 2016–2021 term require a fundamental review. Many KPIs are focused on administrative inputs and not on ‘outcomes and impact’ that benefit communities. The current design of the performance management system does not facilitate improvement in performance.

Feedback processes, the governing function, and the capacity to learn transform the decision-making system of the municipality, including all the participants and stakeholders, into a self-organising and self-regulating system that can continuously evaluate and improve its own performance. But before this can happen, the municipal council has to approve and adopt the framework and the administration has to take ownership thereof.

## 7.5 Institutionalisation of the framework

Implementation and institutionalisation of the decision framework can be perceived from a Biomatrix systems perspective (Dostal *et al.*, 2005). This perspective is summarised below before practical action steps are proposed for the implementation and institutionalisation of the framework. Each aspect of the municipal context in which the framework has to be embedded is considered briefly. This Biomatrix perspective is based on the empirical findings and observations made during the study.

**Environment:** The proposed framework will be implemented in a successful bureaucratic organisation. Although current political and administrative leaders have spent many years in a bureaucratic environment, they have indicated that they would appreciate and embrace innovative ways to improve the performance of the municipality even further. Officials and councillors have access to numerous institutions and knowledgeable people that can participate in the implementation and operation of the proposed decision framework. The municipality is confronted by numerous new and adaptive challenges in each PESTLE domain and needs new ways to deal with the complexity involved.

**Ethos:** The municipal ethos is inspired by bureaucratic principles and high ethical standards. The municipality has maintained high levels of ethical and moral standards over many years. Municipal governance is conducted according to policies and legal prescriptions. Current thinking maintains that receiving a clean audit report from the AG is the ultimate indicator of “good and clean” overall municipal performance. As a result, decision making is based on a risk-averse and conservative approach. Minimum legal and policy requirements are being met. Provision is being made for some conservative, low-risk or no-risk innovation and experimentation. Councillors and officials are maintaining an “open-door” policy and are welcoming proposals to enhance performance. Some officials have a higher tolerance for risk-taking than others. Both officials and councillors appreciate a collaborative and participatory work environment. They are welcoming new ideas. Current assumptions regarding the mythical importance of a clean audit report have to be challenged.

**Aims:** The aim of the municipality is to serve its residents to the best of its ability within the constraints that apply. A stated secondary aim is to mobilise public participation in the activities of the municipality, especially in the development of the IDP. Past efforts to stimulate public participation in municipal affairs have been ineffective. A shared aim is to improve performance of all its directorates and all its processes.

**Processes:** Current processes to take decisions, to develop the basic IDP and related performance management systems and budgets are existing. They are functioning efficiently but not effectively. Opportunities for the public to participate in the various activities of the municipality are created but are not utilised optimally. Processes for public participation have to be redesigned based on collaboration and design thinking principles (Mintrom & Luetjens, 2016; Lewis *et al.*, 2020). The scope of some existing processes will need to be expanded. A much wider spectrum of contextual variables and trends should be included in the IDP. The planning horizon should extend further into the future. The depth and breadth of environmental scanning and contextual analyses should be expanded, and formal foresight processes should be introduced. Unproductive and ineffective aspects of the current performance management system need to be transformed into an output-focused and value-adding mechanism to leverage desired behaviours.

**Structure:** Most of the basic municipal structures required to support and contain the processes of the proposed decision framework already exist. These structures have to be expanded or complemented through collaborative forums and advisory forums involving external participants in environmental scanning, foresight processes, development of the IDP, and improvement of performance management systems. Much more can be done to establish creative and adaptive spaces to address the complex challenges facing the municipality.

**Resources:** The job descriptions of officials occupying current positions can be expanded to accommodate the recommendations involved in the implementation of the framework. Section 17 of the MSA provides for the establishment of advisory forums that may assist with strategy development and planning, the development of the IDP, the performance management system and budgets. The unlimited and unexploited latent potential of ‘grey power’ of retired and knowledgeable people can also be harnessed through advisory forums. Provision may be made in budgets for the (partial) funding of innovation, experimentation, and adaptive spaces, in terms of Section 12 of the MFMA.

**Governance:** Governance of the proposed decision framework can be done within the scope of existing legislative frameworks that apply to the compilation of the IDP, budgets, performance management systems, decision making, and related processes. Formal governance structures should allow advisory forums some degree of freedom to govern themselves. Governance of the performance management system should incorporate the contributions of knowledgeable residents and objective, external participants.

It is within this context that the proposed decision framework is to be implemented and institutionalised. Institutionalisation of the framework is believed to be a critical precondition for harnessing the usefulness of the framework. The following process steps may be required to integrate the framework formally into the current operating structures and processes of the municipality:

- The framework has to be presented to the municipal council. Its usefulness and value must be understood by decision makers. Minor adjustments may have to be made to the framework to fit it into current structures and processes.
- The municipal council has to approve the implementation of the entire integrated framework under the supervision of a senior champion, preferably the municipal manager.
- The administration has to formally implement the framework as an integrated system.
- Implementation of the decision framework has to become a KPA of a director, probably the director accountable for corporate affairs.
- Public participation in some of the processes is a critical success factor and a legal obligation. The municipality has to facilitate a process to mobilise capable people to participate in the relevant processes.

The current starting conditions or initial conditions can either facilitate or hamper the process to implement the framework (Ansell & Gash, 2007:9). These conditions may include power imbalances between decision makers, incentives or aims and other motives that influence the process, and a history of collaboration or conflict among decision makers. Factors that may facilitate and enhance the implementation of the framework are the following:

- Almost all the interviewees wholeheartedly supported and welcomed the study at the time it was done (towards the end of the 2016–2021 term of office). Most of these interviewees, including the mayor, speaker, four of the directors, and all the senior officials interviewed are still employed by the municipality (July 2022). (The municipal manager has retired, and one director has passed away.)

- The public, in particular the Still Bay business chamber, are currently (June 2022) discussing, with the municipality, the urgent need to review the format of the IDP and the performance management system for the same reasons presented in this study.
- The current IDP for 2017–2022 is under review at the time of writing (June 2022). Residents have been requested to provide inputs for a review of the IDP. The research findings of this study will also be provided as inputs during the IDP review process.
- A new and experienced municipal manager was appointed in April 2022. He may be receptive for ways to improve municipal decision making.

Factors that may hinder or delay the implementation of the entire framework are the following:

- Current assumptions and worldviews may hinder the implementation. The proposed framework is based on a systems perspective and a complexity perspective. The current worldview of stakeholders involved in the decision process is primarily based on a reductionist perspective, and it may take time and effort to transform it.
- The bureaucratic structures, ethos, and culture are rigid, inflexible and may resist change.
- The general tendency of people is to resist change (Dostal *et al.*, 2005:164-167). Current role players may tend to protect personal interests and comfort zones. Others may perceive the involvement of new participants as a threat or inconvenience.
- New stakeholders and participants have to be enrolled in the collaborative redesign of the existing decision frameworks, the IDP format, the performance management system, governance processes and learning cycles. This may delay implementation.
- Decision makers within the municipality as well as the new stakeholders and participants will have to be trained in the application of the methods and frameworks proposed.

Morgan states that, strictly speaking, it is not organisations that think and act, but rather its members, “the key people involved” in the organisation (Morgan, 2006:404). Therefore, a presentation of the framework for decision making should consider the key individuals involved in the decision-making processes. Their worldviews, paradigms, assumptions, knowledge, understanding and insight regarding the role of the municipality in a VUCA context may have a determining impact on decision making.

Another critical success factor that may affect the successful implementation of the decision framework is the role of leadership. Leaders have to establish a context and culture within which the processes of collaborative, adaptive, and complexity leadership can flourish (Heifetz, 1994; Heifetz & Laurie, 1997; Heifetz *et al.*, 2009; DuBrin, 2016; Uhl-Bien *et al.*, 2018).

## 7.6 Evaluation of the framework

The proposed conceptual framework for decision making represents a complex systems understanding of the decision-making processes within the municipal context. This framework is evaluated in terms of the following criteria proposed by Gray (2021):

**Comprehensiveness:** The framework is broad and inclusive. It covers the domain of decision making in the sense that it considers contextual variables in the external and the internal environments of the municipality. It addresses foresight, strategic options and plans, budgets, performance management, and participation of stakeholders in relation to the decision process at the core of the framework. It also considers the implementation of decisions, their impacts and feedback effects that enable learning and governance of the decision process. The framework is designed to address simple and clear decision issues, complicated issues, complex issues, and chaotic issues. It is logically and empirically comprehensive.

**Utility:** The framework is useful in the following ways: It illustrates the interdependencies among the different system components of the framework. It demonstrates that the decision-making process itself is guided by the strategic aims and objectives of the municipality included in the IDP. The framework considers a spectrum of variables that impacts the decision process. These include the impact of contextual factors, the nature of decision issues, the capacity of decision makers to frame decision issues and to use the framework, and feedback processes. A mechanism is included to distinguish among the four different categories of contextualised decision issues. Each category is treated in a unique and appropriate manner. Self-governing feedback processes allow participants to reflect on the usefulness of the framework and the need to adapt it.

**Validation:** The framework is supported by a review of literature in Chapter 3, an evaluation of the empirical findings on the municipal context in Chapter 4, an analysis of decision processes of the municipality in Chapter 5, and an assessment of the adaptive capacity of the municipality in Chapter 6. This framework cannot predict the outcome and impact of decisions regarding complex and chaotic issues with any degree of certainty, as can be expected. However, by using this framework, the outcomes of decisions regarding simple and complicated matters can be predicted with a high degree of certainty.

**Clarity:** Although the conceptual framework is actually very simple and compact, it can only be properly understood and appreciated from a systems perspective or a complexity perspective. It does not reduce complexity of ideas and relationships, but it categorises different kinds of decision issues with clarity so that they can be addressed in an appropriate manner. Some components may indeed contain processes, methods or concepts that are not familiar to participants in the decision-making process. However, because decision makers are not currently acquainted with these critical components, processes, methods or concepts they do not use them. As a result, the decision-making system of the municipality is not performing optimally. Training and education will provide the clarity that is required.

**Memorability:** The overall framework simplifies or compresses reality to a large extent. Participants who can deal with the spectrum of decision issues facing them should find it easy to remember the framework. Normally the framework will be used by groups of participants and decision makers who will focus only on small parts of the overall framework at any specific time. It is more important to understand the logic of the framework than to memorise it. Participants need to be trained in the application of the components comprising the framework. Memorability of the framework is enhanced by a system understanding of it.

**Integration:** The framework is internally consistent and coherent to the extent that it reflects legislative prescriptions and guidelines from relevant academic literature. In addition, the design of the framework is informed by empirical findings of this study. The framework reflects the annual planning cycle of the municipality and links this cycle to the day-to-day decision processes, the implementation processes, delayed impacts, and feedback responses. It also integrates the participation and collaboration of stakeholders from outside the municipality into the planning processes and innovation processes. The framework makes provision for learning and governance based on feedback processes. All aspects of the framework will be integrated into existing processes and systems of the municipality.

**Differentiation:** This framework is unique and only applies to Hessequa municipality. It may be possible to extend its use to other SA local municipalities subject to minor adjustments. Some components of the framework may correspond with other decision frameworks.

## 7.7 Summary, conclusions, and recommendations

Most of the findings, lessons learnt, and insights emanating from the study are contained in the conceptual framework and are summarised below. Conclusions, and recommendations regarding the implementation of the framework follow thereafter.



### 7.7.1 Chapter summary

This chapter examined the features of a framework for decision making intended to enhance the capacity of Hessequa municipality to make decisions under conditions of complexity. The framework was informed by a literature review, legislation, and empirical findings in the following manner: The literature review in Chapter 3 confirmed that a complexity paradigm was more appropriate to address complexity than a linear, reductionist approach. The review of the contextual environment in Chapter 4 demonstrated the use and value of different complementary frameworks to scan a VUCA environment. The environmental scan revealed several blind spots in the current IDP. It also emphasised the need for a systems perspective and a complexity perspective to interpret the dynamics of the contextual environment. Frameworks and processes that would address all these gaps were built into the decision framework. The resulting framework would provide methods to expand the breadth, depth and planning horizon of the contextual analyses that informed the IDP.

The empirical findings of Chapter 5 revealed numerous entangled sub-processes and contextual variables that influenced the decision process. The overemphasis on the structural aspects of decision making and the neglect of the process aspects of decision making were exposed in the data analysis. The proposed framework will address this imbalance. It will also consider the various contingencies associated with the context and the content of the decision process.

The framework will address both the strengths and weaknesses of the adaptive capacity of the municipal decision-making system as identified in Chapter 6.

The framework integrates the above aspects in a simple, practical and logical way through interconnected components. It is structured as follows and should be implemented according to this sequence: The first group of components is associated with the longer-term, high-level strategic planning horizon of five years and longer. The second group of components is associated with the legislated annual planning cycle of the municipality. The third group of components is concerned with the day-to-day, run-of-the-mill decision-making practices and processes of the municipality. The second group of components is not only entangled and integrated with the first and third groups of components, but also links the first and third groups of components.

The first group of components addresses the ongoing process of environmental scanning, the development of strategic foresight up to, and beyond, the five-year planning horizon, and the strategy development and planning emerging from the foresight processes. These components culminate in the final IDP. The IDP contains the high-level strategies and plans that inform the annual planning cycles and the day-to-day decision-making process.

The second group of components is concerned with the annual review, adjustments and updating of the IDP, KPAs, KPIs and budgets based on reviews of contextual variables, feedback, and learning. Legislated decision-making processes are employed to update the IDP, KPAs, KPIs, SDBIP and budgets.

The third group of components has the day-to-day formal decision-making process at the centre. The decision-making process is informed by the IDP, KPAs, KPIs, SDBIP and budgets. It includes the implementation stage and considers the impacts of decisions. Various contingencies impact on the decision process. The decision-making process benefits from feedback processes that inform learning and governance. Public participation and collaboration through creative and adaptive spaces also contribute to enhanced decision making. Appropriate decision strategies are matched with decision issues framed as either simple and clear, complicated, complex, or chaotic.

In this way the decision framework integrates contextual analyses, foresight, high-level long-term strategies and plans, annual plans, budgets, performance agreements, decision making processes, contextual variables, participation and collaboration by stakeholders and feedback regarding outcomes of decisions. In another sense, the framework integrates the lessons learned and the findings emanating from this study.

The context within which the framework has to be embedded is considered in terms of the seven aspects of a Biomatrix systems perspective. This perspective identified concerns about, and opportunities for, the institutionalisation of the framework.

The framework can be embedded within the existing basic structures and processes employed by the municipality. However, these structures and processes have to be formally expanded by implementing and integrating new processes, such as innovation, experimentation, environmental scanning, foresight and scenario planning, longer-term strategic planning and collaboration with carefully selected individuals, residents, and institutions. Innovative ways to mobilise public participation in these processes is critical. New structures may include advisory forums consisting of diverse participants and networks that can take ownership of many of these processes in close collaboration with the municipality. These forums need 'light' governance and guidance to align the activities of the municipality with the advisory forums. More creative and adaptive spaces are required to address day-to-day issues of a complex nature.

Critical success factors for the institutionalisation of the framework include a critical review of current assumptions and worldviews of decision makers. Complexity leadership skills, public participation, and training of decision makers in the use of the framework and its constituent parts are prerequisites for the successful implementation of the framework. A high-level champion, preferably the municipal manager, should be designated to oversee the institutionalisation of the framework. A director should take responsibility for the implementation of the framework in terms of a performance agreement.

### **7.7.2 Conclusions and recommendations**

The framework represents and reflects most of the findings of the research, the lessons learned, and the insights captured during this study. It is aligned with the aims of the municipality and with all the legislation and policies that apply. Implementation of the framework should be a low-cost activity that will cause the minimum disruption of existing processes and systems. The full benefit of the framework may only be realised once the political intent to utilise it leads to the proper institutionalisation of the entire framework.

The municipal council has to be informed about the merits of the framework and its members have to take a formal decision on its implementation. It is recommended that the municipal manager acts as champion for the formal implementation of the framework. A director, probably the director of corporate affairs, could take responsibility for the practical implementation of the framework in terms of her performance agreement.

It appears as if the proposed framework can be implemented without much disruption of existing systems and routines of the municipality. Existing processes and structures may need to be expanded or adjusted to accommodate the complementary activities, such as formal environmental scanning, foresight, experimentation and innovation, and the utilisation of adaptive spaces. Other existing processes and structures, such as the formal decision-making system, the performance management system, and the decision process governance system only need to be optimised and refocused. Much more should be done to implement sophisticated feedback processes that monitor the impacts of decision outcomes.

Further development of the conceptual decision framework and the implementation thereof require the development of practical devices at a more detailed level. For each component of

the decision framework of Figure 7.1 a more detailed sub-framework or a flowchart with checklists and implementation plans can be developed.

The next chapter concludes the research and summarises the main findings and conclusions of the study.

## CHAPTER 8 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The country faces a great development risk if Local Government fails.

(COGTA, 2009b:3).

### 8.1 Introduction

This study was initially inspired by the researcher's altruistic desire to enhance municipal decision making and his need to develop a better qualitative understanding of complex phenomena. During the preparation of the research proposal, it became clear that the study should also consider the bigger context within which the municipality took decisions. These considerations resulted in a study with four main themes, namely the nature of the municipal context, the decision-making processes, the adaptive capacity of the municipality, and a conceptual framework for decision making. Unforeseen growth in the scope of the study resulted in a corresponding growth in the volume of the text.

This chapter contains a summary of the entire study. It links the initial research questions, the research objectives, and the summaries, conclusions, findings, and recommendations from all the chapters. Reference is made to the research design and methodologies, relevant literature, the field work, and the data analysis. The chapter concludes with a summary of the knowledge contribution and recommendations for further research.

### 8.2 Chapter 1: Introduction and orientation

This final chapter contains a summary of each of the preceding chapters, and the conclusions from each chapter. The final paragraphs of this chapter contains the main conclusions from the research and the contributions made by the study. Generalisability of study findings are discussed and recommendations for further research are made.

#### 8.2.1 Chapter summary

Chapter 1 provided the background and established a structure and a framework for the execution of the study. It stated the research problem, the research questions, the research objectives, and the research strategy. An initial research problem statement ascribed the poor performance of local government to oversimplified decision-making practices. The reformulated problem statement blamed municipal decision makers for not formally taking care of the phenomenon of complexity. Municipal decision making was still taking place in a context dominated by the reductionist paradigm. Strategic planning did not address the phenomenon of complexity and decision makers did not have the knowledge, skills, resources, or strategies to deal with complexity. In addition, there was a shortage of relevant academic literature on municipal decision making in the complex SA context.

The main research question that addressed the research problem was the following:

*What are the features of a conceptual framework that may enhance the capacity of municipal decision makers to deal with complexity at the Hessequa municipality?*

The subsequent research objective was formulated as follows:

*The primary goal of this study is to devise a conceptual framework, that, when applied, can significantly enhance the capacity of decision makers at Hessequa municipality to deal with the phenomenon of complexity.*

Four research sub-questions addressed four different aspects relating to the main research question. These sub-questions and their corresponding objectives were the following:

*Research sub-question 1:* What are the main features of the current context within which the municipality takes decisions?

*Research objective 1:* To provide an overview of the main features of the internal and external context within which the municipality takes decisions.

*Research sub-question 2:* How does the municipality take decisions under conditions of complexity?

*Research objective 2:* To develop an understanding of the current and recent decision-making processes and practices of the municipality from a complexity perspective.

*Research sub-question 3:* What are the strengths and weaknesses of the adaptive capacity of the municipality?

*Research objective 3:* To identify the strengths and weaknesses of the municipal adaptive capacity.

*Research sub-question 4:* What are the features of a conceptual framework that could enhance the capacity of the municipality to take decisions under conditions of complexity?

*Research objective 4:* To devise a conceptual framework for municipal decision-making that considers the context, decision-making processes, and the adaptive capacity of the municipality.

These questions and objectives were interlinked and were pursued over four corresponding chapters following the literature review.

The research design and the research methods were addressed in Chapter 2.

### **8.3 Chapter 2: Case study research design and methods**

Chapter 2 focused on the single-case case study research design and the research methods employed in the study.

#### **8.3.1 Chapter summary**

Chapter 2 provided the justifications for the strategic research choices for the study. It provided the logical plan that linked the research questions, the relevant data to be collected and appropriate methods and processes to collect and to interpret this data in order to answer the research questions. A qualitative single-case case study was designed and implemented. The following methods were selected for the study:

- The non-empirical literature review method was selected to perform the literature review.
- Depth interviews and focus groups were used to collect data.
- Document searches, observations, and field notes provided additional data.
- Thematic analysis was applied to analyse and interpret the qualitative data.
- Model-building theory was used to inform the development of the decision framework.

Data was collected by means of 20 depth interviews. Interviewees included all five the directors, the municipal manager, the mayor, the speaker, senior officials, and specialists from the administration. Two focus group sessions were conducted, one with a group of 'item

writers' and the other with the caucus of the governing DA party. Field work was conducted in accordance with the SU ethics code and the confidentiality agreement with the municipality. Additional data was collected from the electronic data base and the web page of the municipality. Observations and field notes provided additional data. Details regarding the practical application of the research methods and the execution of field work were also provided. Abductive thematic analysis of the transcribed data was done by means of CAQDAS in combination with a manual process.

### 8.3.2 Conclusions

A qualitative, single-case case study provided an appropriate strategy to develop an understanding of dynamic and complex social phenomena. The research methods and theoretical frameworks applied were adequate to examine municipal decision making in terms of the law of requisite variety and the law of complexity. The application of a complexity framework to study municipal decision making was appropriate and adequate. CAQDAS, in the form of NVivo-12 software, was almost indispensable for a study of this scope. The main value of the software was linked to the management of the large volume of data only. The analysis and interpretation of the data required mental processing capacity, not computer processing capacity.

## 8.4 Chapter 3: Review of literature regarding aspects impacting on decision making

Chapter 3 contains a review of the theoretical frameworks upon which the study is based. Theories of systems, decision making, leadership, organisations, and governance are covered.

### 8.4.1 Chapter summary

Chapter 3 contains a review of academic literature that provides a foundation and framework for the study. The review was primarily based on a non-empirical literature review of current English academic literature from the Western World. Systems theory, decision-making theory, leadership theory, organisation theory, governance theory, and the notion of 'context' were reviewed. A complexity perspective of decision making within a larger context linked all these themes with the phenomenon of decision making. A brief summary of each of these core themes is provided here:

**Systems theory:** The unique features and behaviours of simple and clear systems, complicated systems, complex systems, and chaotic systems<sup>7</sup> were examined. The sub-category of CASs was also reviewed. Unique features and behaviours of each system category required a unique strategy to address it effectively. Specific strategies that were adequate to address each category of decision issue were formulated in terms of the law of requisite complexity.

A systems perspective, a complexity perspective, and a CAS perspective of reality are fundamentally different from a linear, reductionist perspective of the same reality. A complexity perspective of phenomena penetrates deeper and reveals much more than a Newtonian perspective. An innovative framework was developed to evaluate the adaptive capacity of a CAS at, and across, three causal levels.

**Theory of decision making:** A process theory of decision making rather than a variance theory was adopted for this study. The advantage of a process approach was that it provided for a richer narrative in qualitative terms, and it proceeded along the temporal dimension. A

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<sup>7</sup> Note that a contextualised decision issue can be defined as a system. A decision issue can be characterised as simple and clear, complicated, complex, or chaotic.

decision is normally defined as the result of three consecutive phases of a decision process, namely an *awareness* phase, an *analysis* phase, and an *action* phase.

A spectrum of contingent factors impacts upon the decision process and the decision issues. Internal factors include the type of leadership involved, politics, the decision-making capacity of decision makers, the nature of the contextualised decision issues, and the features of the decision-making entity. External contingent factors originate in the domains of politics, the economy, society, technology, the natural environment, and legislation. These contingencies contribute complexity to the decision process.

Different types of theoretical models have been formulated to study the phenomenon of decision making. Initially the classical rational decision model was based on an oversimplified and closed-system perspective of decision issues and processes, and assumed full knowledge regarding all aspects of the decision and its outcomes. This simple approach enabled decision makers to make 'optimal' decisions. A somewhat more realistic decision model based on 'bounded rationality' provides for a 'satisficing' approach or 'a good enough' approach to decision making. Lindblom's model of successive limited comparisons, incrementalism or a 'muddling through' approach is an attempt to address complex and dynamic decision issues by means of an evolutionary, low-risk process of consecutive iterations in pursuit of a desired end goal. The mixed-scanning model addresses some of the shortcomings of the above models. Mixed scanning differentiates between higher-order strategic decisions and lower order incremental decisions that facilitate the implementation of the former category.

The weaknesses of the groupthink model of uncritical decision making by cohesive groups were highlighted. An expanded decision model for groups termed the general group problem-solving model addresses some of the weaknesses of the groupthink model. The garbage can model of decision making applies to 'organised anarchies' where rational decision making is inappropriate. This model applies when goals and objectives are unclear, when the organisation is unorganised, and when participation of decision makers is inconsistent and variable. Problems, solutions, participants and choice opportunities interact almost randomly.

The political model of decision making applies to political environments. Diverse interest groups make use of organisational power and influence, coalitions, organisational politics, and conflict to pursue their clashing interests and aims in a political arena. This model provides a very appropriate framework to study decision making in a political context. The literature review covered a spectrum of sources of power as well as the nature of organisational politics.

Checkland's 'soft' systems model represents a systems approach to decision making regarding complex decision issues in the real world. The model is based on systems thinking and considers the essential features of complex systems. Decision making is informed by different perspectives of the problem situation and a system understanding of the complexity involved. Soft systems methodology simulates decision making as an iterative action learning process.

Naturalistic decision making provides a framework to analyse real-world, fast-paced, high-risk decision making under fluid and critical conditions of time pressure and uncertainty. This model is appropriate to address decision issues that fluctuate between the domains of complexity and chaos. The model of intuitive decision making expands the naturalistic model. Intuitive decision making is based on complex mental processes that recognise and match patterns, gained through experience, with critical decision situations.

Metaphors are used very effectively to model and understand decision-making processes from different perspectives. The machine or clockwork metaphors are used to model decision making in the domain of order and stability. Metaphors to model complex decision issues include a brain, an organism, or a culture.

Process models of decision making explain in qualitative terms how decision issues progress through a sequence of process steps until an outcome is reached. This category of models considers time as a variable factor. Process steps are interconnected through feedback and feed-forward loops that span the past, the present, and the future. Futures models and foresight models are based on a future consciousness and an anticipatory capacity. These models include modules for visioning, the exploration of possible, probable, preferred, and ideal futures that inform strategy development and longer-term planning. Resultant strategies and plans inform the day-to-day decision making of the organisation involved.

Frameworks for decision making are based on Ashby's law of requisite variety. Decision strategies must be adequate to address the complexity of the framed decision issue to be decided upon. A reductionist approach and effective management are sufficient to address decision issues in the domain of order. An adaptive approach and adaptive leadership are required to address complex issues. Adaptation is informed by innovation, experimentation, and learning. Naturalistic decision making or intuitive decision making, with immediate, direct action is often adequate to address chaotic situations. A commanding style of leadership is required in critical and chaotic situations. Decision strategies must be adjusted when decision issues undergo transformations.

Various types of decision errors can be committed due to inappropriate problem diagnostics. Some of these errors can be avoided when contextualised decision issues are framed accurately. 'Discounting the future' results in short-term thinking that reduces the significance of future challenges. A reductionist approach may result in oversimplification of complex issues.

***The notion of context:*** Context refers to the circumstances, conditions, surroundings, factors, state of affairs, and frame of reference that form the setting for a decision issue in terms of which it can be fully understood. Contexts contain the contingent factors that interact with the decision-making process and system. Complex issues can only be understood within their contexts.

The complex domain contains visible and invisible dimensions within the domains of time and space. The temporal domain introduces concepts such as path-dependency and initial conditions to a contextual understanding of issues. The spatial dimension of contexts contains the hierarchies, networks, structures, connectivity, and relationships observed within contexts. Multiple complementary perspectives are therefore required to explore the complex domain.

***Leadership theory:*** Present-day leadership models describe leadership as an emergent phenomenon and an interactive dynamic that produces adaptive outcomes in a specific context. The role of individual leaders is to facilitate and influence this dynamic and the outcomes.

The literature review provided a high-level overview of the evolution of leadership theories. Theories about the traits, motives and characteristics of leaders in terms of the 'great man theory' were reviewed. A framework to understand toxic leadership was also discussed. Different leadership behaviours, attitudes and styles as indicators of effective leadership were reviewed. Leadership styles include participative, autocratic, entrepreneurial, gender-based and servant leadership. Contingency and situational theories of leadership were addressed. These theories consider the contextual variables that co-define leadership approaches. Leadership effectiveness is determined by how well a leader's style matches the demands of the contextual situation. Crisis leadership and evidence-based leadership as forms of contingency leadership were also discussed.

Path-goal theory of leadership expands leadership theory beyond a focus on task-oriented and people-oriented behaviours. It proposes that a leader should choose a leadership style that complements the characteristics of the team members, their task environments and the



demands of the task to be effective. Despite various limitations path-goal theory stimulated the development of value-based leadership theory and charismatic leadership theory.

Transformational leaders use charisma, influence, and inspiration to transform people by empowering them to fulfil their potential while realising the objectives of the organisation. Situational leadership theory builds on theories of leadership that focus on a task orientation and a consideration of relationships with team members. Situational leaders adjust their leadership styles to match the level of development, competence, and commitment of individual group members with the degree of difficulty of a specific task. The normative decision model of leadership is effectively a contingency model. It suggests that leadership is a decision-making process during which the leader considers certain contextual factors before deciding on an appropriate decision-making style. Leadership and decision styles vary from autocratic to consultative to participative. The strengths and weaknesses of each model were discussed.

A limitation of the above models is that they only focus on the characteristics of the leader and team members and on a small number of contextual variables that affect leadership effectiveness. None of the models are adequate to deal with the complexity facing leaders in a fast-paced, postmodern globalised world. The complexity paradigm offers an entirely new framework for the study of leadership in a complex world. Complexity and adaptive leadership models define leadership as an informal, complex, dynamic, and an adaptive process that emerges from the creative interaction of people, ideas, contingencies, and systemic contexts.

The success of future leaders will be co-defined by their level of ego development, adaptive capacity, ethical norms, and their anticipatory capacity. They will need a truly holistic or integral consciousness and the capacity to facilitate collaborative and adaptive problem-solving. These attributes will enable them to address complex issues with more wisdom, skill, and sensitivity.

**Organisational theory:** Organisational theory addresses the characteristics and features of entities consisting of more than one element. Early reductionist definitions of the concept *organisation* reflect an organisation as a closed system of relations among system elements of a particular kind. Later definitions refer to the interaction between an organisation and its context. Currently, systems theory provides a convenient and comprehensive framework for the study of organisations. Biomatrix systems theory was used in this study to address seven integrated, generic aspects of all types of systems. These aspects consider the contextual *environment* of the system, its *ethos*, its *aims and objectives*, the *processes*, *structures* and *resources* as well as the *governance* aspect of the system.

**Governance theory and models:** Nineteenth century definitions of the concept *public administration* (i.e., governance) considered the political domain and the administrative domain and the relationships between them. Key variables in the sphere of governance that have remained relevant since biblical times are power, influence, interests, conflict, coalitions, and relationships among actors. More recent definitions of the term *governance* refer to the interaction between government and non-government actors through collaborative and self-organising, decentralised networks that span all kinds of boundaries. New variables and new frameworks and models have been adopted by governance theorists to capture their understanding of this constantly evolving concept in a context that also changes. Several governance models were reviewed.

*The bureaucratic governance model*, represented by the machine metaphor, is designed to promote order and efficiency in stable and predictable environments. It employs formalised policies, rules and control mechanisms, specialisation, and standardisation to promote the interests of the organisation. The model applies to hierarchically structured organisations and serves as a means to promote consistency of repetitive and standardised tasks. The

bureaucratic model is inappropriate in a fluid context where adaptability, agility, and flexibility are required. It provides limited scope for innovation and experimentation.

*The NPM governance model* is an attempt to improve the functioning and performance of bureaucracies in the public domain. Government should be more entrepreneurial, more customer-driven, more competitive and mission-driven rather than a rule-driven organisation. Entrepreneurial government should be both market-oriented and community-oriented, almost like a business. Performance management should focus on results and impact, not on inputs. The model fails to address the challenges of a complex society.

*The NGM* is based on flexible and innovative collaborative networks that integrate and coordinate various autonomous and sovereign government and non-government actors. These networks co-produce policy and jointly implement policy. The emphasis is more on the value-adding processes and the transactions than on the powerful hierarchical structures of government. Network governance is based on flexible and adaptable networks that provide access to a spectrum of resources and participants. Network governance is better able to cope with complex governance issues in a complex context.

*The MGM* assumes that markets are more effective to allocate resources and to pursue the goals of government than bureaucracies. In this model government uses its power to create markets to fulfil public needs, but without employing public funds or public employees in the markets. Market governance is much more flexible and efficient than bureaucratic governance. This model lacks the sophistication to deal with complexity.

*The collaborative governance model* has at its centre an institutionalised, collective, and formal decision-making process. Public agencies and government institutions together with non-state stakeholders, such as citizens and organised groups, participate directly in consensus-seeking decision-making processes that aim to formulate or implement public policy. Non-state participants are co-responsible for policy outcomes but the ultimate authority for decisions remains with the public agency. This model is more flexible than the bureaucratic model and it contains elements that are useful in a complex environment.

*The public value management model of governance* aims to deliver 'public value' to society with the same commitment, skill and imagination that private institutions employ to create private value for shareholders using private assets. Public value is created through innovation, creativity and collaboration between government institutions and non-government stakeholders. Collaboration takes place through coalitions with public, private, voluntary, and informal community stakeholders. A 'strategic triangle' framework integrates and aligns three processes, namely defining public value, authorisation, and building operational capacity to create public value. Instead of separating the roles and functions of politics and administration, this model integrates politics (for legitimacy and support), substance (e.g., economic, social, cultural, political, and ecological value), and administration (i.e., capacity to implement). In this model society acts as arbiter of public value.

The public value model is more adequate to deal with the challenges facing governance institutions than the models referred to above. The model considers outcomes that the public really value instead of mere output, and citizens are involved in the creation of value.

*The learning governance model* addresses only one aspect of governance, namely the learning process. Individual learning and OL processes are addressed. Action learning and several other models of reflective learning are reviewed. Learning processes are integrated with KM processes that aim to improve governance performance.

*The CAS model of governance* emphasises the interdependencies, non-linearity, complexity and unpredictability of governance processes in a complex governance context. A CAS model recognises the unique characteristics and range of diverse behaviours of complex and

adaptive systems. Adaptive governance emphasises the need to reconfigure the organisational architecture of governance systems so that they can rapidly evolve adaptive solutions. A CAS perspective enables managers to navigate fitness landscapes intelligently.

A CAS model of governance and complexity leadership go together. Complexity leaders create transformational environments and adaptive spaces from where innovative and adaptive responses to current and future challenges are generated. The CAS governance model appeared to be more capable to deal with complexity than any of the other models that were reviewed. A CAS model incorporates most of the salient aspects of the other governance models, for example collaboration with diverse actors, OL, creativity, experimentation and innovation, the use of networks, complexity leadership, and the creation of public value.

#### **8.4.2 Conclusions**

The following conclusions can be drawn from the literature study. First, the nature of the contextual environment in which decision making, leadership, and governance take place has changed and continues to change under the influence of global megatrends. This environment has evolved from a relatively stable setting to one that is continuously becoming more complex, dynamic, fluid, and unpredictable. Governance institutions are sharing more and more power and authority with non-government stakeholders and citizens. This has caused the effect of 'hollowing out the state'. These developments render most of the initial theories and models of decision making, leadership, organisations, and governance less relevant.

Second, the reductionist scientific paradigm remains useful in a stable and closed environment but inappropriate and inadequate to address complexity. Complexity theory provides a new and innovative framework to study decision making, leadership, and governance in a VUCA context.

Third, a framework for decision making must consider Ashby's law of requisite variety. Different types of strategies, leadership styles, and organisational structures are required to address decision issues characterised as either simple and clear, complicated, complex, or chaotic. Decision making in the complex domain needs to be complemented with adaptive capacity, scope for experimentation and innovation, exploration, action learning, collaboration, and participation by diverse and knowledgeable participants.

Fourth, the reality of a complex context requires leaders who understand the phenomenon of complexity and who can provide appropriate leadership. Effective leadership in the complex domain is characterised by adaptive leadership skills, collaboration and facilitation skills, teamworking and networking abilities, and continuous reflection and learning. Leaders facilitate adaptive change through consultation and collaboration with diverse actors in adaptive spaces within a transformational culture that they create.

Fifth, rigid and inflexible bureaucratic governance systems are ineffective, inefficient, and value-destroying in the complex domain. Governance models based on self-organising networks, collaboration, learning, innovation, continual self-reflection and value creation through coalitions are better suited for governance in the complex domain than models lacking these features. The CAS governance model is appropriate for studying the complexity of governance.

Sixth, the theories, models, and definitions of decision making, leadership, organisations, and governance have evolved from a closed systems perspective to a systems perspective of all these phenomena. Decision theories have evolved from a focus on rigid, rational process steps in a supposedly closed environment to an adaptive process subject to dynamic contingencies in a complex domain. Leadership theories have evolved from a focus on the traits of the great individual leader to complexity leadership that considers the catalytic and mutual influences between a leader and collaborators in a bigger context. Organisational theories have evolved

from a focus on the organisation in isolation to a multidimensional perspective of the organisation in relation with diverse actors and variables in a bigger context. Governance theories have evolved from bureaucratic models to CAS theories of governance in a complex domain.

Seventh, as can be expected no generally accepted single definition of complexity was found in the literature. Neither was a single definition of leadership, organisation, decision making, or governance found in the literature. However, many diverse definitions of each concept were found and all of them were mere reductionist and approximate descriptions. The conclusion was that it was as difficult to define the notions of leadership, organisation, decision making, and governance as it was to define the notion of complexity. Any definition of these complex concepts will only remain a compressed and incomplete reductionist approximation.

The comprehensive literature review of Chapter 3 informed each of the following four chapters. The features of the municipal context were examined in Chapter 4.

## 8.5 Chapter 4: Features of the municipal context

This chapter contains a summary of the features of the internal and external contexts of the municipality and is based on a non-empirical literature review. The latter part of the chapter contains the empirical findings based on a thematic analysis of the data.

### 8.5.1 Chapter summary

Chapter 4 addressed the first research sub-question that was stated as follows:

*What are the main features of the current context within which the municipality takes decisions?*

The purpose of Chapter 4 was to describe the features of the municipal context in terms of complementary perspectives. Several different theoretical frameworks were applied to documentary data to reveal different components and dimensions of the contextual environment. Empirical findings provided a perspective of the internal context.

**PESTLE analysis:** A PESTLE analysis of the municipal environment revealed aspects of the municipal context in the political, economic, social, technological, legislative, and natural environments. The following important observations were made within the respective domains:

*The political domain:* National and local party politics dominated the political arena of municipal politics. Fierce political battles were fought by the leading political parties to gain control over the municipal council. Minority parties played key roles in a few governing coalitions. Transitions from one ruling party or coalition to another normally introduced instability into the entire municipality. Dynamic councillors used every possible opportunity to gain political advantage, even during the processes of decision making.

*The economic domain:* Poor national and provincial economic conditions and trends permeated the municipal geographic area. A high Gini coefficient, unemployment, low skills levels, poverty, inequality, and low economic growth rates characterised the region. The tertiary sector was twice the size of the more labour-intensive primary and secondary sectors. Economic development was constrained by low skill levels, long distances to markets, and the high cost of energy.

*The social domain:* The population size remained relatively constant. Almost eighty per cent of the population were urbanised and the dependency ratio was about sixty per cent. The HDI of the municipality trended upwards. More than ninety per cent of households lived in formal housing and received basic services. Although the matric pass rate was above 80% the learner

retention rate was below 70%. A teenage pregnancy rate of 20%, crime, drug abuse, and unemployment were causes of concern. A large portion of the residents received indigent support and social grants.

*The technological domain:* Residents that could afford it had access to a wide spectrum of modern technologies in the fields of medicine and health, agriculture, transport, ICT, and renewable energy generation. The 4IR created opportunities and risks for the municipality. The municipal administration made good use of available ICT.

*The legislative domain:* Legislation derived from the Constitution provided the legal framework within which the municipality functioned. Legislation that was in draft form and bills that had not yet been implemented might have important implications for the municipality.

*The domain of the natural environment:* Climate change, rising sea levels, severe weather events, such as droughts, storms, floods, and veld fires posed huge risks for the municipality and its residents. The area had abundant resources of wind and solar power but limited mineral resources, including fresh water. The Indian Ocean and the natural beauty of the region represented valuable natural assets.

The PESTLE analysis provided a convenient framework to identify risks, threats, opportunities, and trends in the contextual environment. Observations were made at the 'surface level' only. The dynamic interaction among variables in the different domains, or the underlying mental and cultural aspects that informed the systems in each PESTLE domain, were not examined.

**CLA:** The CLA perspective was applied to analyse the phenomena of *unemployment* and *climate change* in terms of causality at four different levels. At a surface level, unemployment rates, changing weather patterns, and natural disasters were observed. At a systems level, the poor education system and the carbon-intensive global economy were identified as contributing factors respectively. At the level of paradigms and worldviews it might be argued that the poor education system was an inheritance of the apartheid paradigm and *Bantu* education. Climate change was driven by humanity's self-centred values and materialistic consciousness and by the reductionist paradigm upon which modern society was built. At the level of myth and metaphor, the extremely high levels of unemployment had been described as a 'ticking time bomb'. Climate change was fuelled by the myth that the earth was an infinite source of raw materials.

Myths and metaphors, and paradigms and worldviews co-defined the systems that co-produced the undesired effects observed at the surface level. A CLA perspective provided an understanding that the PESTLE analysis could not provide.

**A systems perspective:** A systems perspective of the contextual environment revealed the linkages between interconnected systems. The LTGR, the unique features of the 4IR, the Global Risk Report, and UN studies of the global food-water-energy nexus and the SDGs illustrated the systemic nature of the global context. Global challenges were 'transnational in nature and transinstitutional in solution'. These examples illustrated the connectivity among human activity, technology, climate change, demographic variables, the depletion of natural resources, and the natural environment. Non-linear, time-dependent feedback loops linked variables in all the PESTLE domains.

A Biomatrix systems perspective of the labour market in SA revealed how a complex combination of historic factors and current realities co-produced unemployment.

A systems perspective suggested that the planet was one giant systemic complex with multiple feedback loops that allowed cross-impacts among the variables. The Hessequa municipality was an integral part of this giant complex. Therefore, the municipal actors needed to be aware of its systemic nature when they took decisions.

**A CAS perspective:** A complexity perspective of phenomena in the contextual environment revealed behavioural aspects that the other perspectives did not expose. Several examples of complex phenomena in the contextual environment were discussed. The catastrophic leveraging effects of the Covid-19 virus were discussed. Examples of 'change events' that triggered system dynamics were reviewed. Change events and system dynamics often initiated the complex processes of self-organisation and adaptation when perturbed complex systems adjusted to the new conditions. The 4IR had stimulated the evolution of innovative education and governance systems. A CAS was able to learn. Lessons learned about the interaction between the Anthropocene and natural systems enabled communities to adapt proactively to climate change. It was important to be aware of bifurcation points as well as looming critical situations of self-organised criticality in order to address them proactively. A CAS was path-dependent. Decisions about a CAS should be informed by a proper understanding of its history and its unique and unpredictable behaviours. A reductionist approach to deal with a CAS was inappropriate.

**A temporal perspective:** Complex systems and phenomena exist and evolve within the domains of time and space. A temporal perspective considers and links the past, the present and the future evolutionary paths of systems. Future consciousness and an anticipatory capacity enable decision makers to anticipate and to imagine, define, and approach desired futures. It allows them to develop strategies and to plan projects in order to realise preferred and desired futures. A temporal awareness and a future consciousness focus attention on the future implications of historic and current decisions, delayed feedback loops, and appropriate planning horizons. Foresight may reveal future opportunities to exploit and risks to avoid.

A temporal perspective of the municipal context required an understanding of the evolution of South African history, the democratisation process that ended the apartheid era, the history of local government in SA, the transformation of municipalities after 1994, the history of the Hessequa municipality, and the current reality regarding local government in SA.

**An integral perspective:** The four-quadrant integral perspective provided a meta-framework that integrated all the above perspectives into one holistic, integral perspective. An integral perspective of the municipal context could reveal as much of the context, or more than all the other perspectives put together. The PESTLE analysis fit neatly into the lower right quadrant of the integral framework. Both the systems perspective and the CLA analyses at the surface level and the systems level belonged to the lower right quadrant. The CLA analyses at the level of worldviews, paradigms, myths, and metaphors belonged to the upper left and lower left quadrants. The CAS perspective of contextual issues belonged to the lower right quadrant. Actual performance of the municipality could be plotted in the upper right quadrant. An integral perspective of all four entangled quadrants provided a holistic picture of the municipality in its context.

**A Biomatrix systems perspective of the internal context:** A Biomatrix systems perspective was applied to the internal environment of the municipality. The seven integrated aspects of this environment were examined in terms of relevant literature, the web page of the municipality and other government institutions, and legislation that applied.

**Empirical findings regarding the context:** Three main themes were observed in the empirical data, namely a *political arena*, *contextual awareness* (of decision makers), and *emergence of complexity*. The main theme a *political arena* was based on themes about political and administrative actors in the arena, their diverse interests and aims and the strategies and tactics that they employed to realise these aims. Competition and political strife in this arena led to conflict and the use of power and influence to resolve the conflict.

The main theme *contextual awareness* referred to the interviewees' awareness of the temporal, spatial and complex dimensions of the municipal context. Interviewees' future

consciousness and their spatial awareness seemed to be hampered by blind spots. The spatial awareness of interviewees was limited to a very fragmented understanding of their environment, mainly at a surface level. They were aware of isolated contextual variables within the domains of the PESTLE framework. Many interviewees seemed to be unaware of the important influence of paradigms, worldviews, and myths of stakeholders on decision making processes.

Most interviewees were either unaware of the phenomenon of complexity or did not know how to identify and address complex issues. Interviewees lacked both a vocabulary and a framework to identify and to address the phenomenon of complexity. A key finding was that interviewees intuitively sensed when a decision issue was complex, but they could not distinguish between complicated decision issues and complex issues. Interviewees lacked a vocabulary and the knowledge and understanding to distinguish between complicated and complex phenomena.

The main theme *emergence of complexity* referred to the preconditions for the emergence of complex behaviours in the contextual environment. The diversity of stakeholders and actors involved in municipal decision making, competition among actors for political and economic gain, structural aspects, and contingencies co-created a complex ecosystem. Behaviours that were associated with complex and adaptive systems were indeed observed in the municipal context. The conclusion was that the municipal decision-making system could be described as a CAS.

## 8.5.2 Conclusions

Multiple complementary perspectives of the contextual environment contributed to a rich and comprehensive understanding of the municipal context. The traditional PESTLE analysis revealed contextual variables and trends at a surface level. The CLA perspective and the systems analysis transcended and included the scope of the PESTLE framework and revealed the interconnectivity of global trends, risks, challenges, and global systems at different levels of causality. The CLA analysis addressed the paradigms and worldviews, metaphors and myths, which underpinned global systems. A CAS perspective of the context uncovered the features and unique behaviours that characterised complex and adaptive phenomena in the complex domain. The temporal perspective considered the links between historic developments, the present, and possible, probable, preferred or desired futures. A foresight capability was required to address future developmental paths. An integral perspective of the contextual environment provided a single, holistic understanding of this domain. All these perspectives confirmed that the municipal context could indeed be described as a complex domain. Complexity permeated both the entire context and the municipality which was contained within.

The municipality was exposed to various local manifestations of adaptive challenges of global proportions. The reductionist paradigm was inadequate and inappropriate to address these challenges. Instead, the complexity paradigm and a foresight capability were suggested as means to inform municipal governance.

The contextual analysis in Chapter 4 exposed several shortcomings and blind spots in the current IDP. This finding might justify a fundamental review of the format and scope of the IDP.

Chapter 4 examined the nature of the context in which the municipality took decisions. The next chapter focused on municipal decision-making.

## 8.6 Chapter 5: Municipal decision making

This chapter addresses municipal decision-making processes by means of a thematic analysis of empirical data. The research findings are captured below.

### 8.6.1 Chapter summary

Chapter 5 addressed the second research sub-question that was stated as follows:

*How does the municipality take decisions under conditions of complexity?*

This question was addressed by means of an abductive thematic analysis of empirical data. The analysis focused on the overarching theme of this chapter, namely *municipal decision-making* in terms of three main themes. These were *definition of a decision*, *characteristics of decisions*, and *the formal decision-making process*.

A municipal decision was defined as the result of a choice opportunity at the end of a formal decision process. Implementation of the decision could be part of the decision or not, depending on the situation.

Decisions were characterised in terms of the *nature* of decisions, the *purpose* of decisions, and in terms of the municipal *entity* responsible for the decision. The nature of decisions was described in terms of four dimensions that related to a *value judgement* regarding the decision, the *level of complexity* of a decision issue, the *level of agreement* among decision makers about the decision, and the *level of difficulty* of a decision. Some decisions were described as 'difficult' because they were *mentally draining* or because they were *unpopular*, or difficult for *political reasons*. Other decisions were perceived as difficult because they were *complex* or because decision makers found it *difficult to prioritise* decision issues. Councillors experienced decisions regarding policy formulation as difficult whereas officials did not experience decisions regarding policy implementation as difficult because they only implemented policy in terms of the rule of the law. Fear of losing a track record of eight clean audit reports resulted in very conservative decision making and the avoidance of difficult decisions.

Decisions were taken for the following reasons, namely, to set the *strategic direction* for the municipality (as documented in the IDP), to *formulate policy* and to *implement policy*, and to *address risks*.

Interviewees referred to, or identified decisions in terms of the municipal entity responsible for the decision. Formal decisions were taken by the municipal council, the EMC or they were delegated in terms of the delegation system.

The *formal decision-making process* of the municipality was described in terms of the *sources of decision issues* that entered the decision process, the *process aspects* of the decision process, the *structural aspects* of the decision process, and a spectrum of *contextual influences* that influenced the decision process. Secondary processes that might significantly influence the formal decision process included the process of framing decision issues and the way the documentation about a decision issue was prepared. Municipal decision making was dominated by the democratic voting power of the ruling party or coalition. Decision processes were governed through self-governance and external governance processes. Feedback processes enabled OL and enhanced the adaptive capacity of the municipality. Decisions were driven through the decision process by time schedules, by agile actors in pursuit of their own interests and by legislation. Consultation and innovation processes provided inputs into the formal decision process.

The analysis also revealed that the decision process was primarily a linear process based on the reductionist paradigm. Interviewees were much more aware of the structural aspects of the formal decision process than the process aspects. Hierarchically structured bureaucratic structures, often burdened by red tape, contained the decision processes and enabled implementation of decisions. Provision was made for adaptive spaces where experimentation, innovation and learning took place. The structural aspects and the process aspects were interwoven and interdependent.



The formal decision process was influenced by *contextual influences* such as the diverse *aims and objectives* of stakeholders and the *decision criteria* that were applied. Financial criteria, technical and technological considerations, reputational considerations, political and economic considerations, social considerations, legal criteria, consequences of decisions and the time factor influenced the decision process. Contextual variables such as legislation and value systems of actors contributed complexity to the decision process. The combined effect of all these diverse influences was that municipal decision making was indeed highly complex.

Purposive sampling was used to select two complex decision issues as mini-cases, namely the compilation of the annual budget and the decision about a solar-driven water desalination plant in Witsand. Complex aspects of each decision were investigated.

The political model of decision making provided a very appropriate framework to examine the process of compiling the budget. Annual budgeting was an incremental decision-making process, starting with an exploratory and divergent first phase of data collection and ending with a convergent phase. During the latter phase an adaptive and self-organising process was employed to balance the budget in accordance with the strategies and longer-term plans stated in the IDP.

The primary generative mechanism that drove the cyclical budget process was the multi-stage *life cycle theory*. *Teleological theory* could be used as a generating mechanism to demonstrate how a series of annual budgets pursued the developmental goals of the municipality. *Dialectical theory* provided insight into the generating mechanism associated with the conflict-laden decision process during which councillors from opposing parties debated the allocation of scarce funds to budget votes in pursuit of diverse political aims. *Evolutionary theory* could be used to describe how the evolutionary generative motor drove multiple ideas and premises in cooperative or competitive relationships through competitive cycles of variation, selection and retention events. Numerous 'change events' introduced novelty and creativity into the budget process. The budget process could therefore be conceptualised as a multi-motor decision process.

The decision process that resulted in the implementation of the Witsand desalination plant was analysed in terms of a systems perspective and a complexity perspective. The systems perspective considered eight complementary and interconnected aspects. The complexity perspective revealed the decision process as a self-organising and adaptive process within a political arena. International collaboration ensured the successful completion of the project.

## 8.6.2 Conclusions

Municipal decision making was a very complex emergent phenomenon. It emanated from many interconnected processes that were entangled with multiple structural aspects. It was subject to the influence of numerous contextual influences. A proper understanding of the nature and influence of these processes, structures and contingent factors could inform better decision making.

The inclusion or exclusion of the physical implementation step and the impact step in the definition of a decision had important implications. Inclusion allowed for a more comprehensive and informative evaluation of an implemented decision based on outputs and impacts over time. In contrast, exclusion of these steps resulted in a focus on inputs without considering the effects and impacts over time. As a result, no reflective or action learning took place and governance of the decision process was disabled. A review of the performance management system over a term of five years confirmed that the current performance management system was still focused on inputs rather than outputs.

The delegation system took good care of properly structured decision issues. Although the current formal decision process performed reasonably well it could benefit from the

enhancements suggested in this study. Its capacity to address complex decision issues could be improved significantly.

Interviewees did not have a framework or vocabulary to distinguish among decision issues characterised as simple, complicated, complex, and chaotic. As a result, a number of decision errors might have been committed and inappropriate decision strategies might have been applied.

Interviewees emphasised the structural aspects involved in the relatively linear decision process rather than its process aspects. Decision making could be enhanced if more prominence could be given to process aspects, such as problem formulation, problem analysis, framing of an issue, evaluation of the entire decision process, collaboration, experimentation and innovation. A stronger focus on process aspects could also enhance municipal adaptive capacity.

The way in which a contextualised decision issue was framed had important implications for the strategy applied to address the issue. Framing had implications for the type of leadership and management required to address the issue. Strategies to address decision issues had to satisfy the requirement of the law of requisite complexity (or variety). Decision makers required skill, insight and understanding to frame a decision issue accurately in its context. A mechanism to frame contextualised decision issues and a decision framework that suggested appropriate strategies to address a framed decision issue could assist in this regard.

Interviewees confirmed that a clean audit report issued by the AG was the ultimate indicator of good municipal performance. The reputation linked to eight consecutive clean audit reports by 2022 had to be maintained. This myth had a very important influence on decision making. It promoted a conservative approach to decision making and the avoidance of difficult decisions. This myth was also misused to manipulate decision making. Such a conservative approach to decision making hampered decision making in the complex domain and constrained adaptive capacity.

Interviewees agreed that item writers could manipulate the decision process by the way they structured and presented a decision issue. They also agreed that the choice of language for an item had a definite influence on the treatment thereof. In general, participants who were not fluent in the chosen language tended to pay less attention to the contents of such items than those written in their home language.

Neither the municipal decision process nor the development of the IDP formally considered the complex nature of the contextual environment within which decisions were made. Decisions were based on a very restricted view of the future. Municipal decision making could benefit from the contributions of proper environmental scanning, scenario planning, and foresight processes.

The majority voting power of the ruling party enabled the caucus of the party to dominate municipal decision making. This caucus might consider inputs from the opposition but was not obliged to accept them. Decisions taken by the caucus of the EMC were effectively rubber-stamped by the municipal council. However, interviewees from both the ANC and the DA admitted that they had benefited from good arguments by the opposition during their terms.

## **8.7 Chapter 6: Adaptive capacity of the municipality**

This chapter evaluates the strengths and weaknesses of the adaptive capacity of the municipality. Theoretical frameworks are applied to find out whether the municipality can indeed be modelled as a CAS. A novel theoretical framework is devised to evaluate the adaptive capacity of the municipality in terms of a CAS perspective.

### 8.7.1 Chapter summary

Chapter 6 addressed the third research sub-question that was stated as follows:

*What are the strengths and weaknesses of the adaptive capacity of the municipality?*

Two strategies were employed to address this question. The first strategy was to establish whether the municipality possessed the features and behaviours of a CAS. The second strategy was to evaluate the adaptive capacity of the municipality in terms of a suitable framework.

Initially a very basic modelling framework was applied to determine whether the municipality possessed the features of a CAS. Six systems aspects of the municipality were evaluated as well as its behaviours. The conclusion was that the municipality could indeed be modelled as a CAS.

A second framework was applied to establish whether six organising principles of a CAS applied to the municipality. First, it was confirmed that the municipality was *constituted relationally*. It was defined more in terms of relationships rather than by the constituent parts themselves. Second, the thematic analysis of the empirical data confirmed that the municipality possessed adaptive capacities. Third, the empirical findings confirmed that dynamic processes caused CAS behaviours. Fourth, the empirical data confirmed that the municipality was a *radically open system*, interacting with its environment across fuzzy boundaries in multiple dimensions. Fifth, the characteristic features and behaviours of the municipality were determined contextually. Sixth, novel features of the municipality emerged through complex causality. Numerous micro-processes and structures co-produced complex emergent behaviours at a macro level through multiple pathways. The finding was that all six organising principles of a CAS applied to the municipality. Again, the conclusion was that the municipality was indeed a CAS. The next challenge was to evaluate the strengths and weaknesses of the adaptive capacity of the municipality.

The adaptive capacity of the municipality was evaluated in terms of the adaptive capacity framework developed in Chapter 3. This framework was unique in the sense that it evaluated the adaptive capacity of the municipality in terms of twelve dimensions across three interrelated levels of causality. Adaptive capacity in each dimension was co-produced by several contributing criteria or interrelated abilities. Each dimension was considered. The framework was applied to empirical data and findings, relevant literature and municipal documents.

At the semantic level criteria within the dimensions of *availability of resources and assets*, and *ability of the municipality to implement decisions* were applied to evaluate adaptive capacity.

At the systems level criteria within four dimensions were applied to evaluate adaptive capacity. The dimensions related to *institutions and governance*, *experimentation*, *innovation and learning*, *future-conscious decision making* and *information and KM*.

At the cognitive level criteria within three dimensions were applied to evaluate adaptive capacity. These were *paradigms and worldviews*, *myths and metaphors*, and *organisational culture*.

Three dimensions of adaptive capacity cut across all three the above levels. These dimensions were *power and agency*, *leadership capacity*, and *variety and options*.

Criteria within each of the twelve dimensions were applied to determine the adaptive capacity of the municipality in terms of qualitative indications only. Strengths and weaknesses of the

municipal adaptive capacity in each dimension were documented. The conclusions drawn from this analysis are summarised next.

### 8.7.2 Conclusions

The analysis done in the first part of Chapter 6 confirmed that the municipality was indeed a complex adaptive system. The second part of Chapter 6 evaluated the strengths and weaknesses of the municipal adaptive capacity in twelve dimensions within and across three causal levels. Conclusions from the latter part were the following:

Adaptive capacity in terms of *availability of resources* was rather limited due to socio-economic conditions and the limited availability of several critical natural resources. Public logistical infrastructure had redundant capacity but infrastructure to deliver basic services was utilised at close to maximum capacity. Opportunities existed to enhance adaptive capacity in this dimension.

Adaptive capacity in terms of *ability to implement* had been demonstrated as a strength. This ability was limited by budget constraints and frustrated by red tape and legislative requirements.

Adaptive capacity in terms of *institutions and governance* was a strength but it could be improved. The municipal institution was perceived as a legitimate structure with relatively good support from its residents. A series of clean audit reports was testimony of ethical governance. The municipal bureaucracy supported the coping capacity of the institution under relatively stable conditions but not the adaptive capacity required for transformational changes that might be required in future.

Adaptive capacity in terms of *experimentation, innovation, and learning* was underdeveloped. Successful implementation of several projects had demonstrated the capacity to experiment and to innovate. However, a conservative and risk-averse approach limited the scope for innovation and experimentation at a larger scale. Provision was made for adaptive spaces and public participation in decision making. Much more could be done to facilitate institutional learning.

Adaptive capacity in terms of *future-conscious decision making* was rather limited and under-developed. A planning horizon of five years or less dominated planning. No provision was made for formal environmental scanning, scenario planning, or foresight processes that could take care of complexity. The municipality could benefit from a fully developed future consciousness and the ability to detect, interpret and act upon early warning signals about future trends and patterns. Resources to address this dimension were available in the form of retired specialists within local communities. Many of these shortcomings could be addressed during the next cycle of drafting the IDP.

Adaptive capacity in terms of *information and KM* was limited by the general inability of municipal decision makers to apply a complexity perspective, a systems perspective, or a futures perspective to interpret and understand available contextual information. The reductionist paradigm dominated. Current information and KM capacity was sufficient and effective to cope with simple issues of immediate importance.

Adaptive capacity in terms of *paradigms and worldviews* was limited by the dominance of the bureaucratic paradigm, inflexible and technical blueprint planning, and the view that the municipality should provide free services to those who could not afford it. No data suggested that current basic paradigms and worldviews were challenged, reflected upon or critiqued on a regular basis. Although interviewees confirmed that they did consider different perspectives and innovative approaches to address decision issues the basic paradigms and worldviews endured.

Adaptive capacity in terms of *myths and metaphors* was hampered by the myth regarding the perceived supreme importance of a clean audit report and the corresponding reputation of clean administration. This myth informed very conservative, risk-averse decision making. This myth was also used to manipulate decision making. This myth might have contributed to the perception of several officials and directors that they did not have to take difficult decisions when they implemented policy. Difficult decisions regarding issues involving risk and uncertainty within the complex domain were therefore avoided. As a result, adaptive capacity was sacrificed. A second myth informed the municipal performance management system: First, municipal performance was evaluated in terms of the activities and inputs of officials rather than the effect and impact of their activities. Second, the performance management system was based on a perverse, built-in mechanism that tended to benefit officials rather than residents. These conditions contributed to mediocre decision making that could hollow out the adaptive capacity of the municipality.

Adaptive capacity was enhanced through an *organisational culture* that was characterised by high levels of respect, professionalism and reasonable levels of trust. It welcomed new and innovative ideas and promoted collaboration, teamwork and information sharing. It accommodated creative ideas and experimentation, but it was inherently risk-averse and conservative. Adaptive capacity in the complex domain required an appetite for risk and uncertainty.

Adaptive capacity in terms of *power and agency* among municipal decision makers had been demonstrated in terms of numerous successfully implemented projects and initiatives. General observations indicated that poor, illiterate, and unskilled residents had very low levels of power and agency. They also had low levels of adaptive capacity. In contrast, educated and skilled residents with an entrepreneurial flair appeared to have higher levels of power and agency, and hence, also higher levels of adaptive capacity.

Adaptive capacity in terms of *leadership capacity* was strengthened by inflexible but reliable, legitimate and ethical bureaucratic leadership and by ethical and opportunistic political leadership. The presence of a strong administration that could serve as a substitute for political leadership strengthened the adaptive capacity of the municipality. Political leaders formed coalitions and collaborated with important internal and external stakeholders or actors to promote the adaptive capacity of the municipality. Adaptive capacity was also enhanced by administrative and political leaders through teamwork, consultation, and effective communication with residents. Adaptive capacity could be enhanced further through more formal adaptive and transformational leadership practices.

Adaptive capacity in terms of *variety and options* related to the availability of alternative means to realise the same adaptive capacity objective per dimension. Levels and types of adaptive capacity differed from one dimension to another. At closer examination it became clear that most dimensions of adaptive capacity referred to human capacities as enablers of adaptive capacity. This implied that the biggest opportunities to enhance adaptive capacity probably related to the development of human talent through capacity building, coaching, training, and mentoring of people. Adaptive and transformational leaders could transform the adaptive capacity of the municipality through wise leadership and the development of human talent.

The conclusion was that the municipality had a proper coping capacity but a rather limited adaptive capacity under more extreme conditions. Adaptive capacity could probably be enhanced significantly through deep self-reflection and the focused development of human talent.

## **8.8 Chapter 7: A conceptual framework for municipal decision making**

This chapter integrates the research findings in terms of the selected theoretical frameworks. The novel conceptual framework for municipal decision making contains these findings.

### 8.8.1 Chapter summary

Chapter 7 addressed the fourth research sub-question that was formulated as follows:

*What are the features of a conceptual framework that could enhance the capacity of the municipality to take decisions under conditions of complexity?*

The response to this question integrated the intent and the design of the study, the theoretical frameworks applied, and the insights and findings of the preceding chapters. The result was presented as a conceptual framework for municipal decision making. Contributions from the various chapters were the following:

**Chapter 1** set the scene for the study. It contained the problem statement, research questions, research objectives, an overview of the research design and methods, and the scope of the study.

**Chapter 2** provided details about the qualitative case study research design, field work, data collection, and thematic data analysis. The municipal context, the study design, research methods, many observations, and field data were used to co-define the nature of the framework.

**Chapter 3** contributed theoretical frameworks for the study. Included were theories of systems, complexity, leadership, organisations, and governance. The law of complexity had a strong influence on the design of the framework.

**Chapter 4** contained findings regarding the nature of the context that should be considered. These findings indicated the need for foresight, environmental scanning, and scenario planning functions to be included in the framework to remove current blind spots that hampered strategy development and planning.

**Chapter 5** provided a comprehensive analysis of current municipal decision-making processes and practices that did not take proper care of complexity. The current focus on structural aspects and inputs should be matched by a balanced focus on process aspects and decision process outputs. The complexity paradigm had several implications for the framework. Worldviews and myths that underpinned current decision making should be reviewed continually. The framework should allow for the collaboration of knowledgeable stakeholders in adaptive spaces. Feedback processes should inform OL and governance processes.

**Chapter 6** contributed useful findings regarding the strengths and weaknesses of the adaptive capacity of the municipality. The legitimate and properly functioning administrative bureaucracy and sound political governance structures provided an ideal organisational environment for the institutionalisation of the decision framework. Training of officials and councillors in the use of the framework should strengthen the adaptive capacity of the municipality. Institutionalisation of the framework should ideally coincide with the review of the 2017–2022 version of the IDP by the newly appointed council and municipal manager.

**Chapter 7** integrated the findings from the preceding chapters and presented it as a framework for municipal decision making. Each component of this framework was discussed in detail as well as the interaction among components. An evaluation of the internal context of the municipality indicated that the decision framework would fit comfortably within the existing structures of the municipality. Implementation could happen without disrupting other systems and routines of the municipality. Implementation of the framework by a director or the municipal manager should be a high priority for the municipality. Critical success factors for the effective implementation of the framework were listed. An initial evaluation of the framework indicated that it was comprehensive and that it could have real utility once implemented at Hessequa municipality. It may be adjusted with care for application elsewhere in a local SA municipality.

## 8.8.2 Conclusions

The main conclusion is that decision-making practices at the Hessequa municipality can be improved significantly through the institutionalisation of the proposed decision framework. Appropriate leadership and decision-making skills and an understanding of complex systems can contribute much towards a more adaptive, agile, admired, and sustainable municipality.

## 8.9 Conclusions of the study

The main conclusions from this study are the following: Decision makers at Hessequa municipality did not take care of complexity in municipal governance and in decision making. Officials and councillors lacked the knowledge, skills, and resources to identify, discuss, frame, and address complex phenomena and decision issues. They were not able to distinguish between complicated matters and complex matters. As a result, several decision errors might have been committed. Bureaucratic governance and reductionist, short-term thinking dominated decision making.

The mythical importance of receiving a clean audit report from the AG informed conservative and risk-averse decision-making practices. Governance in the complex domain required risk-taking, experimentation, and innovation that were currently not accommodated at the municipality. Adaptive governance processes and adaptive leadership skills were mostly lacking.

A conclusion from the literature review was that the Newtonian paradigm and bureaucratic governance structures did not provide the flexibility and adaptive capacity that was required in a complex environment. A complexity paradigm would be more appropriate to navigate the fluid and unpredictable landscapes within the complex domain. This conclusion was also supported by the law of requisite variety and the law of complexity.

A conclusion from the contextual analysis was that contextual complexity was a phenomenon that emerged through complex causality. Complex causality spanned the semantic level, the level of systems, the level of worldviews and paradigms, and the level of myths and metaphors. Any proper contextual analysis should address all four levels. The current municipal IDP lacked both depth and breadth. The temporal dimension was essentially unexplored in the IDP.

Municipal decision processes were primarily linear in nature, and they discounted the complexity of contextualised decision issues. Officials' claims that they did not (did not have to) take difficult decisions might reflect a risk-averse mentality associated with the mythical importance of a clean audit report. Decision makers needed a mechanism to distinguish simple and clear issues, complicated issues, complex issues, and chaotic decision issues in order to devise decision strategies that would be appropriate for each type of decision issue. Item writing and the choice of language might influence decision processes unduly or inappropriately.

The coping capacity of the municipality had allowed it to address past disturbances quite effectively. The adaptive capacity of the municipality to address more challenging situations was rather restricted due to inappropriate worldviews, bureaucratic systems, scarce natural resources, limited funds, and a shortage of skilled, educated human talent. However, much more could be done to mobilise underutilised and available resources. A range of variables that were under the control of the municipality could be adjusted in order to enhance its performance in the complex domain.

Institutionalisation of the proposed decision framework as recommended could address most of the opportunities identified to enhance municipal decision making. Improved decision making might benefit from a proper environmental scanning effort, foresight, scenario planning, the development of desired futures, collaborative processes, adaptive spaces, and continual

reflection about the entire framework. Better design and use of feedback processes might inform OL, better governance processes and better decision making. The practical and social benefits of the study might only be realised once the framework was institutionalised.

The academic value of the study could be realised through other means as suggested below.

### **8.10 Contributions made by this study**

The application of decision-making theory, complexity theory, leadership theory, organisation theory, and governance theory to empirical data regarding current municipal decision-making practices contributes (i) academic value, (ii) practical value and (iii) social value.

Novel contributions in terms of academic value include the following:

First, the study demonstrates the application of a combination of analytical frameworks that presents different but complementary perspectives of the municipal context. These frameworks reveal much more about the context than the traditional PESTLE perspective can do on its own.

Second, a novel framework is proposed in Section 6.3 to evaluate the adaptive capacity of a municipality at three different, interconnected, and complementary levels of causality. Twelve dimensions of the framework address causality at, and across, three different causal levels. The layered perspective of adaptive capacity is an important and astute new contribution to academic literature.

Third, a practical, user-friendly, and inclusive framework for municipal decision making in a complex context is proposed in Section 7.4. This framework integrates relevant academic literature, empirical findings, and learning points related to this study. The framework addresses and integrates longer term strategy development, annual planning, and day-to-day decision making in a dynamic context.

Fourth, the application of a complexity perspective may transform and leverage municipal decision making so that much new and real, tangible public value may be created. Adoption and application of the complexity paradigm should enrich decision making through a better understanding of the nature of complex decision issues and the municipal context. It should infuse decision makers with understanding, insight and wisdom that is adequate to deal with uncertainty and unpredictability on dynamic future fitness landscapes. A complexity perspective emphasises the critical importance of visioning, foresight, adaptive capacity, creativity, innovation, collaboration and public participation in decision processes at strategic, tactical and operational levels. A complexity perspective lightens up the darkness of the blind spots associated with a reductionist perspective.

Fifth, Nutt's (2010) idea of a 'master decision maker' is appropriate in the domain of order and stability only. In the complex domain adaptive leadership and complexity leadership are appropriate and the idea of a 'master decision maker' inappropriate.

Sixth, Nutt and Wilson (2010:20) questions the relevance of research about decision making amid a complex and unpredictable global context. This study may have demonstrated the relevance and value of a complexity perspective to address decision making in the complex domain.

Seventh, the study fills a gap in academic literature regarding municipal decision making in the complex SA context.

Contributions in terms of practical value include the following:



- The study applies theoretical frameworks that suggest and demonstrate practical ways to do environmental scanning (as demonstrated in Chapter 4) and foresight work.
- An analysis of item writing suggests several ways to guard against the potential misuse of this process step. The current standard template for item writing can be adjusted to accommodate suitable framing for different types of decision issues.
- This study exposes the perceived importance of a clean audit report as a myth. This myth informs risk-averse and conservative decision making in the complex domain. It is also used to manipulate decision making.
- Defects in the performance management system are exposed. Performance management is focused on inputs rather than impacts of municipal decisions and processes. It informs mediocre performance and decisions that benefit officials rather than taxpayers and residents.

Novel contributions in terms of social value include the following:

- Adoption of the complexity paradigm by leaders and decision makers will enhance their capacity to co-create a sustainable municipal governance system in collaboration with residents and other stakeholders. It will improve their contextual awareness and their ability to deal with uncertainty and unpredictability.
- The social value of the decision framework may only be realised once the framework is properly institutionalised, and its users trained in its application. Only then, residents and other stakeholders will experience the benefits in terms of public value directly and indirectly. Participants trained in the use of the framework and its processes may create value by applying relevant aspects of the framework elsewhere.
- Collaborative forums are suggested to inform municipal decision making. Such forums may develop the social capital of communities and networked participants and provide the municipality with collective wisdom, probably at a minimal cost to the municipality. It may also enhance the public's perception of the municipality and its reputation.

### **8.11 Generalisability of study findings**

Complexity theory suggests that complex systems are incompressible, and that each complex system defined within its context is unique (Cilliers, 1998:4; Richardson *et al.*, 2007:29). These statements challenge the notion of external validity of study findings about complex systems, namely, as to whether the results of a study of a complex system can be generalised beyond the specific research context within which the study was conducted (Bryman, 2012:47).

The epistemology of a complex systems perspective allows for limited and approximate knowledge only (Capra & Luisi, 2014:82). The nature of complex systems and the contingent role that context plays always limit the generalisability of the findings of studies of complex social systems. Generalisability is always limited, and the researcher has to specify these limits (Byrne 2009:102). Eoyang (2011:318) agrees, stating that "it is unreasonable to expect any two situations to be similar enough to support validity or to be predictable enough over time to allow for reliability". Therefore, no claims are made as to the generalisability of the findings of this study.

### **8.12 Recommendations for further research**

Recommendations for further research are the following:

A multiple-case case study of the myths, metaphors, paradigms, and worldviews that inform municipal decision making within successful and unsuccessful municipalities may contribute to an understanding of the possible leverage effects exerted by mental models and frameworks on municipal decision making and performance. Such a study may reveal patterns and insights that can be used to reconfigure or re-orientate the mind models of current leaders.

A study of the impact of different leadership styles on municipal decision making and performance may indicate what combination(s) of leadership styles is/are appropriate and inappropriate for municipal leadership. Results from this study may inform the recruitment and selection processes of leaders, senior officials, and councillors.

A follow-up action learning study to evaluate the practical implementation of the proposed decision framework at the Hessequa municipality or another municipality is proposed. Results from such a study may inform the improvement or redesign of the framework proposed by this study.

The practical implementation of the research findings may benefit from the further development of several more detailed resources. A questionnaire based on the adaptive capacity framework model may indicate the strengths and weaknesses of a municipality (or perhaps any complex adaptive social system). More detailed frameworks for each component of the conceptual decision framework may inform and facilitate the practical application of the framework. Practical implementation of the decision framework may also benefit from checklists (e.g., to evaluate the nature of a contextualised decision issue), flow charts, and implementation plans that integrate long term planning cycles, five-year planning cycles, annual planning cycles, and shorter term planning cycles. Questionnaires to evaluate the appropriateness of various leadership styles, governance models, and decision styles to deal with different kinds of contextualised decision issues may be developed by multi-disciplinary teams.

The application of both the novel adaptive capacity framework and the conceptual framework for decision making to other types of complex and adaptive social systems may lead to improvements of the framework and the wider application thereof.

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## APPENDIX A: FEATURES OF A TRADITIONAL LITERATURE REVIEW AND A SYSTEMATIC LITERATURE REVIEW

Feature	Traditional literature review	Systematic literature review
<b>Paradigm</b>	Aligned with a constructivist or a positivist qualitative research paradigm.	Aligned with a positivist, scientific, quantitative research paradigm.
<b>Aim</b>	A broad understanding and description of the field of study.	Tightly specified aim and objectives with a specific review question.
<b>Scope</b>	Big picture.	Narrow focus.
<b>Study protocol</b>	No formal study protocol; allows for creativity, flexibility and exploration.	Detailed, documented transparent protocol with review methods based on a comprehensive search strategy, creating an audit trail.
<b>Sources of literature</b>	Well-known articles are included, but non-exhaustive.	All sources (websites and databases) of published and unpublished literature.
<b>Identifying studies to consider for review</b>	Less structured, probing, flexible, following up on leads.	Rigorous and comprehensive search for ALL studies.
<b>Selection of studies</b>	Purposive selection by reviewer, introducing selection bias.	Specific predetermined criteria for including and excluding studies.
<b>Quality assessment</b>	Based on reviewer's opinion.	Rigorous appraisal with checklists to assess the methodological quality of studies.
<b>Analysis and synthesis</b>	Discursive.	In tabular format and short summary answers.
<b>Methodological report</b>	Not necessarily given.	Must be presented for transparency.
<b>Resources required</b>	One or more reviewers involved over relatively shorter periods to fit budget and time constraints.	Normally two or more experts involved over extended periods; review is likely to be expensive.
<b>Conclusions</b>	May be evidence-based, but still subject to reviewer's bias.	Conclusions are evidence-based.
<b>Reproducibility</b>	Impossible to replicate.	Thorough documentation of review process allows for reproducibility.

## APPENDIX B: THEORETICAL ASPECTS OF MODEL-BUILDING

Sociologist Max Weber (1864-1920) developed a conceptual tool called the “ideal type” for use in the social sciences. This concept of an ideal type is a methodological device intended to represent a concrete individual phenomenon in terms of a synthesis of its essential and typical characteristics (Daudin & Pierre, 2009:1-2). Although an ideal type can never be validated in terms of its correspondence to reality its “validity can be ascertained only in terms of its adequacy” to represent a real phenomenon (Stanford Encyclopedia of Philosophy, 2017).

Despite concerns about Weber’s own incomplete definition of “ideal type”, the heuristic use thereof in the social sciences has the following qualities (Swedberg, 2018:184):

- A researcher can use an ideal type for an initial step in the analysis of empirical facts regarding a new topic that is explored.
- It provides a “better handle on empirical reality” through a comparison of reality with the ideal type.
- The heuristic application of the ideal type through these comparisons leads to useful discoveries.

There are similarities between the “ideal type” concept introduced by Weber, and the concept of “idea models” in the study of complex systems as explained by Mitchell (2009:211). Idea models are relatively simple models, defined in terms of familiar concepts, and are used by complex system researchers “to gain insights into a general concept without the necessity of making detailed predictions about any specific system” (Mitchell, 2009:211).

Mitchell (2009:221) refers to the following typical applications of idea models:

- To explore general mechanisms underlying both complicated and complex phenomena.
- To evaluate the plausibility of a proposed mechanism for a phenomenon.
- To study variations in system behaviour when system parameters are adjusted.
- To prime one’s intuition about complex phenomena.

Idea models have advanced science and policymaking through new insights, new ways of thinking, and improved models within the domain of complexity (Mitchell, 2009:222).

A model is a metaphorical description of reality (Byrne & Callaghan, 2014:6), or “a basic illustration of a process that can be used to help understand the nature of theories, constructs and concepts in a specific context” (Bezuidenhout, 2014:47). Models identify and illustrate the most important concepts of a theory and the dynamic interrelationships between them. A model can also be described as “a simplified representation of some ‘real’ phenomenon” in terms of familiar concepts and mechanisms. Models are used to simulate complex phenomena or to predict future behaviour of systems (Mitchell, 2009:209-211). Morgan (2018:340) defines models as “systematic depictions of the relationships among a set of concepts”. When these models represent the findings of qualitative research, they depict the relationships among themes (i.e., the core concepts identified through thematic analysis) as the elements represented in the model.

Morçöl asserts that complexity theory can be used as a metatheoretical framework to help guide inquiries into the workings of complex social systems. He adds that a researcher can generate conceptual models ... using this framework, which can be empirically tested in order to enhance our understanding of social phenomena (Morçöl, 2012:266).

## APPENDIX C: LETTER OF MUNICIPAL APPROVAL FOR THE STUDY

**HESSEQUA**  
Munisipaliteit / Municipality / U Masipala



*Rig alle korrespondensie aan die Munisipale Bestuurder  
Address all correspondence to the Municipal Manager*

Tel: (028) 713 8000  
Faks / Fax: 086 4015 118  
Posbus / P.O. Box 29, RIVERSDAL(E), 6670  
E-pos / E-mail: [info@hessequa.gov.za](mailto:info@hessequa.gov.za)  
[www.hessequa.gov.za](http://www.hessequa.gov.za)  
Van den Bergstraat  
RIVERSDAL(E)

Verw. / Ref: Our ref:

Navrae/Enquiries: J JACOBS

26 Mei 2016

**Mnr WTB Janse van Rensburg**

**ALBERTINIA**

**6695**

**Geagte Mnr**

**INSAKE: NAVORSING IN VERBAND MET BESLUITNEMING OP PLAASLIKE  
REGERINGSVLAK**

Ons bevestig hiermee dat 'n item gedien het op 24 Mei 2016 insake bogemelde aangeleentheid en bevestig ons dat daar as volg besluit is:

**RESOLUTION / BESLUIT**

1. Dat die Uitvoerende Burgemeesterskomitee die versoek dat Hessequa Munisipaliteit as gevallestudie gebruik word in doktrale navorsing in verband met besluitneming op plaaslike regeringsvlak, met spesifieke klem op plaaslike ekonomiese ontwikkeling, **goedkeur**, op voorwaarde dat die navorser 'n vertroulikheidsooreenkoms onderteken.
2. Dat kennis geneem word dat die huidige Speaker, Rdl (Dr) EJ Prins, as Raadgewer vir die navorser, Mnr Boy Janse van Rensburg optree.
3. Dat die navorsing reeds met die huidige Raad in aanvang neem en dat die werksprogram en metodiek met die nuwe Raad na Augustus 2016 uitgeklaar word.

**STREEKKANTORE / REGIONAL OFFICES**

**ALBERTINIA**  
Tel: (028) 713 7858

**STILBAAI**  
Tel: (028) 713 7831

**SLANGRIVIER**  
Tel: (028) 713 7892

**JONGENSFONTEIN**  
Tel: (028) 713 7850

**HEIDELBERG**  
Tel: (028) 713 8019

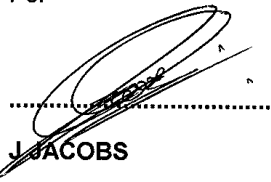
**GOURITSMOND**  
Tel: (028) 713 7855

**WITSAND**  
Tel: (028) 713 7868

Baie dankie.

Die uwe

Per

A handwritten signature in black ink, appearing to be 'J. Jacobs', written over a horizontal dotted line. The signature is somewhat stylized and overlaps the line.

**J. JACOBS**

**MUNISIPALE BESTUURDER**





**Approval to conduct a design thinking workshop** with officials and councillors towards the end of the field work phase (end of 2019) where the ideal decision-making process within existing constraints can be developed for the municipality.

**Approval to conduct a few (probably three to four) focus group interviews** with officials and councillors, each lasting not more than about two hours.

**Approval to interact with a few knowledgeable people**, or key informants, in person during office hours and by means of email. In the ideal case this will include the municipal manager and the director of the department for corporate services.

**Approval to attend a few typical meetings** where decisions are discussed or strategy is formulated (e.g., a portfolio committee meeting, an executive committee meeting of the mayor, a 'bosberaad') to observe an actual decision-making process in action.

If possible and available, a **work area** (table and chair) in the library or an unoccupied office or area where I can work on my laptop when visiting the municipality.

**Access to municipal venues** to conduct interviews and focus group sessions.

In return I offer the following benefits to the municipality during the study through presentations, discussions and work sessions:

A better understanding of the nature of the external contexts of the municipality.

The ability to distinguish between contexts or scenarios that can be characterised as stable and orderly versus those that are volatile, uncertain, complex and ambiguous. Different decision-making approaches apply to each scenario.

The ability to differentiate between decision issues regarded as simple, complicated, complex and disorderly in order to identify an appropriate decision-making strategy.

New insights into municipal decision-making practices, and recommendations or frameworks to enhance these practices.

A copy of the dissertation will be handed to the municipality upon completion of the study.

The attached protocol for the case study provides more background regarding the research.

Document analysis will commence during the last quarter of this year and the first interviews and focus group sessions are planned for early 2019. All interviews and focus groups should be completed during 2019.

I hope and trust that the municipality will reconfirm its commitment to support this study. Successful completion of this research should benefit the municipality as well as the communities involved.

It would be a pleasure to work with the municipality and I am looking forward towards the project. More detail about the field work is attached under the following headings:

- Part A - Overview of the case study
- Part B - Data collection procedures
- Part C - Data collection questions
- Part D - Guide for the case study report

Your favourable feedback regarding the above requests will be highly appreciated.

Yours sincerely,

WT Boy Janse van Rensburg

## PROTOCOL FOR CONDUCTING CASE STUDY RESEARCH REGARDING DECISION MAKING UNDER CONDITIONS OF COMPLEXITY AT HESSEQUA MUNICIPALITY

### PART A: OVERVIEW OF THE CASE STUDY

The focus of this case study research is on Hessequa municipality as a decision-making entity within the complex contextual environment of South African local government. This research is conducted by WT Boy Janse van Rensburg under the auspices of the School of Public Leadership at Stellenbosch University as part of his PhD study. The decision to select Hessequa municipality for the single-case study was motivated by the superb performance of the municipality over a number of years in a national context, and by the fact that the researcher resides in the Hessequa municipal area.

The main objective of the study is to enhance the capacity of Hessequa municipality to take decisions under conditions of complexity. The intent is to identify a set of conditions relating to the municipal context, decision-making processes, a decision making model, and the municipality as decision-making entity that can facilitate such enhanced decision making within a complex context. Thus, the unit of analysis of the case study is the municipality as collective decision-making entity whereas the units of data collection include individual people, individual documents, individual decisions, groups of decision makers and stakeholders, and individual events such as a meeting or caucus session.

The main research question is the following:

What conditions should enhance the decision-making capacity of the Hessequa municipality within the South African context by 2020?

In order to address this main research question, the following sub-questions are formulated:

What are the *main features of the current context* that Hessequa municipality has to consider in its decision-making processes?

How has the Hessequa municipality actually been taking decisions since the 2011 municipal election?

What are the *essential features of the Hessequa municipality*, acting as a *decision-making entity or system* that should enhance its capacity to deal more effectively with decision making under conditions of complexity?

What are the *characteristics of a decision-making model or framework* that can be used by Hessequa municipality to facilitate municipal decision-making?

The main hypothesis is that decision makers need a framework or approach for decision making that is adequate to deal effectively with decision situations characterised as complex. One of the theoretical propositions is that the municipality currently uses a rigid, structured process model for decision making that resonates well with a Newtonian, reductionist worldview of reality. Such a model is not adequate to deal with complex decision issues. Another proposition is that a complexity paradigm or perspective should expand the framework for understanding complex decision issues in order to address them effectively.

The theoretical frameworks utilised for the case study include decision-making theory and complexity theory. Both inductive and deductive analytical processes will be employed to link collected data to the theoretical frameworks or to rival explanations.

This protocol aims to inform all stakeholders involved in this case study research about the main elements and aims of the study. It also functions as a guide and a standardised agenda to focus the researcher on his line of inquiry. As an aid in carrying out data collection, this protocol specifically contributes to the increased reliability of this study (Yin, 2014:84).

Since approval of the research proposal in June 2016 much time has been spent on evaluating various research methods for this research. A case study approach was chosen, and the associated data collection methods have been studied in more detail since then. A comprehensive literature review of decision-making theory and complexity science has been in process since early 2017. The literature review informs the types of questions to pose during depth interviews, and the topics to discuss during focus group sessions. Data collection will commence during the first semester of 2019.

## PART B: DATA COLLECTION PROCEDURES

Fieldwork will be conducted by WT Boy Janse van Rensburg. He can be contacted at cell phone number 083 6042 108 or at his email address [aloemotors2@gmail.com](mailto:aloemotors2@gmail.com). Individuals may be involved at some stages to assist with administrative tasks involved in data collection.

Data will be collected through the primary processes of document searches, depth interviews with knowledgeable individuals, focus group interviews with groups of councillors, municipal officials and members of the Hessequa communities. Secondary sources of data will include direct observation of participants during decision-making processes, and field work notes.

Data will be collected from documents relating to decision-making practices (such as minutes of meetings, comments from key decision makers and stakeholders, personal notes, supporting documentation, reports relating to decisions, etc.), the internal and external contexts (such as the Integrated Development Plan) as well as the document trails associated with specific decisions may contain useful information for this study. Documentation includes hard copies and electronic versions of documents stored in archives and on personal computers (where possible and allowed). No specific documents are deemed to be excluded as potential sources of data. Thus, the municipality is requested to make available all relevant documents in terms of a suitable *agreement, signed by the researcher and the municipality*.

Important findings based on documentary data include the identification of patterns of decision making, trends in certain variables related to decisions and decision making. Data extracted from documents will be handled with care and confidentiality. All data extracted from municipal documents for inclusion in the dissertation will be cleared by a representative of the municipality as appointed by the municipal manager.

Focus group interviews will be conducted with groups of councillors and officials respectively on issues that emerge during the literature reviews and initial analyses of municipal documents. Once core themes and issues have been identified through focus groups sessions depth interviews will be held with individual councillors, officials and community members.

Depth interviews will be conducted with acting councillors and officials from the Hessequa municipality that are involved in decision making. These participants will be interviewed on issues related to decision-making processes and decision-making frameworks in general, the internal context of the municipality as well as the external context within which local government functions.

Additional insights into the decision-making processes will be gained if permission is granted to attend one or more meetings of a portfolio committee, an annual 'bosberaad', a caucus meeting, an EMC meeting, and a meeting of the full council in order to observe municipal decision-making processes in action. Such observations will add to the richness of the understanding of decision making by the municipality.

Interviews will be conducted with individuals, stakeholders and groups from communities within the geographic area of the Hessequa Municipality to capture data regarding their perceptions and experiences relating to decision-making processes of the municipality. Often the community members are directly affected by or involved in such decision-making processes of the municipality. The objective is to triangulate data from different sources and to evaluate possible rival explanations of decision-making processes that differ from the theoretical frameworks.

Before any fieldwork will commence the current municipal council, elected on 3 August 2016, must be informed about this case study research in order to (hopefully!) reconfirm the commitment of the previous council to support the project. (The previous municipal council confirmed their support of the study in writing before the research proposal was approved on 9 June 2016.)

Access to municipal archives and relevant records and documents will have to be requested and confirmed in writing again (although such approval was given early in 2016 by the previous municipal council).

The ethical code of the Stellenbosch University applies, and this code will guide the behaviour of both the researcher and all individuals he may be accountable for. Privacy and confidentiality of individual participants will be protected and honoured.

The municipal manager will be requested to make some workspace or office space available for this project – if possible. Access to buildings, computer data bases and networks, archives and venues will have to be negotiated and confirmed as well. Access to municipal offices will be limited to official work hours.

If required a formal presentation about the study can be made to the full municipal council to mobilise their support, participation and commitment to the study. All individual officials and councillors to be interviewed individually or in groups will be informed personally in writing about the project and their participation will be requested.

#### PART C: DATA COLLECTION QUESTIONS

Questions posed to individuals and focus groups will be derived from the main research question above and the associated research sub-questions. The interview guide for the depth interviews is available as a separate document (not to be made available to interviewees before the interviews). The core themes to be covered by the focus groups will focus on issues related to the following:

The *internal and external context* within which the Hessequa Municipality takes decisions.

The *actual process of decision making* employed by the Hessequa Municipality.

*Features of the Hessequa Municipality*, acting as a decision-making system, which affect its capacity to deal effectively with decision issues under conditions of complexity.

A *model or framework* to facilitate decision making by the municipality.

The following are examples of the kind of questions that will be asked about the four core themes:

Introductory questions:

What is your definition of a decision?

How do you define a good decision?

How do you define a bad decision?

How do you define a difficult or tough decision? What kind of decision issues are perceived as difficult or tough to address? What kind of decision issues are perceived as easy to address?

How would you define the concept of complexity?

How would you describe the 'context' within which the municipality takes decisions?

**Questions relating to the context within which decisions are taken:**

What factors are considered when a decision has to be taken by the municipality?

What factors within the municipality influence the decision-making process?

What factors outside the municipality influence the decision-making process?

What role does time and timing play in municipal decision making?

Which temporal aspects (i.e., from the past, the present or future) are being considered during decision making?

Who or what influences the decision-making processes of the municipality?

Who or what is affected by the decision-making processes of the municipality?

What is the relevance of elites and hierarchies in the decision-making processes of the municipality?

What role do the various participating individuals and political groupings play during the processes of decision making?

What are the contributions made by the different individuals and groups during decision-making processes?

**Questions relating to the decision-making process:**

Can you please describe the standard decision-making process of the municipality from beginning to end?

What are the different roles that people play in the decision-making process?

What activates or starts the decision-making process?

How does the municipality deal with the large number of decisions it has to process?

How would you categorise the different types of decision issues that the municipality has to deal with?

How does the municipality differentiate amongst the various types of decisions it has to address?

What do you experience as positive / negative regarding decision-making by the municipality?

What role does power and politics play in decision making?

Who takes ownership or accountability for decisions made?

How do the participants deal with aspects of complexity (such as time delays, feedback loops, leverage effects, unintended consequences and other systemic issues)?

How would you improve the decision-making practices of the municipality?

What drives or energises the process of decision making towards conclusion?

**Questions relating to the features of the Hessequa Municipality that affect its capacity to deal with decision making under conditions of complexity:**

Which features of the municipality itself enhances its current ability to deal with decision issues perceived as complex?

Which features of the municipality itself could enhance its future capacity to deal more effectively with such complex decision issues?

How could the decision-making capacity of the municipality be improved?

**Questions relating to a model or framework for decision making:**

What decision-making models are used by the municipality for decision-making?

What kind of inputs and resources are used to support decision makers in the process of decision making?

How would you draw a picture of the decision-making process of the municipality?

Aspects in focus during document analysis will typically include the following:

Where does the document fit into the decision-making process?

What does the document reveal about the nature of the decision-making processes of the Hessequa Municipality?

What does the document disclose about the way participants or stakeholders deal with the dimensions of complexity of decisions and the contextual environment?

What consistency and continuity is there in documentation about decision-making processes?

What aspects of decisions and decision making are not covered in documentation?

How are decisions made under conditions of complexity in Hessequa Municipality?

What type of resources is used to support decision makers in the processes of decision making?

How do the decision makers deal with complexity during decision-making processes?

#### PART D: GUIDE FOR THE CASE STUDY REPORT

The first recipient of the completed research report, which is a scholarly, academic PhD dissertation, will be the evaluation committee of the Stellenbosch University. Both a hard copy and a presentation of the research and findings will be prepared for the evaluation committee involved.

Hessequa Municipality will also receive a bound copy of the dissertation. A presentation of the findings will be made to the full municipal council and its guests (if required). The presentation will contrast current decision-making practices with possible alternative decision-making practices which will be based upon the research findings. The advantages and disadvantages of both routines will be discussed. In the ideal case an advanced but simple, user-friendly framework for decision making together with a set of supporting conditions for enhanced decision making will be shared with the audiences!

Included in both the dissertation and the presentations will be supporting evidence and material that can be used for educational purposes. The capacity of both current and future municipal officials and councillors to deal more effectively with complexity could be developed through this research.

All documentation in hard or soft copy consulted for this research has to be archived and stored safely for later inspection or future secondary analysis where possible and when allowed.

I hope that all participants and stakeholders who contributed to this research will also harvest the fruit of their efforts and contributions during the study. May this fruit be in the form of wisdom to take wise decisions under conditions of complexity in a VUCA (Volatile, Uncertain, Complex, Ambiguous) or TUNA (Turbulent, Uncertain, Novel, Ambiguous) world!

NOTE: This Case Study Protocol is structured according to the framework proposed by Yin (2014):

Yin, R.K. 2014. *Case study research: Design and methods*. London: Sage.

## APPENDIX E: EMAIL WITH CONFIRMATION OF APPROVAL AND CONDITIONS FOR RESEARCH

**From:** Lucinda Prins [lucinda@hessequa.gov.za]  
**Sent:** 26 September 2018 11:41 AM  
**To:** Aloe Motors  
**Cc:** marina  
**Subject:** FW: UBK Besluit

Goeie more mnr

Hiermee die besluit van die UBK vir u vriendelike aandag.

Baie dankie.

Lucinda

File number / Verwysingsnommer: 3/R

Meeting date / Vergadering datum: 26 September 2018

Report by / Verslag deur: Director: Corporate Management – Ms AM Griesel

### RESOLUTION / BESLUIT

That the Committee approves and reconfirms a previous request to conduct research on decision making under conditions of complexity in Hessequa, on the following conditions:

1. That access to municipal facilities, documents, requests for interviews and interaction with knowledgeable people, as well as requests to attend meetings as an observer, should be submitted in a structured manner via prior written application through the office of the Manager: Administration.
2. That the Manager: Administration facilitates the field work of the researcher within certain law (e.g., PAIA) and in such a way that field work by the researcher, not interrupt the day-to-day work of individuals.
3. That the collection of information and methodologies used to conduct this research, adheres to the Municipal ICT policy, POPI and PAIA.
4. That all access to Municipal Systems, be pre-approved by the Municipal Manager.
5. That the first semi-structured interviews be conducted by distributing the questions via email, where after formal interviews with participants can be facilitated.
6. That normal protocol to attend certain meetings, will prevail, with prior written request to the office of the Manager: Administration.
7. That a design thinking workshop with officials and Councillors towards the end of the field work phase (end 2019) with the topic "*IDEAL DECISION MAKING PROCESS WITHIN EXISTING CONSTRAINTS*", be conducted.
8. That focus group interviews be coordinated by the Manager: Administration in consultation with the Municipal Manager and the Speaker.
9. That the researcher may make use of the Riversdale library where Mr B Janse van Rensburg can work on his laptop when visiting the Municipality.
10. That the ethics code of the Stellenbosch Municipality will apply to this study and the privacy of individual participants be protected and respected.
11. That Mr B Janse van Rensburg signs a Declaration of Confidentiality with the municipality.



12. That Mr B Janse van Rensburg be exempted from paying the standard fee of R35 in terms of PAIA applications, as Hessequa Municipality will benefit from the research.
13. That the above-mentioned recommendations may be reviewed if not adhered to.

3<sup>rd</sup> GREENEST MUNICIPALITY IN SOUTH AFRICA  
GREENEST MUNICIPALITY IN THE WESTERN CAPE 2015 AND 2016  
CLEAN AUDIT REPORT 2013/2014 2014/2015 2015/2016  
FIRST MUNICIPALITY IN SOUTH AFRICA TO HAVE ALL SIX BEACHES FEATURE IN THE  
BLUE FLAG PROGRAMME

Acceptable ideas are competent no more.

Competent ideas are not yet acceptable.

This is the dilemma of our time.

Stafford Beer

## APPENDIX F: CONFIDENTIALITY AGREEMENT BETWEEN RESEARCHER AND HESSEQUA MUNICIPALITY

### CONFIDENTIALITY AGREEMENT

Between

**HESSEQUA MUNICIPALITY**

[hereinafter called Municipality]

and

**BOY VAN RENSBURG**

[hereinafter called The Researcher]

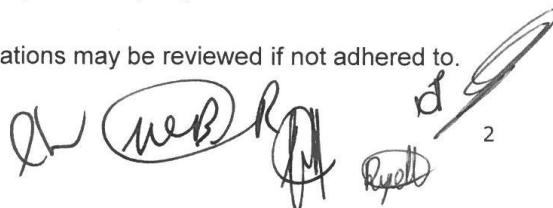
The image shows four handwritten signatures in black ink. The first signature is circled and appears to be 'WEBR'. The second signature is a stylized 'H'. The third signature is 'Rylands' with 'LW' written below it. The fourth signature is a large, sweeping loop.

## PREAMBLE

### WHEREAS: -

On the 26<sup>th</sup> day of September 2018 as per resolution 6.1.5.1.4, Council approved and reconfirmed a previous request of Mr. Boy Van Rensburg (the researcher) to conduct research on decision making under conditions of complexity in Hessequa, on the following conditions:

1. That access to municipal facilities, documents, requests for interviews and interaction with knowledgeable people, as well as requests to attend meetings as an observer, should be submitted in a structured manner via prior written application through the office of the Manager: Administration.
2. That the Manager: Administration facilitates the field work of the researcher within certain law (e.g. PAIA) and in such a way that field work by the researcher, not interrupt the day to day work of individuals.
3. That the collection of information and methodologies used to conduct this research, adheres to the Municipal ICT policy, POPI and PAIA.
4. That all access to Municipal Systems, be pre-approved by the Municipal Manager.
5. That the first semi-structured interviews be conducted by distributing the questions via e-mail, where after formal interviews with participants can be facilitated.
6. That normal protocol to attend certain meetings, will prevail, with prior written request to the office of the Manager: Administration.
7. That a design thinking workshop with officials and Councillors towards the end of the field work phase (end 2019) with the topic "*IDEAL DECISION MAKING PROCESS WITHIN EXISTING CONSTRAINTS*", be conducted.
8. That focus group interviews be coordinated by the Manager: Administration in consultation with the Municipal Manager and the Speaker.
9. That the researcher may make use of the Riversdale library where Mr B Janse van Rensburg can work on his laptop when visiting the Municipality.
10. That the ethics code of the Stellenbosch Municipality will apply to this study and the privacy of individual participants be protected and respected.
11. That Mr B Janse van Rensburg signs a Declaration of Confidentiality with the municipality.
12. That Mr B Janse van Rensburg be exempted from paying the standard fee of R35 in terms of PAIA applications, as Hessequa Municipality will benefit from the research.
13. That the abovementioned recommendations may be reviewed if not adhered to.



Handwritten signatures and initials, including a large signature that appears to be 'wbr' and other initials, with a small number '2' written below them.

Therefore, the Parties wish to record in writing a Confidentiality Agreement to structure the relations between the Parties to prevent any uncertainty and to arrange for various matters incidental thereto.

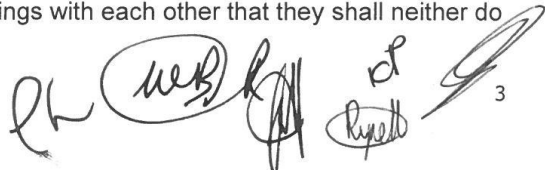
**NOW THEREFORE THE PARTIES HEREBY AGREE AS FOLLOWS:**

**2. CONFIDENTIALITY**

- 2.1 The parties recognize that by nature of their relationship between them, they may have occasion to review and receive proprietary or confidential information or material of each other.
- 2.2 Each party undertakes in favour of the other, in respect of the Confidential Information to maintain secret and confidential any such confidential information disclosed by the other that was not previously known to a party or to the public, or that was not in the public domain prior to such disclosure.
- 2.3 Any information obtained free from restriction on disclosure or use from a third party.
- 2.4 Upon request the parties agree to promptly return to each other any written material and other forms of material reproduction which contain confidential information obtained from or through a party, including all memoranda, copies or notes made by a party or disclosed or transmitted to a party by the other party which constitute confidential information.
- 2.5 The Parties agree that they shall protect any confidential information that may be disclosed pursuant to the provisions of this agreement, using the same standard of care that each Party applies to safeguard its own proprietary, secret or confidential information and that the information shall be stored and handled in such a way as to prevent any unauthorized disclosure thereof.
- 2.6 This clause shall continue in force notwithstanding the termination of this Agreement howsoever caused.

**3. CO-OPERATION AND GOOD FAITH**

- 3.1 The parties undertake to co-operate with each other in all respects in order to give effect to the intent and import of this Agreement.
- 3.2 In the implementation of this Agreement, the parties undertake to observe the utmost good faith and they warrant in their dealings with each other that they shall neither do

The image shows several handwritten signatures and initials in black ink. From left to right, there is a signature that appears to be 'R', a signature that appears to be 'W.B.', a signature that appears to be 'P.A.', a signature that appears to be 'D.P.', and a signature that appears to be 'R. van der...' followed by a large, stylized flourish. A small number '3' is written at the end of the last signature.


anything nor refrain from doing anything which might prejudice or detract from the rights, assets or interest of any other(s) of them.

Dated at Riversdale on this 11<sup>TH</sup> day of February 2019.

As witnesses:

1. 


  
JOHANNES JACOBS (MUNICIPAL  
MANAGER)

2. 

Dated at Albertinia on this 4<sup>th</sup> day of February 2019.

As witnesses:

1.  H.C. van Heerde

  
WEB VAN RENSBURG (THE  
RESEARCHER)

2.  Rynette van Vuuren

## **APPENDIX G: INTERVIEW GUIDE FOR DEPTH INTERVIEWS**

PART A: ADMINISTRATIVE DETAIL TO BE COMPLETED BY RESEARCHER BEFORE INTERVIEW.

Venue:

Date:

Time:

Date on which appointment is made:

Name of interviewer:

Expected duration:

Actual duration:

Name of participant/interviewee:

Code Name of Participant:

Affiliation of participant/interviewee:

Purpose of interview:

Assuring anonymity:

Informed consent:

Method of record keeping: (note taking; recording; assistant)

Equipment required/used:

Check list: Tape recorder, extra batteries, notebook, pens, flip chart, etc.

PART B: GUIDELINES FOR THE USE OF THIS GUIDE

Notes to the interviewer:

This series of interviews are conducted during the initial stages of the study before any intervention to influence decision-making practices within the Hessequa Municipality is undertaken.

This interview guide provides guidelines for semi-structured interviews only and is not a checklist. The questions below should preferably be covered in the same sequence as stated. Detail-oriented sub-questions, follow-up questions, probing questions and prompts listed below each main question in Part C can be used skilfully to stimulate more responses if the aspect or main question is not spontaneously covered by the participant.

Maintain an appreciative and respectful tone of voice during the interview.

Request the interviewee to provide concrete instances and examples to support statements.

Notes to the participant(s):

The purpose of this interview is to understand how decisions are made within the Hessequa Municipality (in order to devise ways to improve such decision-making practices). Your knowledge is important to help develop this understanding. Thank you for your contribution to this process by answering a number of questions. More than 12 individuals will be interviewed as well as three or four focus groups. The privacy of all people involved will be protected. Information collected will be combined in a single research report as part of my studies at the Stellenbosch University.

Participants should strive to be as descriptive in their responses as possible throughout the interview. Please provide concrete examples in support of statements. Please focus on the specific question posed when answering.

The interview will be recorded on a tape recorder as it is impossible to write down all the important information you may share. Participants have the right to switch off the recorder or to withdraw from the interview at any time for any good reason. However, I need your permission to tape-record this interview.

All questions relate to decisions made by the Hessequa Municipality and your involvement in them.

It is important that you as participant give your personal point of view, your perspectives, your perceptions, your experiences and your understanding of the issues to be discussed in your own words. Individual responses are confidential, and your privacy will be protected. General information will be shared and used in my report.

You may ask why I ask a specific question as the interview proceeds. You may also choose not to answer a specific question. You may even decide not to participate any longer in this research.

In order to complete the interview within about 60 to 90 minutes we need to focus the conversation.

The style of the interview will be conversational and relaxed but focused. The interview will be recorded.

#### PART C: STANDARDISED MAIN QUESTIONS WITH DETAIL-ORIENTED QUESTIONS AND TRANSITIONS

I have an introductory question followed by four main questions (that are directly linked to four corresponding research sub-questions). These four main questions are linked to the main research question of this study stated as follows:

What conditions could enhance the decision-making capacity of the Hessequa Municipality within the current complex South African context?

Each main question relates to a core aspect of municipal decision making. The four questions may be followed by follow-up questions to get more detail on responses, or by probing questions to clarify something that was said. Prompts may be used as aids to get participants talk about something that may be of interest. We shall address the four main issues in a specific order. Answer the questions in as much detail as possible and with examples, please. Be specific, clear and brief. Argue an issue if different points of view exist. Before we get to the four main questions, let us start with the introductory question. Please provide examples to support your responses.

### **Introductory questions:**

What role do you play in municipal decision making?

What is your unique contribution to the municipal decision-making processes?

What role does your party (or department/directorate) play in municipal decision making?

How would you define the ideal councillor that should represent your party at the municipality?

What sources of information and advice do you use for decision making (both inside the municipality and outside)?

What is your definition of a decision?

How do you define a good decision?

How do you define a bad decision?

How do you define a difficult or tough decision?

What kind of decision issues are perceived as difficult or tough to address?

What kind of decision issues are perceived as easy to address?

How would you define the concept of complexity?

Which factors contribute to complexity in the Hessequa Municipality?

How would you categorise, or group together the different kinds of decision issues that the municipality has to deal with?

How does the municipality then deal with each of these categories of decision issues?

How do you deal with complex decision issues?

**Transition:** You have now discussed in broad terms how decision making takes place at the municipality. The following main questions focus on specific aspects regarding municipal decision making. Decisions are not taken in a vacuum or in isolation but are influenced by various factors from inside the municipality and outside the municipality. The next question is about the context within which decisions are taken.

**Main question 1:** What are the **main features of the context (or environment)** that Hessequa Municipality has to consider in its decision-making processes?

How would you describe the context within which the municipality takes decisions?

How would you describe the culture within which the municipal council takes decisions?

What are the key uncertainties that the municipality has to deal with?

What factors are considered when a complex decision has to be taken by the municipality?

What factors inside and outside the municipality influence decision-making?

How does the municipal financial plan and budget influence decision making?



How do the various factors influence decision making within the municipality?

At what stage do they influence decision making – the consultation stage, the decision stage, or the implementation stage?

What contributes to the complex nature of the environment within which the municipality takes decisions?

Which features of the context make it difficult to take decisions about complex issues?

**Follow-up questions and probes** can also address aspects relating to formal and informal roles played by stakeholders, relationships, skills, knowledge, values, assumptions, myths, beliefs, intentions, habits, behaviours, culture, race, time, processes of influence, type of influences, structures, boundaries, networks, interactions, chance, uncertainty, change, politics, technology, etc.

How do contextual factors (that are not people and organisations) influence decision making in Hessequa Municipality? Personal issues? Institutional issues? Political issues? Racial issues? Environmental issues? Legislative issues? Cultural issues? Social issues? International issues? South African issues? African issues?

**Transition:** We have now discussed the context within which the municipality takes decisions. Next, we discuss in more detail the process or model used by the municipality for decision making. We need to understand this in detail.

**Main Question 2:** How does the municipality take decisions under conditions of complexity?

How would you describe the decision-making process(es) of the municipal council from beginning to end?

What guides and inform decision making in Hessequa?

Are there different ways in which the municipality deals with different types of decision issues?

Which non-human aids and resources does the municipality utilise as decision-support tools?

Can you please tell me very briefly what decisions have been the most difficult/challenging/complex that the municipality has had to deal with during the past few years?

Why was it difficult/challenging/complex?

How did you go about making the decision?

Can you tell me the entire story about a complex decision issue that you participated in?

How does public participation processes influence municipal decision making?

How do good governance processes influence decision making?

What role does time and timing, or past present and future play in decision making?

Who or what is affected by the decision-making processes?

What role does power play in the decision-making processes of the municipality?

What role does ideology play in decision making?

How would you contrast DA ideology versus ANC ideology versus VF Plus ideology?

In what ways has the decision-making process of the Hessequa Municipality changed since the recent (2019) ward election in the Slangrivier ward? (The DA gained one ward from the ANC.)

How would you change the strategic focus and direction from the current focus and direction if your party becomes the governing party tomorrow?

How do you experience the relation between the councillors, the political parties, and administration?

How do the roles played by the following groups differ during decision making?

Males versus females?

Different race groups?

Experienced versus inexperienced councillors?

How, and in what way do the various stakeholders (e.g., political parties, the coalition, item writers, community members, experts and consultants, provincial and national government) influence decision making by the municipal council?

Which skills and capacities of an individual, do you think, enable that individual to deal effectively with complex decision issues?

What are all the different strategies, tactics, ways and tools that your party use to influence decision making in the municipal council?

Can you tell me the story about one of the worst decisions that the municipality has made during the past few years? Why, do you think, was it a bad decision?

Can you tell me the story about one of the most successful decisions that the municipality has made during the past few years? Why, do you think, was it a great decision?

Can you describe a case where the opposition/governing party changed your party's point of view on a critical issue in a fundamental way?

How does the municipality differentiate among, or categorise the various types of decision issues that it has to address?

How does the municipality deal with the different types of decision issues that it has to address?

What kind of inputs and resources are used to support decision makers in the process of decision making?

What are the different roles that key people in the municipality (e.g., the mayor, speaker, councillors, municipal manager and item writers) play in the decision-making process?

What impact do the item writers have on decision making?

What or who activates or starts the decision-making process?

What do you experience as positive / negative regarding municipal decision-making?

What role does power and politics play in decision making?

Who takes ownership or accountability for decisions made?

Who actually takes decisions?

What strategies does the opposition party employ to put pressure on the governing party? (Note the protest march regarding housing in Riversdale on 6 September 2019.)

How does the municipal council deal with uncertainties in decision making?

How does the municipal council deal with crisis situations?

How do you use intuition to take decisions in the municipal council?

How would you improve the decision-making practices of the municipality?

What drives or energises the process of decision making towards conclusion?

Give an example of how a really important and significant decision was processed by the municipality.

**Transition:** We have now covered the context of the municipality and actual decision-making practices of the municipality. Now the focus is placed on the characteristics of the municipality as the decision-making body.

**Main question 3:** Which factors affect the capacity of the municipality to take effective decisions under conditions of complexity?

Which features of the **municipality** affect (i.e., enhance or limit) its capacity to deal with complex decision issues?

Which features of the **municipal council** affect its capacity to deal with complex decision issues?

Which features of the **political parties** affect their capacity to deal with complex decision issues?

Which features of the **municipal councillors** affect their capacity to deal with complex decision issues?

Which **contextual factors** affect the capacity of the municipality to deal with complex decision issues?

Does the municipality have (access to) an environmental scanning function? If yes, what happens to the data and information collected?

Does the municipality use scenario planning in decision-making processes?

What do you do during decision-making processes to increase the number of perspectives on important issues?

How does the municipality learn from experience? How does the municipality capture learning?

How does the municipality deal with future uncertainty?

Probes may include aspects such as access to networks of sources of information, ability to adapt when required, ability to anticipate future possibilities, ability to be flexible and resilient, willingness to consider different points of view, willingness to ask for inputs, willingness of decision makers to challenge one another, ability to learn and to capture learning, openness of decision processes, access to an environmental data or a scanning resource, etc.

**Transition:** We have now discussed the municipal context, municipal decision-making processes and features of the municipality that affect its decision-making capacity. The next question aims to identify and define the general process or model or framework that the municipality uses to take decisions.

**Main question 4:** What model or framework is currently used to guide municipal decision-making?

Probes relate to the legislation involved, the roles of municipal portfolio committees, the executive mayoral committee, the municipal council, the mayor, provincial government, national government, communities, stakeholders, etc.

How would you describe the formal model or framework for decision making that the municipality (i.e., the municipal council) uses when important decisions are taken?

What overall strategy, goals and objectives guide municipal decision making?

Which laws prescribe decision processes in the municipality?

What role does leadership play in decision making?

How are the inputs from communities and experts incorporated in decision making?

What type of skills should a team member possess when complex decision issues are addressed?

Which factors affect the quality of decision making within the municipality?

Which of these factors can be changed to improve municipal decision making? How can these factors be changed?

What could be done to improve the capacity of the municipality to deal with complex decision issues?

**Transition:** The next few questions and themes follow on the previous main questions (unless they have been addressed already.)

#### PART D: NON-STANDARDISED QUESTIONS:

The following questions were posed to councillors serving before the term of 2016 to 2021:

- What did your council (of 2011 to 2016) put in place to support decision making by the subsequent council (of 2016 to 2021)?
- What role did the opposition party play in the former council (of 2011-2016)?
- Can you briefly describe the culture within the council during your term, with reference to the relations between the key role players (e.g., administration, speaker, municipal manager, political parties, the public, communities)?

- In what way did the strategic direction and priorities change during the political changes that took place during your term, and between your term and the current term?
- What role does leadership play in municipal decision making?
- What role does politics play in municipal decision making?
- Who decides which candidates will be representing a political party in a municipal election?
- What are the features and characteristics of the ideal candidate that your party nominates for a municipal election?
- What role does political party ideology play in decision making by the council?
- What are the desired features of an ideal councillor to qualify him or her as a valuable member of the council?
- How could the capacity of the Hessequa Municipal Council to deal with complex decision issues be enhanced?

#### PART E: CONVERSATIONAL ASPECTS:

Is there anything else regarding decision making within Hessequa that you would like to add to what you have already shared with me? What else should I know? How should I change, or remove or add questions?

To conclude, I would like to thank you very much for the interview and for your contributions.

If anything is still unclear after reviewing the notes and transcribing the recorded tape, may I contact you to confirm issues afterwards?

#### PART F: NOTES AFTER COMPLETION OF THE INTERVIEW:

How did the interview go? (Was the interviewee talkative, cooperative, nervous, well-behaved and clothed? Was it easy to establish rapport? What can be improved?)

Can the interviewee be contacted again?

Does the interviewee want to review a copy of the transcript of the interview?

Comments about the venue: Does anything need to change for the next interview?

Comments about the setting:

Salient aspects from the interview:

Effectiveness of the interview schedule: (Did it work well? How can it be improved?)

What are the main themes that emerged during the interview? (What should be changed or added to the interview schedule?)

This interview guide is informed by the following sources: Patton (2002), Miller & Crabtree (2004), Bailey (2007), Dawson (2007), Bryman (2012) and Patton (2015).

## APPENDIX H: INTERVIEW GUIDE FOR FOCUS GROUP 1 INTERVIEW – ITEM WRITING

PART A: ADMINISTRATIVE DETAIL TO BE COMPLETED BY RESEARCHER BEFORE FOCUS GROUP.

Venue:

Date:

Time:

Date on which appointment was made:

Name of interviewer:

Expected duration:

Actual duration:

Names, affiliation and contact details of participants/group members:

Name of participant	Affiliation position /	Contact details	Comments

Purpose of focus group: \_\_\_\_\_

Assuring anonymity: \_\_\_\_\_

Informed consent: \_\_\_\_\_

Method of record keeping: (note taking; recording; assistant): \_\_\_\_\_

Equipment required/used: \_\_\_\_\_

Check list: Tape recorder, extra batteries, notebook, pens, flip chart, etc.  
\_\_\_\_\_

PART B: GUIDELINES FOR THE USE OF THIS GUIDE

Notes to the interviewer:

Focus Group 1 is conducted after completion of the depth interviews with 'item writers' of the Hessequa Municipality.

This guide provides guidelines for focus group interviews. The questions below should be covered in the same sequence as stated in each breakaway group. Detail-oriented follow-up questions, probing questions, and prompts can be used skilfully to stimulate more responses and discussion if the aspect is not spontaneously covered by the group. Participants are requested to provide concrete instances and examples to support statements.

Notes to the participants in the group:

The purpose of this interview is to understand how 'items' and 'item writers' may influence decisions of the Hessequa Municipality (in order to devise ways to improve such decision-making). Your knowledge is important to help develop this understanding. Thank you for your contribution to this process by answering a few questions. The confidentiality, anonymity and privacy of all people involved will be protected. Information given by individuals will be treated as confidential but general information provided by the various groups will be used in this project, and shared. Information collected will be combined in a single research report as part of my studies at the Stellenbosch University.

Participants should strive to be as descriptive in their responses as possible throughout the interview.

The focus group discussions will be recorded on a tape recorder and will be transcribed afterwards. Participants have the right to switch off the recorder or to withdraw from the interview at any time for any good reason.

All questions relate to 'items' and 'item writers' related to the Hessequa Municipality.

Participants must give their personal point of view, perspectives, perceptions, experiences and understanding of the issues to be discussed in their own words.

You may ask why I ask a specific question. You may also choose not to answer a specific question.

The focus group must be completed within two hours. Therefore, we need to focus the conversation. We can take a short break about halfway through the session.

Main questions may be followed by follow-up questions, or by probing questions, or by prompts. Argue an issue if different points of view exist. One person talks at a time.

#### FOCUS GROUP INTERVIEW ON 'ITEMS' AND 'ITEM WRITERS' PART C: MAIN QUESTIONS

The two main questions and corresponding follow-up questions are the following:

**Main question 1:** *What are the main features of an 'item'?*

**Sub-questions:** What is an 'item'? Why is an 'item' written? What are the features of an item perceived as 'good' and an item perceived as 'not so good'? How do the contents of an item influence a decision of the municipal council? Is there a difference in the way the council deals with an item written in Afrikaans as compared to an item written in English? If the answer is yes, then explain the difference.

(Group 1 and Group 2 each formulates an answer to the above main question and sub-questions.)

**Main question 2:** *How may 'item writers' influence municipal decision making?*

**Sub-questions:** How do you become an 'item writer'? What are the features of a sophisticated item writer? How do item writers influence decision making by the municipal council? Which factors influence you as an item writer during the process of writing an item? Which sources do you consult for information when you prepare an item?

(Group 3, Group 4 and Group 5 each addresses the above main question and sub-questions.)

**PART D: CONVERSATIONAL ASPECTS:**

Is there anything else regarding items and item writers that you would like to discuss?

What else should I know?

What would be value-adding questions that can be added to the above main questions?

In conclusion I want to thank you very much for the session and for your contributions and insights.

If anything is still unclear after reviewing the notes and recorded tape, may I contact you to confirm issues afterwards?

**PART E: NOTES AFTER COMPLETION OF THE FOCUS GROUP:**

Sketch the layout of the seating plan with participant identification codes.

How did the interview go? (Was the interviewee talkative, cooperative, nervous, well-behaved and well clothed?)

Comments about group dynamics: (What can be learned from this session?)

Comments about the interview schedule: (Did it work well? Does it need to change? What should be added?)

Comments about the venue: (What needs to change?)

Comments about the setting:

Salient aspects from the interview:

What were the main themes that emerged during the interview?


This interview guide was informed by the following sources: Patton (2002), Miller & Crabtree (2004), Dawson (2007), Bryman (2012) and Patton (2015).



## APPENDIX I: LIST OF INTERVIEWEES AND DETAILS OF INTERVIEWS

	CODES OF INTERVIEWEES	DATE OF INTERVIEW	VENUE FOR INTERVIEW	DURATION [min]	COMMENTS ABOUT THE INTERVIEW
1	OLDV	20-Aug-19	OFFICE	140	This was a pilot interview to test the protocol and recording technology.
2	OMGG & OJJ	21-Aug-19	OFFICE	78	OJJ had to leave early.
3	CJHH	29-Aug-19	OFFICE	74	Productive interview.
4	OHBB	29-Aug-19	OFFICE	98	An engineering perspective of technical issues.
5	CGRR	29-Aug-19	OFFICE	86	Covered many relevant issues.
6	CBSS	04-Sep-19	OFFICE	57	Interviewee not very talkative.
7	CASS	04-Sep-19	OFFICE	86	Very productive interview with case studies.
8	OHVV	05-Sep-19	OFFICE	73	Explained much about decision making process.
9	OCOO	05-Sep-19	OFFICE	32	Interview interrupted by an emergency call-out.
10	CMJJ	05-Sep-19	OFFICE	56	Very humble, inexperienced interviewee.
11	OLVV	08-Oct-19	HOME	126	Views from a very powerfull decision maker.
12	CCTT & CEDD	17-Sep-19	OFFICE	88	An alternative perspective on many issues.
13	CLPP & CNJJ	25-Sep-19	OFFICE	72	Experienced, frustrated, critical interviewees.
14	ODLL	25-Sep-19	OFFICE	67	Very informed interviewee with a wide perspective.
15	OACC	17-Sep-19	OFFICE	78	An honest, trustworthy bureaucrat's view.
16	CENN	17-Sep-19	BUSY CAFÉ	97	A wealth of experience and depth and insight.
17	CKSS	19-Sep-19	BEACH HOME	129	An independent and critical view.
18	CMSS	02-Oct-19	NOISY CAFÉ	96	Great historic overview of municipal affairs.
19	IRPP	02-Oct-19	NOISY CAFÉ	91	A critical, independent view from the side.
20	CTVR	08-Oct-19	HOME	103	Willing but not able actor.
21	CIMM	AWOL			Did not attend interview, nothing to offer???

# APPENDIX J: ATTENDANCE REGISTER FOR FOCUS GROUP 1



## HESSEQUA MUNICIPALITY

### ATTENDANCE REGISTER

Name of Meeting: Workshop – Item Writers

DATE: 23/03/2020		TIME: 9:00		VENUE: Council Chambers												
No.	GUEST, NAME & SURNAME	POST TITLE/BUSINESS	E-MAIL	CONTACT NUMBER				SIGNATURE	Opt for promotional emails							
									YES	NO						
1	Lelanie Steyn	Snr. Admin official	lelanie@hessequa.gov.za	0	2	8	7	1	3	8	0	7	2	<i>Lelanie Steyn</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Wezel Marcus	Prns Administrator	wezel@hessequa.gov.za	0	2	8	7	1	3	8	0	0	3	<i>Wezel Marcus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Zonette Bothma	Administrateur Finansiële	zboothma@hessequa.gov.za	0	2	8	7	1	3	8	0	0	7	<i>Zonette Bothma</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Louis Scrymgeour	Inkomske	louis@hessequa.gov.za	0	2	8	7	1	3	8	0	4	4	<i>Louis Scrymgeour</i>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dea Hen	legel + Aden	dea@hessequa.gov.za	0	2	8	7	1	3	8	0	0	7	<i>Dea Hen</i>	<input type="checkbox"/>	<input type="checkbox"/>
6	Didi Budricks	Public Relatour Off	didi@hessequa.gov.za	0	2	8	7	1	3	8	0	6	4	<i>Didi Budricks</i>	<input type="checkbox"/>	<input type="checkbox"/>
7	R. MANDU	Acting Director Tech. Serv	rmandu@hessequa.gov.za	0	7	1	0	0	5	8	7	2	3	<i>R. MANDU</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Martina Ciszewski	Director Support	martina@hessequa.gov.za	0	2	8	7	1	3	8	0	7	4	<i>Martina Ciszewski</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	FERDIE BEAGH	Bestuurder BEGROTING	FERDIE@HESSEQUA.GOV.ZA	0	2	8	7	1	3	8	0	5	3	<i>Ferdie Beagh</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10																
11																
12																



### HESSEQUA MUNICIPALITY

#### ATTENDANCE REGISTER

Name of Meeting: Workshop – Item Writers

DATE: 23/01/2020		TIME: 9:00		VENUE: Council Chambers			
GUEST, NAME & SURNAME	POST TITLE/BUSINESS	E-MAIL	CONTACT NUMBER	SIGNATURE	Opt for promotional emails YES NO		
1 Chris Ousewij	DR COMM SERVICES.	chris@hessequa.gov.za	0287138015	<i>[Signature]</i>			
2 Jonathan KuzenHANS	ICT MAN.	jonathan@hessequa.gov.za	0287138026	<i>[Signature]</i>			
3 Albert Kuykhuus	Prog Man.	albert@hessequa.gov.za	0287138022	<i>[Signature]</i>			
4 Annalze Vries	Legal Advisor	annalze@hessequa.gov.za	0287138078	<i>[Signature]</i>			
5 Sherique Willemse	Admin	sherique@hessequa.gov.za	0287138000	<i>[Signature]</i>			
6 Kay-Ann Page	Property Management	kay-ann@hessequa.gov.za	0287137972	<i>[Signature]</i>			
7 Luciano Prins	Administrative. Com Serv	luciano@hessequa.gov.za	0287138015	<i>[Signature]</i>			
8 Liza Koop	Collab	liza.k@b040-td	0825746836	<i>[Signature]</i>			
9 Rosette Mhiga	Sosiale Ontwik. koördiner	rosette@hessequa.gov.za	0760203976	<i>[Signature]</i>			
10 STUART MORGAN	Prof. Tegn. Bedr. A&E	stuart@hessequa.gov.za	0287137962	<i>[Signature]</i>			
11 Bert Kuykhuus	Item Writer 86	bert@hessequa.gov.za	0823986069	<i>[Signature]</i>			
12 Lizette Cronje	Admin. TD - RD	lizette@hessequa.gov.za	0287138006	<i>[Signature]</i>			



### HESSEQUA MUNICIPALITY

#### ATTENDANCE REGISTER

Name of Meeting: Workshop – Item Writers

DATE: 23/01/2020		TIME: 9:00		VENUE: Council Chambers			
GUEST, NAME & SURNAME	POST TITLE/BUSINESS	E-MAIL	CONTACT NUMBER	SIGNATURE	Opt for promotional emails YES NO		
1 Marica Adams	Komitee Bevoegd	marica@hessequa.gov.za	0829237754	<i>[Signature]</i>			
2 Neash Sangrop	Administ. raar	neash@hessequa.gov.za	0817673814	<i>[Signature]</i>			
3 Laila Map	Proj. Ont. Culin. Contol. Insig	laila@hessequa.gov.za	0615871920	<i>[Signature]</i>			
4 Allison Carelre	Moni. SCM. Afdel. Luraar	allison@hessequa.gov.za	0287137895	<i>[Signature]</i>		X	
5 Jan Oosthuizen	Manag. Intern. Audit	jan@hessequa.gov.za	0287138078	<i>[Signature]</i>		X	
6 JENNIFER BOONEN	HOOF. TEGNIESE ONTSK.	jennifer@hessequa.gov.za	0287137860	<i>[Signature]</i>		X	
7 M. Comrade	Admin. B. Dienste	pscomrade@hessequa.gov.za	0287137817	<i>[Signature]</i>		X	
8 S Coetse	Bedr. Bedr. A&E	scoetse@hessequa.gov.za	8070	<i>[Signature]</i>			
9 J. Thuse	Senior SCM Prakt. Teken	jthuse@hessequa.gov.za	8086	<i>[Signature]</i>			
10 S. Othman	ASIS MANAGER: ELEC & MECH	silento@hessequa.gov.za	0834127430	<i>[Signature]</i>			
11 Boyo Roussing	Student!	aloemotora@telkomnet	0836042108	<i>[Signature]</i>			



### HESSEQUA MUNICIPALITY

#### ATTENDANCE REGISTER

Name of Meeting: Workshop – Item Writers

DATE: 23/01/2020		TIME: 9:00		VENUE: Council Chambers			
GUEST, NAME & SURNAME	POST TITLE/BUSINESS	E-MAIL	CONTACT NUMBER	SIGNATURE	Opt for promotional emails		
					YES	NO	
1 JEREMY JANAK	C. Sport / Jv.	jerj@hessequa.gov.za	0287137854	<i>[Signature]</i>			
2 ANNE ROBINCK	Leëre koördinerende offisier	anr@hessequa.gov.za	0287138070	<i>[Signature]</i>			
3 WIM SLOTH	Bevreesde: inersid	wins@hessequa.gov.za	0287137775	<i>[Signature]</i>			
4 NOLENE KLINDVOGEL	ADMINISTRATOR	nolene@hessequa.gov.za	0287138018	<i>[Signature]</i>			
5 ELIEN MOOMAN	ADMINISTRATIEVE KLERK	elien@hessequa.gov.za	0287137803	<i>[Signature]</i>			
6 H.P. MICHELS	Behuisingbevoorde	hpm@hessequa.gov.za	0287138069	<i>[Signature]</i>			
7 FELICIA JOSEPHUS	Behuisingbevoorde	felicija@hessequa.gov.za	8068	<i>[Signature]</i>			
8 KATHINA FARMER	Spreekbevoorde	kathina@hessequa.gov.za	0287138073	<i>[Signature]</i>			
9 PAUL LOUW	Bestuurder: Beplanning	paul@hessequa.gov.za	0287138074	<i>[Signature]</i>			
10 SHARIDA KENNEDY	Bestuurder: Sivil Beplanning	sharidak@hessequa.gov.za	0615417091	<i>[Signature]</i>			
11 CAIRO OORTHUYSEN	Bevreesde: Diensie	cairo@hessequa.gov.za	0287138063	<i>[Signature]</i>			
12 RONALD FRITSKE	Behuising: Eendou wely	ronaldf@hessequa.gov.za	0287138037	<i>[Signature]</i>			



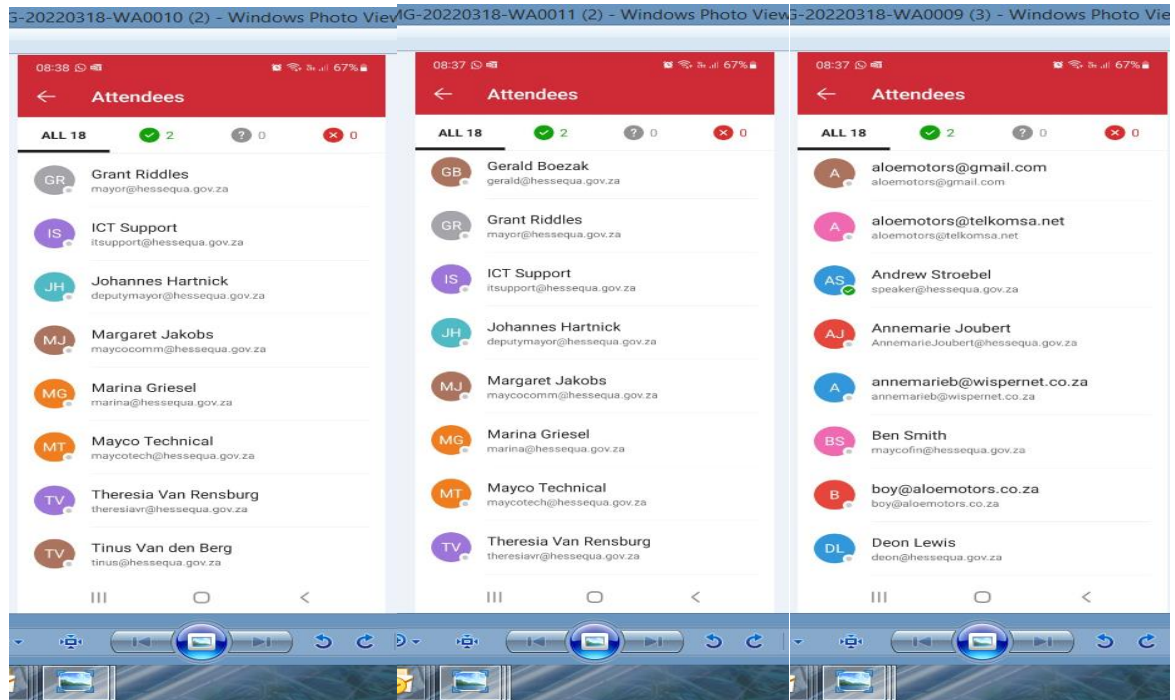
### HESSEQUA MUNICIPALITY

#### ATTENDANCE REGISTER

Name of Meeting: Workshop – Item Writers

DATE: 23/01/2020		TIME: 9:00		VENUE: Council Chambers			
GUEST, NAME & SURNAME	POST TITLE/BUSINESS	E-MAIL	CONTACT NUMBER	SIGNATURE	Opt for promotional emails		
					YES	NO	
1 J. HEURIS	Behuisingbevoorde	phane@hessequa.gov.za	0287138060	<i>[Signature]</i>	YES	<input checked="" type="checkbox"/>	
2 E. SWERS	Admin bevoorde	elna@hessequa.gov.za	0287137811	<i>[Signature]</i>			
3 F. ESAU	Koördinerende	fesa@hessequa.gov.za	0287138046	<i>[Signature]</i>			
4 I. BOTES	Midprojek koördinerende	istiana@hessequa.gov.za	0287138035	<i>[Signature]</i>			
5 J. JANSSEN	EPNP PROTEK ADMINISTRATOR	jan@hessequa.gov.za	0287138008	<i>[Signature]</i>			
6 B. JOSEPH	Env. KLERK: VERBOD	bernadette@hessequa.gov.za	0287138039	<i>[Signature]</i>			
7 D. HALE	"	debbie@hessequa.gov.za	0287138037	<i>[Signature]</i>			
8 E. THUIZEN	HOOF BEVOORDE: HEIDELBERG	ethuizen@hessequa.gov.za	0287138019	<i>[Signature]</i>			
9 Y. DUBEL	Admin bevoorde	hendrik@hessequa.gov.za	0287138014	<i>[Signature]</i>			
10 C. DUBEL	Bestuurder: Behuising	cyril@hessequa.gov.za	0610770609	<i>[Signature]</i>			
11 U. OORTHUYSEN	Bestuurder: Behuising	uort@hessequa.gov.za	0287137899	<i>[Signature]</i>			
12							

## APPENDIX K: ATTENDANCE REGISTER FOR FOCUS GROUP 2



## APPENDIX L: THE EXTERNAL CONTEXT OF THE HESSEQUA MUNICIPALITY

The unit of analysis is the external context of the municipality. The application of the following frameworks is illustrative rather than comprehensive. The main aim is to illustrate how different perspectives reveal different but interrelated and complementary aspects of the context. Contextual variables 'closer to home' that are deemed to be of high importance to the municipality are addressed in some more detail. A PESTLE framework is applied first.

### A PESTLE analysis

The mnemonic PESTLE refers to a framework that is used to analyse the political (P) domain, the economic (E) domain, the social (S) domain, the technological (T) domain, the legislative (L) domain, and the (natural) environmental (E) domains of society (PESTLE Analysis, 2020). The annual publication *Business Futures* of the Institute for Futures Research at the Stellenbosch University serves as a prime example of a very comprehensive contextual (PESTLE) analysis that applies to South African organisations (Roux, 2015/2016). Schwella *et al.* (2015) also apply this framework to contextualise South African governance.

The PESTLE framework is analytical in nature as it only observes the 'flatlands' of reality and not the deeper levels thereof (Slaughter, 1998). Rainey (2009:91) uses a similar scanning framework that focuses on conditions, structures, developments, trends and patterns in each PESTLE domain.

The PESTLE perspective is applied to a hierarchy of nested contexts with the Hessequa Municipality at the centre. In this review the hierarchy expands outwards from the local or 'internal context' of the municipality itself. The hierarchy spans the local, provincial, national, continental, global and even solar boundaries. Normally the PESTLE analysis starts with a global perspective and then sharpens the focus towards a local perspective. This order is reversed here.

This PESTLE analysis is focused on different dimensions of the hierarchically structured external environment as indicated in Table L-1. Cells marked with an 'X' indicate which contextual dimensions may influence municipal decision making to some extent. These cells are discussed below. Empty cells signify small potential influences and are ignored in this study.

Table L-1: Dimensions of the hierarchically structured contextual environment

	Political dimension	Economic dimension	Social dimension	Technological dimension	Legal dimension	Environmental dimension
Local	X	X	X	X	X	X
Provincial	X	X	X	X	X	X
National	X	X	X	X	X	X
Continental	X	X	X	X		X
Global	X	X	X	X		X
Solar						X

## The political dimension

The political dimension addresses power relations among actors in the contextual environment. Forces from the external political domain culminate in a very dynamic party-political arena at the Hessequa Municipality. Here the main players are the current ruling party, the Democratic Alliance (DA) and the opposition party, the African National Congress (ANC). The Freedom Front Plus (FF+) is the alliance partner of the DA majority. Traditional leaders will enter the political arena soon when Act 3 of 2019 is implemented (RSA, 2019b). The political aims of national (ANC) and provincial (DA) government are contained in legislation that applies to the municipality. The internal political domain is examined in more detail below.

Only one of the nine provinces of South Africa (SA) is governed by the DA, namely the Western Cape. All eight the other provinces are governed by the ANC (Schwella, 2015:228, 245). The manifestos of the DA (2021), the Freedom Front Plus (2019) and the ANC (2019) contain the values, vision and strategies of each party to build a better South Africa. Schwella (2015) provides a comprehensive description and overview of South Africa's current political dispensation. The SA multi-party constitutional democracy is at the very early stages of development.

South Africa's government is structured in terms of the Constitution as the supreme law of the country (RSA, 1996). Government is structured as the distinct branches of the legislative, the executive and the judiciary and is based on the doctrine of the separation of powers (Brand, 2015). Government is constituted as national, provincial and local spheres of government. These spheres function as distinctive, interdependent and interrelated systems according to the constitutional principles of cooperative government.

Political (in)stability on the continent is reflected in the Fragile States Index (FSI) that ranks 178 countries in terms of twelve existing social, economic and political pressures that affect state stability, fragility and vulnerability, as well as the capacity of a state to manage those pressures (Messner, 2020:39). The overall picture is that most of Africa and the SADC countries are in a very critical condition (Messner, 2020:6-7). SA is ranked in position 85 in a category defined as 'elevated warning', together with Russia, Brazil and India. China is ranked in position 86. Unfortunately, South Africa is also among a group of countries identified as 'long-term most worsened' (p.11) when their performance since 2010 is considered. Unless this negative trend is curbed, South Africa runs the risk of becoming a failed state.

Although the quality of African governance has steadily improved since 2010 it has slowed during the latter half of the period and deteriorated in 2019 according to the Ibrahim Index of African Governance (IIAG) (2020). Only eight of the 54 African countries have managed to improve their score on all the relevant governance criteria. South Africa's position has deteriorated since 2015.

Continental and global politics and power are not on the 'radar' of decision makers at Hessequa Municipality. However, the powerful effects of globalisation are experienced locally (Friedman, 2006; Schwab, 2016; DTI, 2018). Specific implications of globalisation for South Africa are discussed by Du Toit and Sithole (2016). One of the aims of the NDP is to reposition SA as a powerhouse in Africa and in the world through strategic alliances with the BRICS trade block and SADC (NPC, 2012: Chapter 7). The BRICS 'community' represents a power block of five countries that (may) challenge the dominance of the United States and the European Union in the global political economy (Thompson & De Wet, 2017). Agreements among the BRICS (Brazil, Russia, India, China, South Africa) trade block members and numerous agreements between South African government and foreign countries do have direct effects at a local level (Carmody, 2013). The rise of the BRICS power block is reshaping Africa's development, governance, and geopolitical and geo-economic relations. Africa's attractiveness for the

BRICS countries is based on the potential size of the African market and the availability of natural resources.

The New Partnership for Africa's Development (NEPAD) is a self-empowerment and novel development strategy crafted by Africans for Africa (Akinola & Ndawonde, 2016:38-39). It aims to harness Africa's enormous natural resources and human talent for economic prosperity, social development, peace, and prominence in the global theatre.

Empirical data confirms that decision makers at Hessequa Municipality only consider national and provincial political influences during their decision processes. In fact, these influences are considered as critical.

### **The economic dimension**

The economic dimension addresses the production (i.e., supply), distribution, consumption (i.e., demand) and exchange (or allocation) of scarce resources (i.e., goods and services) among economic actors and across boundaries at market prices. It also deals with economic growth, inflation, unemployment, imports and exports and related matters (Dornbusch & Fischer, 1987).

The Integrated Development Plan (IDP) of the Hessequa municipal area contains an overview of the local economic context (Hessequa Municipality, 2021a). Hessequa's average annual economic growth rate of just more than one per cent since the year 2000 is amongst the lowest in the Western Cape and below the local population growth rate of about 1,8 per cent per year. The tertiary sector contributes two-thirds of the local gross domestic product (GDP) and is growing faster than the primary and secondary sectors. The three biggest contributors are the financial, insurance, real estate and business services, trading (i.e., wholesale and retail) and the hospitality sector, and manufacturing. The primary sector is only half the size of the secondary sector, but its labour intensity is double that of the secondary and tertiary sectors (Western Cape Government, 2020c:16). The informal sector functions as an important provider of self-employment opportunities. Factors that constrain economic development in the area include low skills levels, long distances to markets for local products and the high costs of electricity, and municipal red tape (Hessequa Municipality, 2016:56-64). The three most serious risks for the area are the Covid-19 pandemic, low economic growth rates, and increasing pressure on household income.

The positive GDP growth rate of the Hessequa area trended downwards since 2011 to become negative by 2019. The expectation is that the devastating economic impact of the Covid-19 pandemic will erode the progress made between 2014 and 2018 (Western Cape Government, 2020b:486). This local economy is characterised by low growth, income inequality, crime, drug abuse, unemployment, and a high percentage of indigent households receiving free municipal services. About 38 per cent of all employed people occupy informal positions in the Hessequa area and only about one-fifth of all employees are skilled (Western Cape Government, 2020b:487, 489). As a result, the municipality experiences 'serious pressure on its sources of income' while costs escalate. On the positive side the economic infrastructure within the municipal area is in a relatively good condition and service delivery is of a high standard. The ten-year financial plan of the municipality sets various limits to protect the longer-term financial viability of the municipality (Hessequa Municipality, 2021a).

The Hessequa economy is embedded in the contexts of the Garden Route District Municipality and the Western Cape province. These contexts are discussed in depth by the Western Cape Government (2020a; 2020b). The strategic objectives of the Western Cape Government for socio-economic development are aligned with the seventeen Sustainable Development Goals (SDGs) of the United Nations (2015), the seven 'aspirations' of the Africa Agenda 2063 (African Union Commission, 2015; NEPAD, 2021), the policy frameworks of the NDP (NPC, 2012), and the national Reconstruction and Recovery Plan (Western Cape Government, 2020a).



During the past few years, the local, provincial and national economies were in a recession, weakened by Eskom's load-shedding, national credit rating downgrades, service delivery protests, severe droughts, fluctuating exchange rates and a decline in business and consumer confidence (Western Cape Government, 2020b). The national and provincial economies have been burdened by the wicked problems of poverty, inequality, unemployment, crime and low economic growth rates (NPC, 2012; Roux, 2016; Western Cape Government, 2020a). The Western Cape economy is expected to grow by around one per cent during the next few years. This growth is supported by exports, especially from the labour-intensive agricultural sector. Unemployment in general is high. More than half of the youthful population is unemployed.

Important economic sectors in the province are the agriculture, agri-processing, tourism and construction sectors (Western Cape Government, 2020a:7). The continuing effects of the Covid-19 pandemic on all sectors of the entire SA economy are devastating and fatal (Stats SA, 2020). The pandemic created 'a multi-layered crisis comprising a health shock, domestic economic disruptions, domestic economic disruptions, plummeting external demand, capital flow reversals, and declines in commodity prices' (Western Cape Government, 2020a:4). 'The Western Cape has an open economy and is vulnerable to external shocks' (Western Cape Government, 2020a:5).

Important economic variables at a national level are consumer price inflation (CPI), GDP growth rates, employment rates, business confidence, interest rates and Gini coefficients. Statistics about these variables are published by the South African Reserve Bank, Statistics South Africa, and the Bureau of Economic Research at the Stellenbosch University. The National Planning Commission (NPC, 2012), and Roux (2016) provide a comprehensive overview of the South African and global economic context. The national GDP dropped just over 16 per cent between the first and second quarters of 2020 due to the consequences of the Covid-19 pandemic (Stats SA, 2020). This is the biggest fall in GDP since 1960. Unlike all the other economic sectors the agricultural sector was able to expand during the pandemic. Due to the wicked nature of the pandemic its future effects are still uncertain.

The average gross domestic product (GDP) growth rate of the Southern African Development Community (SADC) has trended downwards from an average of 4,5 per cent in 2010 to a mere 1,4 per cent in 2019 (SADC, 2020:10). The size of the South African economy in GDP terms comprises 50 per cent of the entire SADC economy. South Africa, with the second biggest economy on the continent, has been amongst the worst performers in SADC in terms of GDP growth over the last decade. GDP growth in SA has deteriorated from 3,3 per cent in 2011 to 0,2 per cent in 2019 (p.10). In contrast Tanzania maintained a GDP growth rate of more than six per cent from 2009 until 2019. Country-specific GDP growth rates between 2009 and 2019 varied much.

Per capita GDP for most of the SADC countries, including SA, has remained stagnant during the last decade. The island states of Comoros, Mauritius and Seychelles as well as Zimbabwe showed significant growth in per capita GDP since 2009. Only Mauritius and Seychelles can boast with per capita GDP above \$10 000 (US). The average per capita GDP for the SADC countries decreased from \$2 454 (US) in 2011 to \$1 927 in 2019 (SADC, 2020:11). The very low average per capita GDP combined with skewed income distributions in SADC reflect conditions of extreme poverty. SADC countries with inflation rates above ten per cent (SADC, 2020:17) are all indicated as fragile states by Messner (2020:7).

As the economic leader in SADC, South Africa attracts most of the foreign direct investment to the region. SA generates about two-thirds of all the electricity consumed in SADC (SADC, 2020:31) and participates in a regional power pool. Due to the energy intensive nature of the local economy SA is the biggest emitter of carbon dioxide per capita at more than 8 tonnes per capita (SADC, 2020:32).

Thirty-two of the world's 47 least developed countries (LDCs) are in Sub-Saharan Africa (UN, 2019b:10). The growth rate of the populations of the LDCs as a group is two and a half times faster than the growth rate of the population of the rest of the world. Many of the LDCs are also among the poorest, with national per capita income below US\$1000 per year (p.11).

The African Union's 'Agenda 2063 is a shared framework for inclusive growth and sustainable development for Africa to be realized in the next fifty years' by means of twelve 'flagship projects' (African Union Commission, 2015: 2,9). These projects address policy development, economic development opportunities, infrastructure development, free trade and free movement of people, peace and security, modern transport and technological systems, and the advancement of education. Continental progress on the first aspiration regarding prosperity, inclusive growth and sustainable development since adoption of the Agenda in 2013 is indicated as 28 per cent by mid-2021 (NEPAD, 2021). Progress on the other six aspirations has been slow.

Economic variables at the global level that affect the local municipal communities directly include foreign exchange rates, crude oil prices, global economic cycles, trade agreements, tourist visits, imports and exports of commodities, international prices of commodities (e.g., food prices), tariffs and quotas (Du Plessis, 1987). Economic statistics are published on the web pages of the UN, the World Bank and the International Monetary Fund.

The global economy is expected to grow by 5,6 per cent in 2021 and 4,3 per cent in 2022 following a 3,5 per cent contraction in 2020 caused by the Covid-19 pandemic (World Bank, 2021). This growth is concentrated in a few developed economies but is subject to uncertainties and risks associated with the pandemic. Debt levels have increased, and global inflation and food prices are expected to continue rising. The recovery process may be long and slow, especially in the lower income countries. The sub-Saharan Africa economy contracted by 2,4 per cent and is expected to expand by 2,8 per cent in 2021 and 3,3 per cent in 2022. South Africa's economy is expected to grow by 3,5 per cent in 2021 and by 2,1 per cent in 2022 (World Bank, 2021:26). The BRICS economy is projected to grow by 7,5 per cent in 2021 and 5,2 per cent in 2022.

Four decades ago, Naisbitt (1982) and Naisbitt and Bisesi (1983) noted the emergence of a globalised economy in which short-term planning and thinking are being replaced by long-term perspectives and planning. They observed a move away from centralised hierarchical structures to decentralised, network governance systems that are better positioned to deal with accelerating change. They also saw a trend from representative toward participatory democracy where people demand a role in decisions that affect their lives. These megatrends continue.

The global centre of economic activity and competitiveness is moving from Western countries towards eighteen high-growth emerging economies in the east and south, led by China and India. This trend is propelled by 'pro-growth policy agendas based on productivity, income, and demand, and often fuelled by strong competitive dynamics' (McKinsey Global Institute, 2019:1). Key drivers of outstanding economic growth over the last few decades have been globally competitive and innovative firms that take important decisions faster than their western rivals.

## **The social dimension**

The social dimension addresses aspects such as socio-politics, demographics, migration, education and health, poverty, urbanisation, safety and security, and human development. The discussion below covers typical aspects of the local municipal context and the provincial context. Both the local, regional and provincial social contexts are discussed in detail by the Western Cape Government (2020a; 2020b; 2020c). The social dimension in SA, Africa and the world is discussed in the NDP (NPC, 2012) and by Haldenwang, Liebenberg, Ferreira,

Esterhuyse and Leonard (2016). This environment has a direct influence on municipal decision making.

Salient aspects of the socio-economic profile of the Hessequa Municipality include the following (Western Cape Government, 2020c): The size of the population of about 52 000 people shows a small negative growth rate that is expected to continue over the next few years. Unlike the other age groups the population size of people aged 65 years and older is increasing, and the total dependency ratio of 60 per cent is expected to increase. The sex ratio is 89 males per 100 females. About 78 per cent of the population is urbanised. The current household size of 3,4 people per household continues to decrease. Population density is below ten persons per square kilometre. Although the matric pass rate is above 80 per cent the learner retention rate is below 70 per cent. Twelve of the nineteen public schools are no-fee schools. Only seven schools have libraries. HIV/AIDS and tuberculosis pose health risks to communities. Good standards of child health and maternal health are maintained but a teenage pregnancy rate of 20 per cent is a cause of concern.

In 2018 the per capita GDP of R41 000 in Hessequa was lower than the average figures for the Garden Route District Municipality and the Western Cape. The local Gini coefficient of 0,56 was the lowest in the Garden Route area (Western Cape Government, 2020c). Hessequa's Human Development Index (HDI) trends upwards and has exceeded the HDI of all the other local municipalities in the region. More than 90 per cent of the local households receive basic services and live in formal housing. Apart from drug-related offences the incidence of all other categories of crimes and offences follow a downward trend in Hessequa. In general, the safety and security statistics of the Hessequa Municipality are more favourable than those of the district municipality and much more favourable than those of the Western Cape.

The Western Cape Government (2020a) provides an overview of the social dimension of the province. About 12 per cent of the SA population resides in the Western Cape where about seven per cent of the population is 65 years and older and 24 per cent is younger than 15 years. Life expectancy at birth is 68 years. The declining provincial fertility rate of 2,0 children is below the national figure of 2,3 children per woman. In-migration of working-age people as the primary driver of population growth in the province tends to lower the dependency ratio. The provincial Gini coefficient is increasing. In Cape Town this coefficient has increased from 0,599 in 2011 to 0,621 in 2019. Despite a deteriorating Gini coefficient, the provincial HDI has increased until 2019. It is expected that the Covid-19 pandemic will impact negatively on the HDI. In 2019 more than 99 per cent of provincial households had access to clean water, 93 per cent had access to electricity, and 92 per cent had access to sanitation. Unfortunately, Cape Town and neighbouring areas are known for high rates of violent crimes and drug abuse. The city is experiencing rapid urbanisation. The Western Cape Government aims to create a safe, attractive and enabling business environment for private investors and for foreign direct investors (Western Cape Government, 2020a). The relatively good performance of the Western Cape Government and the education sector attracts an inflow of migrants.

The detailed studies of the SA social context by the NPC (2011; 2012) and Haldenwang *et al.* (2016) reflect a social context characterised by extreme inequality, poverty, unemployment and unemployability of large sections of the population, especially the youth. In stark contrast, the Institute of Race Relations (IRR) (2017) reports that twenty-six national socio-economic variables have shown very favourable trends from 1994 to 2016. Good progress has been made in the domains of education and employment for black people, living standards and service delivery to poor households, inflation rates, healthcare and community safety. The NPC (2011) identified the following additional challenges, namely substandard school education for black South Africans, inadequate public infrastructure, unsustainability of the resource-intensive nature of economic growth, and separate spatial development. Other challenges included the ailing public health system, underperforming public services,

corruption and racism. The same kind of economic and social challenges and risks span all municipal, provincial and national boundaries.

Global drivers of socio-economic and demographic change include the following (WEF, 2016:6): Changing work environments, flexible work arrangements, the rise of the middle class in emerging economies, climate change, a transition to a greener economy, rising geopolitical volatility, longevity and ageing societies, youthful populations in emerging markets, gender equality, the rising economic power of women, and urbanisation. Migration, and especially forced migration, is on the rise due to humanity's impact on the natural environment (McKinsey Global Institute, 2019). The effect of these drivers is observed globally and locally.

Brief reference is made below on the global demographic megatrends of population growth, population ageing, population migration and urbanisation (UN, 2019b: iii).

**Population growth:** By mid-year 2019 the Southern African Development Community (SADC) population totalled 360 million people, growing at an average growth of 2,8 per cent per year over the last decade. Almost 59 million of this population, or 16 per cent, resided in South Africa where the average population growth rate has been 1,5 per cent (SADC, 2020:6). Although fertility rates in SADC are declining slowly, they remain high. Fertility rates in Angola, the Democratic Republic of the Congo (DRC), Mozambique, Tanzania and Zambia are still at five births per woman and higher. South African fertility rates are just above two births per woman (SADC, 2020:8). Live expectancy at birth has increased in all SADC countries since 2009. Average life expectancy in the region increased from 53 years to 63 years (SADC, 2020:7). In Southern Africa (Botswana, Eswatini Lesotho, Namibia and South Africa) where the occurrence of HIV/AIDS has been very high the life expectancy at birth fell from 63 years in 1990 to 53 years in 2004. This figure has improved to 64 years in 2019 (UN, 2019b:30).

Infant mortality rates show a downward trend in most SADC countries but remain constant in Mauritius and Seychelles at very low levels (SADC, 2020:39). Adolescent birth rates among women aged 15 to 19 years are very high in most SADC countries. In Angola and Mozambique these rates were 150 births per 1000 women in 2018 (SADC, 2020:47).

Unemployment rates in SA and all its neighbouring countries remain high at between 20 per cent and 30 per cent (SADC, 2020:41). Unemployment rates in most of the other SADC countries are below ten per cent. Youth literacy rates among people aged 15 to 24 years old is relatively high at more than 80 per cent for most countries (SADC, 2020:44). Youth unemployment rates in SA and most of its neighbouring countries are alarmingly high at more than 40 per cent. More than 50 per cent of the South African youth is unemployed (SADC, 2020:45).

SSA has a very youthful population with more than 60 per cent of the population younger than 25 years of age in 2019. About 1,4 billion babies are projected to be born between 2020 and 2050 in this region. The percentage of the SSA population of working age (i.e., 25 to 64 years) is projected to increase from 35 per cent in 2019 to 43 per cent in 2050. This creates an opportunity for a 'demographic dividend', which is an opportunity for rapid economic growth (UN, 2019b:14-24).

The SSA population is projected to double from 1,066 billion people in 2019 to 2,118 billion in 2050 (UN, 2019b:6). This high growth is in stark contrast with populations elsewhere that stabilise during the latter half of this century. The demographic dividend associated with Africa's demographic changes may contribute to accelerated economic growth in the region. SSA's current demographics imply a high support ratio of about twelve working-age persons (25 to 64 years old) per person of 65 years and older. This region's support ratio remains significantly higher than all other regions and declines to about four by 2100 (UN, 2019b).

Africa's population is projected to increase more than tenfold from 229 million in 1950 to more than 2,5 billion people in 2050 (UN, 2019a: 25). The world population, estimated at 7,7 billion people by mid-2019, continues to grow at a slowing rate of about 1,1 per cent per year. This population is estimated to grow to 8,5 billion by 2030 and 9,7 billion by 2050. More than half of this growth will be in SSA where 1,365 billion babies are projected to be born from 2020 to 2050. In 2019 average fertility rates in SSA were 4,6 live births per woman, well below the rate of 6,3 in 1990. SSA fertility rates remain higher than all other regions and trend downwards to 3,1 in 2050, and to 2,1 by the year 2100. SSA's adolescent birth rate, the highest rate globally, is 104 births per 1000 women aged 15 to 19 years. Global fertility rates decrease from 2,5 in 2019, to 2,2 in 2050, and to 1,9 in 2100. Fertility rates in Europe and North America remain below 2,0 for the next 80 years (UN, 2019b).

**Urbanisation:** A global megatrend with a spectrum of significant environmental, social and economic implications is urbanisation. According to a UN (2018) report only 30 per cent of the planet's population was urbanised in 1950. This figure has increased to 55 per cent in 2018 and it is projected to increase to 68 % in 2050. In 2018 about 3,4 billion people resided in rural areas and about 4,2 billion people were urbanised. By 2050 some 6,7 billion people are expected to be urbanised globally.

The most rapid urbanisation is expected to occur in the low-income countries, especially in Africa and Asia. Forty per cent of sub-Saharan Africa's population was urbanised in 2018. This figure is projected to increase to 58 per cent in 2050 when 1,26 billion sub-Saharan Africans will reside in urban areas. This means that an additional 834 million people will urbanise in Africa between 2018 and 2050 (UN, 2018: 21). Sustainable urbanisation supports the sustainable development goals for 2030 and has the potential to stimulate both human and economic development in an ecologically friendly manner (UN, 2018).

Urbanisation, which is a complex socio-economic process, has a transformative impact on society. Generally, there is a positive correlation between urbanisation and economic growth, poverty reduction and human development (UN, 2019a:10). In Africa rapid urbanisation has coincided with rapid population growth since 1950. Africa's urban population increased from 33 million people in 1950 to 548 million in 2018 when 43 per cent of the continent's population was urbanised (p. 24). By 2050 1,5 billion urbanites will comprise almost 60 per cent of the African population (p.25). Africa houses seven of the ten countries on the planet with the fastest urbanisation rates between 2018 and 2050 (UN, 2019a: 52). An important observation by the UN (2019a:50) is that the urbanisation rate decreases as the level of urbanisation increases on a regional basis. Local municipalities 'face sustainability challenges due to urbanisation and in-migration that is accompanied with high levels of household poverty' (COGTA, 2009a: 22).

**Population ageing:** Life expectancy of the world's population is expected to increase from 72,6 years in 2019 to 77,1 years in 2050. Corresponding figures for SSA are 61,1 years in 2019 and 68,5 years in 2050 (UN, 2019b). In ageing populations in Western Europe and Japan the elderly and retired groups produce less and consume more especially due to medical care needs. In Germany, Japan, South Korea, Russia and China birth rates are far below replacement rates. In these countries immigrants and technology are employed to compensate for the associated reduction in productivity and economic growth (McKinsey Global Institute, 2019). McKinsey reports that first-generation immigrants constitute 48 per cent of the population in Gulf Cooperation Council countries, 13 per cent of the West European population, and 15 per cent in North America.

### **The technological dimension**

The technological dimension addresses technological developments and trends in different technological domains and the associated impacts on society. The effects and impacts of technological innovation and the convergence of technologies span all hierarchical and

geographical boundaries (Friedman, 2006; Schwab, 2016). The municipality and its communities are embedded in a global information and communication network that serves all stakeholders reasonably well. The Covid-19 pandemic has reinforced the importance of digital technologies to facilitate the continued functioning of economic and social life during the lockdown periods (Western Cape Government, 2020a:16). The Hessequa Municipality has conducted all their meetings, including council meetings virtually since the outbreak of the Covid-19 pandemic in March 2020. Recordings of the meetings are available online (YouTube, 2021). Modern technology finds application in the local agricultural and business sectors and also in all the public sectors. The rest of this section contains a general review of the technological dimension.

The post-industrial society is being transformed into an information society in which information is mass-produced and disseminated globally and instantly (Naisbitt, 1982; Naisbitt & Bisesi, 1983:69-70). These authors studied several 'megatrends' and predicted that the new and advanced 'high tech/high touch' technology will be user-friendly.

Friedman (2006:x) explains how the world, or the 'global playing field' has become 'flat'. He uses the notion of 'flatness' to describe how technology has enabled more people to 'plug, play, compete, connect, and collaborate with more equal power than ever before'. He describes a 'triple convergence' around the year 2000 consisting of the following components: Platforms of new global networks of communication technology, the adoption of new work practices, habits, skills and processes based on this technology, and the welcoming of several billion people from China, India and the former Soviet Empire onto these platforms (Friedman, 2006:202-203). The net effect is a networked global society with the capacity to create (and also destroy) value in new innovative ways. This network enables cooperation, competition and collaboration across all types of boundaries.

The WEF (2016:7) identified several drivers of technological change. These are mobile internet and cloud technology, advances in computing power and 'big data', new energy supplies and energy technologies, IoT, crowdsourcing, advanced robotics, autonomous transport, artificial intelligence, machine learning, advanced manufacturing and three-dimensional printing, advanced materials, biotechnology and genomics. Most of these drivers are already at work in society.

The following observations illustrate the nature of technological innovation (Kurzweil, 2001). Technological innovation in general and the exponential growth of computer technology are key drivers of change in different domains globally. The rate of technological innovation and change is exponential, contrary to the common-sense 'intuitive linear' view. Within a few decades, machine intelligence will surpass human intelligence, leading to The Singularity — technological change so rapid and profound it represents a rupture in the fabric of human history. The implications include the merger of biological and nonbiological intelligence, immortal software-based humans, and ultra-high levels of intelligence that expand outward in the universe at the speed of light. It might not even be possible to comprehend the Singularity with our current level of understanding. The aim is to develop 'machines with human level intelligence (and beyond) as the result of millions of small advances' (Kurzweil, 2001). The singularity may transform all aspects of our lives. The Singularity that Kurzweil refers to above is explained in more detail by Martin (2006:239-242).

Technological innovation as foreseen by Kurzweil and Martin is currently taking shape as the Fourth Industrial Revolution (4IR) (Schwab, 2016). The Fourth Industrial Revolution may fundamentally change the way humans live, work and relate to one another (p. 7). Physical manifestations of the revolution include autonomous vehicles, 3D printing, advanced robotics and new materials. The 'internet of (all) things' (p. 22) connects these physical things with digital technologies and people in ways that revolutionise the way in which individuals and institutions interact.

Schwab (2016:8) is concerned about 'decision-makers (that) are too often caught in traditional, linear (and non-disruptive) thinking or too absorbed by immediate concerns to think strategically about the forces of disruption and innovation shaping our future'. He expects this technological revolution to have a 'monumental impact' (p. 32) on the global economy, on business, on society and on individuals globally. It will have a profound influence on the nature of work and will require new skills sets from workers (p. 49).

The 'internet of things' is integrating algorithms, cloud-based services, digital connectivity, e-commerce, mobile internet, robotics and smartphones to provide early adopters of these technologies a competitive advantage. A new wave of technological innovation, based on artificial intelligence, computing capacity and advanced automation, is 'enabling beyond-human machine competencies and a new generation of system-level innovation' (McKinsey Global Institute, 2019).

New trends in globalisation (i.e., the global cross-border flow of funds, data, goods, people and services) are observed (McKinsey Global Institute, 2019). A sharp increase in data flows is observed, especially among South-South emerging economies. Knowledge-intensive global value chains are evolving. These value chains are based on new technology supplied by the Fourth Industrial Revolution (Schwab, 2016) and on highly skilled human resources (McKinsey Global Institute, 2019).

The technological revolution is expected to increase inequality between low-skilled labourers and members of innovation-driven technological ecosystems (Schwab, 2016:87). The availability of low-cost digital technology allows people to interact across geographical, social, economic, cultural, political, religious and ideological boundaries (Schwab, 2016:89).

A review of the technological landscape from a South African perspective with specific reference to enabling and new technologies is provided by Butler (2016). He contextualises the review with reference to the 'fifth technological transformation' (Perez, 2002:18). Butler reviews important trends of a number of enabling technologies. These trends can be extrapolated to explore future implications, opportunities, risks and threats. The pervasive nature of these enabling technologies is observed at all hierarchical levels of this PESTLE analysis. Information and communication technologies (ICT) represent the convergence of computer and communication technology. ICT provides the connectivity required for 4IR. Research findings from a broad spectrum of biotechnologies find more and more innovative applications in the medical and health sector, genetic engineering, computer technology, renewable energy technologies, material sciences and the agricultural sector. Biotechnology in agriculture finds application in the genetic modification of plant seeds and crops and the enhancement of desired features of animals. Advances in material technologies and nanotechnology stimulate the production of materials with unusual properties that find application in diverse fields. The drive for clean, affordable, abundant and mobile renewable energy technologies aims to replace carbon-intensive energy sources. The high penetration rate of renewable energy technologies in the global energy markets is monitored by British Petroleum (2021). Research to improve the enabling technology of transportation focuses on the rapid transport of large volumes of goods and large groups of people, vehicle technologies, and flexible transportation options for moving people over shorter distances. Environmentalism refers to a collective drive to balance and limit the environmental impact of new innovations and to stimulate the development of environmentally friendly technologies. The Western Cape Government promotes investments in clean, decarbonised and renewable energy technologies (Western Cape Government, 2020d).

### **The legal dimension**

The legal dimension considers legal frameworks, legislation, regulations, circulars and reporting demands that are relevant for decision makers. Each law, each regulation and each

circular contributes to complexity. Hessequa Municipality is a legal entity within the SA governance system (Schwella, 2015). SA is a constitutional democracy in terms of the Constitution of South Africa (RSA, 1996). The focus of this section is limited to SA laws that co-define the Hessequa municipality in terms of its aims and objectives, powers and mandates, processes, structures, resources, and governance framework. All these laws are derived from the Constitution and apply to almost 60 million South Africans in 257 local municipalities (Main, 2020:12). Given the critical importance of legislation for municipal decision making the legislative dimension is covered in more detail below. Due to space limitations the plethora of other laws, regulations, circulars and reporting demands are not discussed here. The following discussion is for illustrative purposes only.

The Constitution of the Republic of South Africa (hereinafter ‘the Constitution’) is the supreme law of the Republic of South Africa (RSA, 1996). All other laws are derived from the Constitution and reflect the values stated in Chapter 10, the founding provisions, and the Bill of Rights therein. Constitutional values and performance criteria associated with *competence* includes efficient, economic and effective use of resources, and reliability. Values associated with *responsiveness* include professional ethics, flexibility, accountability, transparency, timeliness, accuracy, impartiality, fairness, equal treatment of all citizens, and responsiveness to the needs of citizens. These values are also reflected in section 51 of the MSA.

Section 40 of the Constitution states that ‘government is constituted as national, provincial and local spheres of government which are distinctive, interdependent and interrelated’. Chapter 3 of the Constitution spells out the important principles of cooperative government which aim to secure the well-being of all the people of South Africa. Section 154 of the Constitution determines that ‘national government and provincial governments ... must support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions’. In addition, national and provincial government must ‘provide for the monitoring and support of local government ... and promote the development of local government capacity to enable municipalities to perform their functions and manage their own affairs’ (Section 156). In cases where a municipality does not fulfil its constitutional obligations provincial government may intervene to ensure fulfilment of that obligation (Section 139).

Section 151 of the Constitution defines the status of a municipality. The executive and legislative authority of a municipality is vested in the municipal council. A municipality ‘has the right to govern, on its own initiative, the local government affairs of its community’ subject to relevant legislation.

Section 152 of the Constitution specifies the objects of local government. Municipalities must provide democratic and accountable government for local communities. They must provide services to communities and promote social and economic development. They also have to promote a safe and healthy environment, and encourage the involvement of communities and community organisations in the matters of local government.

Section 156 of the Constitution defines the powers assigned to municipalities so that they can perform the functions allocated to them as set out in Part B of Schedule 4 (concurrent functional areas), and Part B of Schedule 5 (exclusive provincial functional areas) of the Constitution (Brand, 2015:200). A municipality has the authority to make and to administer by-laws for the effective administration of these functions, but subject to national and provincial legislation.

Chapter 7 of the Constitution deals with the composition and election of municipal councils, the membership and term of a municipal council (which is five years) and the functions of a municipal council. Section 160 states that a municipal council ‘makes decisions concerning the exercise of all the powers and the performance of all the functions of the municipality’. A municipal council may not delegate the passing of by-laws, the approval of budgets, the imposition of rates, taxes, levies and duties, and the raising of loans. Decisions are taken



based on a majority vote by council members. It is therefore clear that the municipal council is the main decision-making body of a municipality.

All South African legislation and public administration are subject to the Constitution as the supreme law of the country. Therefore all 257 municipalities in SA must be governed according to the 'democratic values and principles enshrined in the Constitution' in Chapter 2 (The Bill of Rights) and in Section 195. These values and ethics should guide all municipal governance and decision-making processes.

The Constitution provides for additional legislation that defines in more detail the structures, processes, resources and governance of a municipality. The mandate given to local government by the Constitution in 1996 paved the way for a 'fundamental transformation' of local government under the apartheid regime (RSA, 1998a:22). The White Paper on Local Government of 1998 (RSA, 1998a), (hereafter 'The White Paper') builds on the Constitution and sets out a more detailed framework for a democratised and transformed system of developmental local government in SA.

The White Paper could be regarded as 'a "mini-Constitution" for local government', affecting all South Africans (RSA, 1998a:6). It sketches the current contextual reality (of 1998) and describes in broad terms the characteristics and the desired outcomes of developmental local government within a cooperative governance system as foreseen in Chapter 3 of the Constitution (RSA, 1996). The White Paper defines the frameworks for the institutional systems, the political systems and the administrative systems for a transformed developmental local government. A framework for an entirely new municipal financial system is also included.

The suite of legislation inspired by the White Paper would 'mark the end of the transitional system of local government, and the establishment of a new, democratic and non-racial local government system' (RSA, 1998a:97). Several laws (among many others) that would enact the policy directions of the Constitution and the White Paper are reviewed briefly. These acts are the Local Government: Municipal Structures Act of 1998, the Local Government: Municipal Systems Act of 2000, the Local Government: Municipal Finance Management Act of 2003, the Public Audit Act of 2004 and the Public Audit Amendment Act of 2018, and the Intergovernmental Relations Framework Act of 2005.

These specific laws are entangled with one another and with the Constitution. They constitute the basis of local government and governance in SA.

#### The Municipal Structures Act 117 of 1998

The Municipal Structures Act, Act 117 of 1998 (RSA, 1998b), hereafter referred to as the 'Structures Act', provides for the establishment of different categories and types of municipalities, and the division of functions and powers among them. The Hessequa Municipality is a Category B 'municipality with a mayoral executive system combined with a ward participatory system' (Section 9(d)). The composition, membership and operation of municipal councils are discussed in Chapter 3 of the act. The municipal council has to devise and implement governance systems to achieve the developmental objectives as stated in the Constitution. A council may make by-laws (Section 31(2)) and must develop a system of delegation (Section 32) to perform its duties efficiently and effectively. Section 21 states that every citizen, who is not disqualified in terms of Section 158(1) of the Constitution, and who is qualified to vote in a municipal election also has the right to become and remain a councillor.

Chapter 4 of the Structures Act regulates the establishment and operation of executive committees and ward committees, the election of mayors and their functions and powers, the appointment of municipal managers, and the participation of traditional leaders in municipal governance. The purpose of a ward committee is 'to enhance the participatory democracy in local government' (Section 72(3)). A ward committee is only allowed to 'make

recommendations on any matter affecting its ward' (Section 74(2)) to the political structures of the municipality but may not take decisions on such matters. Municipal councils may establish committees to perform delegated functions or to exercise relevant powers in support of the effective and efficient operation of a municipal council (Section 79(a)). Section 81 regulates the identification and involvement of traditional leaders in municipal councils.

Chapter 5 addresses the functions and powers of municipalities as set out in Section 156 and Section 229 of the Constitution. Schedule 5 of the Structures Act contains the code of conduct for councillors. The values of good faith, honesty, transparency, credibility and integrity are emphasised specifically. Councillors may not interfere unduly in the administration of a municipality.

The Structures Act provides the structural framework within which a municipal entity must perform its functions. It can be argued that most, if not all the organisational structures defined in this act are devised to enhance municipal decision making.

#### The Local Government: Municipal Systems Act 32 of 2000

The Local Government: Municipal Systems Act, Act 32 of 2000 (RSA, 2000), hereafter the 'Systems Act', contains numerous stipulations that co-define municipal decision-making processes and structures, and the efficient operation thereof. This act 'establishes a framework for planning, performance-management systems, effective use of resources, and organisational change in a business context' (Main, 2020:13). It defines the legal nature of a municipality within the constitutional system of cooperative governance (Section 41 of the Constitution). The act provides for the core principles, mechanisms and processes that are necessary to achieve the developmental objectives of local government as stated in the Constitution and in The White Paper. The Systems Act emphasises the importance of a partnership between the local community of a municipality and the administrative and political structures thereof.

The Systems Act confirms the right of a municipal council to 'govern on its own initiative the local government affairs of the local community' without improper interference, and in the best interest of the local community (Section 4). Section 11(1) states that '[T]he executive and legislative authority of a municipality is exercised by the council of the municipality, and the council takes all the decisions of the municipality' subject to provisions regarding delegations referred to in Section 59 of the Systems Act. Members of the local community have the right to 'contribute to the decision-making processes of the municipality' (Section 5). Chapter 4 of this act deals with community participation in municipal affairs.

The Systems Act makes provision for various decision aids. Some decisions of a municipal council are formulated, passed and implemented as by-laws (Section 12). By-laws give effect to municipal policies. The municipal delegation system is an additional instrument used by a municipal council to delegate appropriate powers in order to 'maximise administrative and operational efficiency and provide for adequate checks and balances' (Section 59). Provision is also made for the establishment of advisory committees for the municipal council consisting of members of the community of the municipality (Section 17).

Chapter 5 of the Systems Act provides a comprehensive framework for planning in terms of the integrated development plan (IDP). An IDP adopted by a municipal council 'is the principal strategic planning instrument which guides and informs all planning and development, and all decisions regarding planning, management and development in the municipality' (Section 35). The IDP co-defines to a large extent the contents of the annual budget as explained in the Municipal Finance Management Act (MFMA). The performance management framework that is prescribed in Chapter 6 of the Systems Act is closely linked with both the annual budget and the service delivery and budget implementation plan (SDBIP) set out in Section 53 of the MFMA.

Schedule 1 and Schedule 2 of the Systems Act contain the codes of conduct for councillors and for municipal staff members respectively. These codes contain the democratic values and principles of the Constitution that should characterise behaviours of councillors and officials of municipalities. The codes specifically rule out the inappropriate intervention of councillors in the administration of a municipality, as well as the inapt and undue influence of the municipal council by a staff member of the municipality.

The Municipal Systems Amendment Act, Act 7 of 2011 (RSA, 2011), aims to professionalise local government. The act requires that the administration of municipalities is staffed by persons with appropriate skills and competencies that are adequate for the appointments. The Systems Act and the MFMA are closely integrated.

### **The Municipal Finance Management Act 56 of 2003**

The Municipal Finance Management Act, Act 56 of 2003, (hereafter the MFMA) aims ‘to secure sound and sustainable management of the financial affairs of municipalities...(and) to establish treasury norms and standards for the local sphere of government’ (RSA, 2003:2). This act defines in relatively detailed terms the legal framework, governance structures and processes associated with municipal financial and fiscal affairs. Chapter 9 of the MFMA makes provision for the establishment of the budget and treasury office within each municipality. The act clarifies and separates the roles and responsibilities of the mayor, the executive committee, councillors and officials. It defines the responsibilities of both the municipal manager as the accounting officer, and the chief financial officer (CFO).

The MFMA sets strict norms and standards for the management of municipal revenues, expenditures, cash, investments, assets, liabilities, bank accounts and the execution of financial transactions. The Act prescribes the financial planning and budgetary processes and the governance processes involved. Chapter 4 of the MFMA addresses municipal budgets. It specifies the contents and the supporting documents of the operating and capital budgets. Both these budgets must be consistent with the integrated development plan (IDP) and the budget-related policies of a municipality. Once the annual budget is approved the service delivery and budget implementation plan (SDBIP) as well as performance agreements of officials have to be finalised. The MFMA also spells out in detail the dates of certain critical milestones for the annual budgetary and reporting cycles. These cycles are integrated with corresponding cycles of other spheres of government in terms of cooperative governance principles. The integrated annual processes of planning, budgeting, implementation, performance review, reporting and auditing are driven by the prescribed schedules in the MFMA and other acts, especially the Systems Act.

The MFMA is very specific about the roles, functions, accountabilities and responsibilities of the mayor (Chapter 7), the speaker, the municipal council, officials of the municipality (Chapter 8) such as the municipal manager (as the accounting officer), and the CFO (Chapter 9) within the domain of municipal finance. Section 32 of the MFMA, for example, stipulates the functions, responsibilities and liabilities of the councillors and officials regarding unauthorised, irregular or fruitless and wasteful expenditure. The accounting officer must delegate powers and duties to officials to maximise administrative efficiency.

Chapter 11 of the MFMA defines the regulatory framework for municipal supply chain management. It also makes provision for public-private partnerships (PPPs). The MFMA prescribes the financial reporting and auditing functions of a municipality in Chapter 12. A municipality must prepare an annual report after completion of a financial year. This report contains a record of activities of the municipality and its performance against the budget. The annual financial statements and the AG audit report on these statements are included in the annual report. After having considered the annual report, the municipal council must adopt an oversight report which contains the council’s comments on the annual report. This formalised

governance process is designed to facilitate a learning process that should guide municipalities towards their developmental objectives.

Chapter 15 of the MFMA addresses financial misconduct by municipal officials and councillors. A councillor is guilty of an offence if that councillor deliberately interferes with the financial management of the municipality in an inappropriate manner or when a councillor tries to influence an official to contravene a provision of the MFMA. The codes of conduct for councillors and officials are included in the Systems Act (Schedule 1 and Schedule 2 respectively).

### **The Public Audit Act 25 of 2004 and the Public Audit Amendment Act 5 of 2018**

The Public Audit Act, Act 25 of 2004 (RSA, 2004), and the amended act, the Public Audit Amendment Act, Act 5 of 2018 (RSA, 2018b), establish and assign functions to the Auditor-General (AG). The AG is a person appointed in terms of Chapter 9 of the Constitution. These acts mandate the AG to give effect to the provisions of the Constitution and to audit institutions in the public sector. Every year the AG publishes the audit outcomes of each municipality in an audit report. The amendment act allows the AG to step in to address material irregularities when a municipal manager, a mayor or the council do not perform their functions as set out in municipal legislation such as the MFMA.

### **The Intergovernmental Relations Framework Act 13 of 2005**

The object of the Intergovernmental Relations Framework Act, Act 13 of 2005 (RSA, 2005) is to provide a framework for the three spheres of government to facilitate intergovernmental coordination of the implementation of policy and legislation. This act facilitates coherent governance, effective provision of services, and the realisation of national priorities (Section 4).

### **Legislation with potential implications for municipalities**

Government is considering legislation and other initiatives to address a number of strategic issues that may affect the Hessequa Municipality. A National Water Security Framework (NWSF) for South Africa is being prepared to ensure that existing legislation is implemented properly. One of the recommendations is to align local government legislation with national legislation in order to ensure freshwater security in the long term (NPC, 2020:35). The Carbon Tax Act number 15 of 2019 (RSA, 2019a) imposes a carbon tax on the carbon dioxide equivalent of greenhouse gas (GHG) emissions resulting from fuel combustion and industrial processes. The aim is to limit GHG emissions into the atmosphere that cause global warming. On 10 June 2021 president Ramaphosa announced that the Electricity Regulation Act will be amended to increase the licence-free threshold for embedded generation from 1 MW to 100 MW (Lilley, 2021). This will allow investors to install up to 100 MW generation capacity and to connect these power plants with the national power grid. Municipalities may benefit from this initiative. Suggested changes to section 25 of the Constitution in the Constitution Eighteenth Amendment Bill may result in dramatic changes in ownership of land, expropriation of land without compensation, and changes in asset values that may affect municipal income (Jeffery, 2021; RSA, 2021).

### **Conclusion**

The Constitution and The White Paper on Local Government lay the foundation of a legal framework intended to promote good, effective, efficient and transparent local governance. The coherent suite of legislation reviewed above emphasises the importance of the following principles and values (among many others):

Legislation is clear and unambiguous about accountabilities, responsibilities, roles and functions of municipal officials and councillors.

The legislative and executive powers of the municipal council are separated from the administrative functions of the administration.

The policymaking role of the council is distinct from the policy implementation role of the administration.

Governance structures, processes and systems are defined properly and are adequate to support the auditing and reporting obligations of municipalities.

The active participation of citizens and the involvement of communities and community organisations in matters of local government are emphasised. (e.g., Section 152 of the Constitution; Section B of The White Paper and Chapter 4 of the Systems Act).

The values of effectiveness and efficiency, accountability and responsibility, equality, transparency, integrity, and care for the poor and the disadvantaged are fundamental. (e.g., the Bill of Rights in the Constitution; The White Paper), as well as continuous improvement and proactive governance (e.g., Preamble and Section 41 of the Systems Act)

Governance processes and audit processes are transparent and responsive, and aim to eliminate poor performance and underperformance (e.g., Chapter 12 of the MFMA).

South African legislation that informs local government provides a comprehensive definition of an integrated governance system in terms of the seven aspects of the Biomatrix systems framework:

*Environment aspect:* The legislation constitutes the legislative environment of municipalities. The White Paper on Local Government (RSA, 1998a) describes the external environment of municipalities and lists more than two hundred and fifty different national and provincial acts that co-defined the legislative environment of municipalities in 1998. The current simplified suite of legislation provides a comprehensive framework that constitutes the internal and external legislative environments of a municipality.

*Ethos aspect:* The ethos of the municipality lies at the core of the institution and has a direct influence on the other aspects. The cohering values and guiding principles that inform the functioning and development of a municipality are stated explicitly in the Constitution, specifically in the Preamble, Chapter 1 (Founding provisions), Chapter 2 (Bill of Rights) and the first part of Chapter 10. These values find expression in all legislation that informs local government. The MSA (Section 51), for example, prescribes that a municipality must organise its organisation to facilitate a culture of responsiveness, a service orientation, accountability, a performance orientation, effectiveness, efficiency and flexibility. A transformation of the ethos aspect must result in a transformation of the entire system.

*Aims aspect:* Section 152 of the Constitution specifies the objects (i.e., the aims or specific outcomes to be attained) of local government. These objects direct the activities and functions of the municipality.

*Process aspect:* Legislation prescribes all the important processes involved in local governance in much detail. See the MSA, the MFMA and the Municipal Structures Act for example. These processes include elections, the appointment of councillors and officials, policymaking, policy implementation, delegation processes, communication, integrated development planning, budgeting, financial and administrative management, governance functions, service delivery, and numerous other processes. Legislation also prescribes decision-making processes in comprehensive detail.

*Structure aspect:* Legislation prescribes numerous spatial and temporal structures for a municipality. The MSA and the Municipal Structures Act contain examples of both types of structures. The spatial organisational structure is based on bureaucratic principles, hierarchies, delegation of authorities and responsibilities, division and subdivision of work processes and departments, reporting and communication networks, as well as rights and duties of stakeholders. A temporal perspective of municipalities and the legislation that has informed it over the last decades reveals how both the legislation and municipalities have co-evolved and changed structure into their current form. (See e.g., the White Paper.) The National Development Plan envisions an ideal future and new functions for municipalities by 2030. Prescribed and legislated temporal structures make provision for strict milestones and due dates for various cyclical processes, e.g., integrated development planning, compilation of the budget, feedback on performance measures, and elections.

*Governance aspect:* The overall aim of legislation is to ensure that all the aspects of municipal governance contribute effectively and efficiently to the realisation of the aims and objectives of the municipality according to the values and principles thereof. Legislation provides the values, principles and rules according to which governance should take place. It makes provision for the monitoring and reporting of performance in terms of key performance indicators and performance targets. Legislation also prescribes what action should be taken and what sanctions should be applied when deviations are detected. The Auditor-General's annual report on local governance performance provides a high-level perspective on the quality of municipal governance in SA.

*Substance (or resources) aspect:* A municipality employs various categories of resources. Human resources and various types of actors (as stated above) contribute intelligence and information to all municipal functions. Legislation prescribes minimum qualifications for certain categories of administrative staff and councillors. Legislation as such constitutes the critical informational resources that inform governance. Municipalities are mandated to collect financial resources from users of their services. This money is used for the establishment of municipal infrastructure required for service delivery as contemplated in the White Paper, the Constitution and other acts. Municipalities must collect data and information, e.g., through community participation, to inform policy formulation and the integrated planning process.

*Systems aspects are holographic:* Each of the above seven system aspects is holographically reflected in each of the other aspects. Each aspect contains all the others. They change and evolve interactively. Each of them is dynamically interconnected with other systems external to the municipality. A change in any one of these aspects influences all the other aspects.

*System aspects exist in three dimensions:* Each system aspect exists within three overlapping dimensions, i.e., the naturosphere, the technosphere, and the psycho-sociosphere. Legislation reviewed above primarily addresses the political dimension within the psycho-sociosphere.

#### The environmental dimension

The environmental dimension focuses on variables related to the natural environment that may influence municipal decision making. These variables include the availability and utilisation of natural resources, the production of waste and pollutants, and the resultant impacts on the environment. A comprehensive overview of the natural environmental context appears in Du Toit, Haldenwang, Baxter, Chapman, Roux and Vink (2016).

Hessequa Municipality is situated in the southern Cape on the Garden Route. It is located between the Langeberg Mountains in the north and the pristine beaches of the Indian Ocean coastline in the south between the Breede River and the Gourits River. The name Hessequa means "people of the tree" and refers to the Khoikhoi tribe that used to live here. The region is rich in natural beauty, sensitive fynbos, dune thicket, Renosterveld, indigenous forests and Karoo. Ecological assets include four estuaries, a world heritage forest site and several nature

reserves which guard numerous rare and endangered plant and animal species. The municipal area includes the towns of Slangrivier, Heidelberg, Riversdale and Albertinia along the N2 National Road, and Witsand, Jongensfontein, Stilbaai, Melkhoutfontein and Gouritsmond along the coast.

The Hessequa region is located in a water scarce area that experiences frequent and severe droughts. Some towns depend on unreliable supplies of water from boreholes. Fresh water supplies to Witsand are augmented by means of a solar powered desalination plant. Agricultural practice is the most common form of land use in the area. The availability of mineral resources is limited but the Western Cape area has sufficient supplies of wind and solar power potential to justify viable investments in renewable energy installations (International Trade Administration, 2021; Knorr, Zimmermann, Bofinger, Gerlach, Bischof-Niemz & Mushwana, 2016). Limited volumes of biomass are also available. Although the hydro-electricity potential is low the potential wave energy in the ocean is unlimited.

The Blue Economy refers to the sustainable utilisation of marine resources to benefit human well-being and social equity (UN, 2016). Two small communities (at Still Bay/Melkhoutfontein and Witsand) depend on fishing for a living.

Several trends are impacting upon ecosystems all over the world. These include the escalating effects of climate change and global warming (IPCC, 2018), an increase in the ecological footprint of humanity, biodiversity loss, and an increase in the demand for fresh water supplies (WWF & African Development Bank, 2012). A comprehensive overview of the impacts of global warming and climate change is provided by Du Toit *et al.* (2016). Climate change is expected to increase land surface temperatures, lower precipitation rates and increase sea levels.

The era of 'the Anthropocene or Human Age, marks the first time in the history of the world that human activities are the primary force in shaping all life-sustaining systems on earth' (Schwab, 2016:103). Current debates concerning environmental trends focus largely on the effect of economic activity and associated pollution on ecological systems, the linkages between greenhouse gas emissions and climate change, the over-exploitation of limited natural resources, sustainable economic development, and the ways mankind interacts with the environment. Increasing levels of global resource-intensive economic activity are having severe impacts on the natural environment, industries and on people (Gore, 2006; Martin, 2006; Stern, 2006; Laszlo, 2010; McKinsey Global Institute, 2019).

The Stern review of the economics of climate change provides a comprehensive review of the effects of global warming and climate change (Stern, 2006). Stern reviews the medium- to long-term economic, social and environmental consequences of climate change induced by an increasingly larger volume of man-made greenhouse gas emissions. He concludes that 'climate change is a serious global threat, and it demands an urgent global response' (p. vi). If current trends of increasing volumes of greenhouse gas emissions continue the irreversible impacts of climate change upon all aspects of human life and the ecology will be both severe and disruptive. All countries will be affected. Each country also has a duty to implement adaptation and mitigation strategies to limit the impacts of global warming.

The risks associated with global warming can be significantly reduced if the atmospheric concentration of greenhouse gases can be stabilised between 450 and 550 parts per million (ppm) carbon dioxide equivalent (CO<sub>2</sub>e) (Stern, 2006: vii). Although the aim is to limit the average global mean surface temperature (GMST) increase to below two degrees centigrade above pre-industrial temperatures it is possible that temperatures may increase by five to six degrees in the decades to come if the CO<sub>2</sub>e concentration continues to increase at more than two ppm per year. Such an increase is projected to have catastrophic consequences for humanity, the biosphere, and especially for the less developed countries.

In a recent assessment the Intergovernmental Panel on Climate Change (IPCC) found that 'rapid, far-reaching and unprecedented changes in all aspects of society' would be required to limit global warming to 1,5 degrees centigrade (IPCC, 2018). Human-induced warming had already increased the GMST by almost one degree centigrade since pre-industrial levels by 2017 and it continues to increase at a rate of about 0,2 degrees per decade. The IPCC also warns that many of the impacts and implications of global warming 'fall disproportionately on the poor and vulnerable'. The 'climate-resilient development pathways' recommended by the IPCC are aligned with the sustainable development goals (SDGs) aimed at poverty eradication and the reduction of inequalities.

Climate change is already affecting the availability, quality and quantity of fresh water for human consumption in all spheres of society (UNESCO, 2020). Increasing variability in the world's water cycles has negative effects on conventional energy production, agriculture, biodiversity, ecosystems, human health, food security and the daily livelihoods of people living in poverty. Climate change and water (in)security are perceived as 'two of the most critical crises the world will continue facing over the next several decades' (p. vi). Conversely, good water management through mitigation, adaptation and improved resilience measures can have significant favourable implications for climate change. This UN report discusses the critical linkages between water usage and climate change with specific reference to the influence of both these factors on the SDGs (p.12). This UNESCO report reviews the interrelationship between (fresh) water and climate change. It sketches a very concerning picture.

Water-related climate change impacts on sub-Saharan Africa and southern Africa are already acute. A recent decrease in rainfall in southern Africa and a rapid increase in the African population are posing serious challenges for meeting the development targets of the 2030 Agenda (UNESCO, 2020: 132). This UNESCO reports also highlights the negative impacts of water shortages within the multi-national water-food-energy-climate nexus of SSA. Low levels of adaptive capacity, especially in agriculture, as well as complex socio-economic and political dynamics leave the African people highly exposed to the impacts of climate change and water shortages. Sharing of water resources that cross national boundaries makes matters worse.

'Climate change is the greatest market failure the world has ever seen, and it interacts with other market imperfections' (Stern, 2006: viii). Stern recommends that global markets for carbon credit trading should be established to catalyse and stimulate the production of low carbon products and services. Swilling and Annecke (2012) argue that resource decoupling and impact decoupling are prerequisites for a more sustainable world economy and society. Resource decoupling refers to a reduction in the use of energy and material inputs per unit of economic output. Impact decoupling refers to the reduction of environmental impacts per unit of economic value added (Swilling & Annecke, 2012:74-75). In the case of developed economies, the painful process of 'radical decoupling' will be required (p. 103).

Earth Overshoot Day (EOD) is an estimate of 'the date when humanity's demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year' (Global Footprint Network, 2020). EOD for 2020 is on August 22, an event that moves to earlier dates almost every year. EOD for 2021 is on 29 July. For the rest of the year the ecological deficit grows as resource stocks are consumed and as carbon dioxide accumulates in the atmosphere. The ecological footprint in terms of the number of earths that are required to satisfy humanity's need for resources has increased from 1,0 in 1970 to 1,69 in 2016 (Wackernagel & Beyers, 2019). The gap between the biocapacity of the planet and the ecological footprint of humanity continues to increase. The net effect is an increase in the ecological deficit.

### **Strengths and limitations of a PESTLE analysis**



A PESTLE analysis provides a convenient framework to examine the contextual environment in terms of six separate domains. The analysis provides an informative presentation of global and local events, trends and patterns within different domains without investigating the underlying driving forces or the causal links at work within or among these domains. A PESTLE analysis provides decision makers with *information* and *knowledge* about the contextual environment without an accompanying *insight* or *understanding* about the dynamic context. This kind of analysis does not expose leverage points or causal factors in the contextual arena.

A PESTLE analysis may, however, reveal risks, threats and opportunities to address. Technological innovation, demographic trends, globalisation and other megatrends contribute to disparity, and increasing social and political discontent (McKinsey Global Institute, 2019). Automation will force workers to change occupations, to become lifelong learners, and to acquire new technological, emotional and social skill sets (Schwab, 2016). 'Automation will also spur growth in the need for higher-level cognitive skills, particularly critical thinking, creativity, and complex information processing' (McKinsey Global Institute, 2019). A study of climate change effects for example, provides early warning about numerous risks and threats for humankind to address.

A key disadvantage of a PESTLE analysis is that it evaluates events and trends of different domains of society in isolation, without an analysis of the interaction among these domains. In addition, the analysis does not normally consider the underlying mental and cultural processes that inform the systems that co-produce the events and trends in each PESTLE domain.

A Causal Layered Analysis (CLA) complements the PESTLE framework and addresses some of its limitations. The CLA framework is discussed next.

### **A causal layered analysis**

A CLA heeds the advice of Sinclair (2012) who argues that a close study of the world should include a careful examination of 'the ways of thinking that shape it'. 'The choices made by states, peoples and individuals are crucially shaped by ideas about the world held as axioms, or taken-for-granted assumptions, by others. Collectively held ideas are enormously powerful' (Sinclair, 2012:5). Metaphors and images stimulate intellectual inquiry and 'provide the building blocks from which new concepts emerge and on the basis of which different theories are formulated' (Chapman, 1991:263). It is also at this level where a decision maker has the strongest leverage to effect systemic change (Meadows, 1999).

A causal layered analysis can be performed by means of the 'five why's' technique (Senge, Kleiner, Roberts, Ross & Smith, 1994:108), the iceberg model (Academy for Systems Change, 2021) and by means of the Causal Layered Analysis (CLA) method (Inayatullah, 1998; 2004). Slaughter (2002:494) developed a similar analytical framework called 'structural mapping' to address contextual variables at different levels of causality. CLA captures the logic of all these approaches as follows (Inayatullah, 2014:26): CLA delves below the litany and the data level of reality in search of a systemic-level understanding of the causes of events and trends observed at the surface. Below the systems level CLA searches for worldviews and stakeholder views that co-define the systems that produce visible outcomes. CLA also explores the deeper level of myths and metaphors that co-create worldviews and paradigms.

Scenarios based on different stakeholder views, worldviews, paradigms and myths can be used to construct problems and solutions in different and innovative ways. The robustness of a new strategy or plan can be tested in terms of systemic changes involved, changes in worldview and metaphor, and changes in resultant outcomes (Inayatullah, 2014).

The causality and leverage effects between different levels of understanding can be interpreted in terms of a framework developed by Meadows (1999). Meadows explains how the strength of leverage effects in systems increases in power and effect as the leverage is applied at the

levels of paradigms and worldviews, myths and metaphors rather than at the level of parameters and feedback processes. Similarly, the behaviour of individuals and groups of decision makers can be understood better when their level of ego development (Cook-Greuter, 2005; 2013) and their value systems and worldviews (Beck & Cowan, 2006) are explored and understood.

This section represents the attempt of the researcher as *bricoleur* to merge the above methods of layered analysis into four levels of understanding before applying it. The essential aspects of the different analytical methods are summarised in Table L-2.

**Table L-2: Different methods for causal layered analysis of the environment**

	Iceberg model	Structural mapping	Causal layered analysis	Bricoleur's merged approach
<b>Surface level</b>	Events, patterns of behaviour.	Superficial and popular observations and events.	The litany, the most visible events and observations.	Events, trends, wicked and adaptive challenges.
<b>Systems level</b>	System's structure and functioning.	Practical problem-oriented rules, policies, laws, regulations, innovations, trend analysis, scanning.	Political, economic, social, technological and historical systemic causes.	Dynamic systems spanning different domains and levels of understanding.
<b>Paradigm level</b>	Mental models, values, assumptions, beliefs.	Paradigms and worldviews, myths, values, culture, philosophy, epistemology, ontology, transformation of worldviews.	Worldviews and discourses. Interests of actors, ideologies, worldviews and epistemes.	Mental models, paradigms and worldviews, stakeholder views, values, culture.
<b>Myth and metaphor level</b>			Myths, metaphors, deep stories, emotional and visual images.	Myths and metaphors.

Sources: Slaughter, 2002; Inayatullah, 2002; 2004; Academy for Systems Science, 2011

The main purpose of this section is to illustrate how a multilevel perspective can reveal important aspects of a contextual issue that are not observed by means of a PESTLE analysis. The primary focus of the PESTLE analysis above is mainly on the 'surface level' and to a lesser extent on the 'systems level'. The CLA delves deeper. It aims to discern what deeper invisible mental positions are shaping the systems that co-produce the effects at the surface level.

The '*bricoleur's* merged approach' of a CLA will be applied to two contextual variables or wicked problems that apply to the Hessequa area. Unemployment is discussed first and then the local impacts of climate change. In the following layered analyses, the issues in focus are identified and described first in terms of observations, events and trends. Second, the systemic nature or origin of the issue is discussed. Third, the worldviews or paradigms that influence or co-produce the system(s) are reviewed. Fourth, the corresponding myths or metaphors are identified. (See Appendix L).

### **Unemployment:**

At the *surface level*, unemployment is a great cause of concern, especially youth unemployment (Stats SA, 2021). Unemployment is identified as a national challenge and crisis that is getting worse (NPC, 2012; Roux, 2016; Jonas, 2019). During the first quarter of 2021 the national unemployment rate was 32,6 per cent, the youth unemployment rate (for those aged 15 to 34 years) was 46,3 per cent, and 63,3 per cent for those aged 15 to 24 years (Stats SA, 2020b).

At the *systems level*, numerous factors contribute to unemployment (NPC, 2012; Plaut & Holden, 2012; Roux 2016; DTI, 2018; Jonas, 2019; Duvenhage, 2020). Unemployment is linked to economic factors such as low economic growth rates, poverty, inequality of ownership of productive assets, and economic exclusion of certain groups. Structural unemployment in SA is associated with an unfavourable gap between the supply and demand of skills, expertise and education. There is a mismatch between the supply of unskilled labour and the demand for skills in the economy. The primary sector of the economy has been shedding jobs while the tertiary sector has been creating employment for skilled and educated people. South Africa's informal sector makes a small contribution to job creation. The manufacturing sector is underperforming and does not create employment opportunities as expected (DTI, 2018). The net effect is an oversupply of unemployable job seekers. Economic growth is stifled by the effects of state capture, low levels of business confidence, deteriorating international credit ratings, inappropriate legislation, and conflict among the coalition members of the ruling party, the ANC (Plaut & Holden, 2012; Basson & Du Toit, 2017; Jonas, 2019). Events during July 2021 illustrate the critical and fragile nature of the socio-economic and political SA context (BER, 2021; 2021b).

Structural changes in the economy have a profound effect on the labour market. In SA the relative contribution of the primary sector of the economy to GDP has been shrinking and the contribution of the tertiary sector has been growing (Roux, 2016). Legislation discourages employers to employ more than the absolute minimum number of employees required. In addition, labour costs increase at a faster rate than labour productivity (Roodt & Retief, 2013).

In some cases, labour can be replaced with capital to perform certain functions. Low interest rates and escalating labour costs have favoured capital-intensive growth in SA since the mid-1990s (Roux, 2016). The Fourth Industrial Revolution may have a significant influence on job markets globally and locally (Schwab, 2016; WEF, 2016). Unqualified job seekers will be excluded from the 4IR economy.

Unemployment is also linked to demographic factors such as immigration of skilled labour and population growth. Path-dependent factors claimed to contribute to unemployment are closely linked to *apartheid* labour policies and colonialism. Current labour laws, minimum wages, affirmative action arrangements and employment equity requirements are not aligned with the aims of job creation. Investors are scared off by corruption, state capture, uncertainty about property rights, and social instability. South Africa has been sliding back on the world competitiveness ranking published by IMD from position 53 in 2017 to position 62 in 2021 (IMD, 2021). Globalisation has exposed the fragility and uncompetitive nature of the SA economy. In future the impacts of 4IR will have major positive and negative implications for the global labour market (Vargas & Teixeira, 2018).

The current conventional education system does not equip matric learners with qualifications and (life) skills that are required in the workplace. The SA education and training system has failed the youth (Jonas, 2019:31). Most of the schools in the Hessequa area are 'no-fee' schools with a minimum variety of school subject options and without libraries. The SA education system is based on an outdated curriculum and not equipped to take advantage of 4IR. The WEF (2016) identifies the following core work-related skills that will be in demand in the very near future: Cognitive abilities (e.g., creativity, logical reasoning, problem-solving skills), basic skills (e.g., active learning and listening, good oral and written expression, ICT

literacy), cross-functional skills (e.g., social and systems skills, complex problem-solving skills, resource management skills, and technical skills such as programming and troubleshooting). It appears as if there is a big skills gap between what is observed locally and what is required for the future skills pool.

Schwab (2016) warns that 4IR will impact upon all sectors of society. 'The greatest socio-economic menace of 4IR in this area is to generate insufficient demand for labor or available labor skills, threatening to throw millions of workers into structural and/or precarious unemployment' (Vargas & Teixeira, 2018). To prevent a worst-case scenario of disruptive technological transformations accompanied by 'talent shortages, mass unemployment and growing inequality – reskilling and upskilling of today's workers will be critical' (WEF, 2016:v).

At the *level of paradigms and worldview*, it may be reasonable to state that a complex adaptive systems paradigm is more appropriate to describe the global economy than the reductionist Newtonian paradigm. In SA, the historic *apartheid* paradigm informed legislation that laid the foundations of an unsustainable society and economy. During the *apartheid* era the focus was placed on economic growth and not on economic development. A claim is made that the compromised political economy deal of the post-apartheid SA is not sustainable either (Jonas, 2019:1-2). The consensus agreement of 1994 as captured in the Constitution did not reconcile the diverse and opposing interests and viewpoints of the key stakeholders involved, namely the mainly white capitalists, organised labour, poor and unemployed people, and the upcoming black elite. These interests and viewpoints are still at loggerheads. Current SA legislation reflects the interests of a free-market economy perspective, socialism and capitalism. The profile of employment in SA reflects the apartheid history and the realities of the multidimensional landscapes of SA within a global context. It appears as if an entirely new paradigm in the SA economical-political-societal-technological domain is required to inform a new systemic framework that may produce desired outcomes (Swilling & Annecke, 2012:4).

At the *level of metaphor*, unemployment in SA has become 'a ticking time bomb' (Roodt & Retief, 2013:180). Poor education and unemployment has transformed the SA youth dividend into a youth burden which may turn into a disaster (Jonas, 2019:196). The deteriorating socio-economic situation in SA is referred to as the 'frog in the pot' and the 'slow-puncture' effect, i.e., a gradual deterioration in circumstances (Jonas, 2019:3). The Fourth Industrial Revolution has brought the global economy and global society at a 'crossroads' (Vargas & Teixeira, 2018). It has vast potential to improve living conditions, and it holds 'lamentable potential risks'. Duvenhage (2020) refers to 'South Africa at a tipping point', i.e., a bifurcation point that may end up as 'a bad case scenario' equivalent to the 'Arab Spring' when he evaluates the socio-economic-political SA context. The ideals of 'a rainbow nation' as explained in the NDP (NPC, 2012) are covered by dark clouds.

### **Impacts of climate change:**

At the *surface level*, the Hessequa area, the Western Cape and large areas of SA have been experiencing severe droughts, extreme veld fires and frequent freshwater shortages (Dallas & Rivers-Moore, 2014). Local effects of rising sea levels have also been experienced. The increasing trend in the world's weather-related natural catastrophes (by peril) is a cause of great concern. These events increased from just over 200 in 1980 to 800 in 2018 (UNESCO, 2020:23). The corresponding global effects of climate change on food supplies and freshwater availability, the health of ecosystems, the occurrence of extreme weather events, and the onset of irreversible and rapid climate change effects are examined by Stern (2006:v), Gore (2006), Laszlo (2009:8-21), Swilling and Annecke (2012) and the International Panel on Climate Change (IPCC, 2013; 2018).

At the *systems level*, climate change and global warming are blamed for these local effects (Stern, 2006; Laszlo, 2009; Laszlo, 2010; Slaughter, 2010; IPCC, 2013). All these authors use

persuasive scientific evidence to substantiate their claims that anthropogenic substances and processes are major drivers of climate change. Pollution, deforestation, population growth and economic growth, globalisation and technological development produce increasing volumes of GHG emissions and reduce the planet's capacity to capture carbon. These processes contribute directly to climate change effects globally. Planet Earth is not able to cope with the ecological footprint of humanity anymore.

Gore (2006:249) states that '[O]ur new technologies, combined with our numbers, have made us collectively, a force of nature'. Gore concludes that factors such as 'the population explosion, the technological revolution, and a willingness to ignore the future consequences of our present actions' (p. 8) contribute to global warming and climate change. Human civilisation is on a collision course with the planet's ecological systems. A very important yet subtle factor contributing to this crisis is 'our fundamental way of thinking about the climate crisis' (p. 254) and a lack of wisdom to deal with modern 'technologically enhanced power' (p. 232).

Earth Overshoot Day falls on 29 July 2021 because humanity consumes the equivalent amount of resources that 1,6 planets produce (Global Footprint Network, 2021). In their report titled *Limits to Growth*, Meadows *et al.* (1972) warned about the effects of the overconsumption of earth's resources. Both the Stern review and the IPCC reports confirm that the impacts of global climate change are experienced at a local level. The systemic interaction between different sectors and domains are discussed below under the heading 'A systems perspective'.

It is at *the level of paradigm, worldview, values, ethics, perceptions, motivations and consciousness* where the real causes of both unsustainability and sustainability are to be found (Laszlo, 2009:73-90; Slaughter, 2010). Self-centred values and a materialistic consciousness fuelled global economic growth in a perceived vast machine-like universe. The obsolete values that characterise our modern society are based on the 'the value of getting', 'the paramount value of money', 'the indiscriminating valuation of technology' to solve all kinds of problems, 'the worship of the latest and newest', and 'the fetish of efficiency' (Laszlo, 2009:46-47). The outdated Newtonian paradigm upon which modern society is built has to be replaced by a theory of complex adaptive systems as a basis for sustainable development (Swilling & Annecke, 2012:3-4).

Future sustainability will be based on holistic and systemic thinking that encompasses ecological sustainability, prosperity and cross-cultural understanding. Wilber (2007) and Beck and Cowan (2006) refer to a corresponding consciousness called integral and holistic thinking. A future SA should be built upon the values stated in the National Development Plan (NPC, 2012) and the national Constitution.

*At the level of myth and metaphor*, a number of widely shared metaphors and myths very aptly describe the mental models according to which local and global business decisions are taken. Laszlo (2009:48-51) refers to the following myths: The earth is an inexhaustible, infinite source of raw materials. Nature is a giant Newtonian mechanism that can be manipulated at will. Life is a struggle and only the fittest creatures survive. Global markets correct imbalances and injustices through the 'invisible hand' of Adam Smith. The more you consume the better you are.

The climate crisis is 'a true planetary emergency' (Gore, 2006:10). Martin (2006:294) refers to it as a 'perfect storm'. Laszlo, a philosopher, system scientist, and futurist, argues that humanity has 'entered a state of global emergency' (Laszlo, 2009:xvii), alternatively 'a chaos point' or 'a tipping point' (Laszlo, 2010:xxvii-xxviii) as the result of a materialistic, self-centred and unsustainable way of life. Meadows *et al.* (1972) affirm that a sustainable global society must ultimately be founded on a new set of values and goals at individual, national, and world levels'. This will 'require a Copernican revolution of the mind' (Meadows *et al.*, 1972: 195-196). In SA the metaphor of 'state capture' is used to describe the current criminal, unethical and

unconstitutional values and ethics that contribute to an unsustainable society and the deterioration of the environment (Basson & Du Toit, 2017; Jonas, 2019). McCord (1952) believes that 'South Africa is a patient that is grievously ill'. However, the ideal of a 'rainbow nation' prevails (NPC, 2012).

### **Advantages and limitations of a causal layered analysis**

A layered contextual analysis offers several advantages. It unpacks the worldviews, discourses, ideologies, myths and metaphors that co-define the systems in focus (Inayatullah, 2004). It allows one to develop a broad and deep understanding of the current reality, and proposed futures. It allows a movement up and down the different layers of analysis. One can integrate analysis and synthesis, and horizontally one can integrate and combine alternative worldviews, systems and ways of knowing. Scenarios can be developed at each level or across levels in order to develop new insight and understanding. Better policies can be developed for the longer term based on a multilevel, holistic understanding of contextual issues at multiple levels (Inayatullah, 2004:18, 47).

An additional advantage of a layered approach is that vertical movement between different levels and horizontal movement within each level allow the decision maker to develop multiple perspectives of the issue in focus. Different paradigms may correspond with alternative systemic approaches to achieve a specific desired outcome. Problems and aims can be formulated more comprehensively by considering the points of view of different stakeholders. CLA is a useful theory of knowledge to create new, innovative and novel policies and strategies based on alternative paradigms and assumptions to address challenges of all kinds. CLA can also be used to test the robustness and expected effectiveness of strategies at each level of analysis (Inayatullah, 2014:26).

CLA has a few limitations (Inayatullah, 2004:41). Practitioners may not have the critical and hermeneutic skills required to explore the deeper levels of the analysis. Empiricists may find it difficult to appreciate the value of worldviews, myths and metaphors in a CLA and may reject the levels of the analysis.

### **A systems perspective**

This section uses several cases to illustrate how a general systems perspective reveals linkages between an issue of concern and its context that are not observed by means of a PESTLE perspective or a CLA analysis. The first cases below consider global issues, risks and challenges with local impacts and relevance in terms of a general systems perspective. The last case applies a Biomatrix systems perspective to unemployment in SA. This last case illustrates how a systems perspective can be used to investigate the main systemic aspects of any decision issue in its context.

### **A general systems perspective of global issues of concern**

A review of the Limits to Growth Report (LTGR), global challenges and risks, technological development and the food-water-energy nexus illustrate the nature and value of a systems perspective. The LTGR (Meadows, Meadows, Randers & Behrens, 1972) presents an early systems perspective of the effects of human activity on the global ecosystem. In 1968 The Club of Rome, concerned about 'the present and future predicament of man' initiated a study to develop a better understanding of the complex and dynamic interrelationships among several global variables (Meadows *et al.*, 1972:9). A systems dynamics world model was developed 'specifically to investigate five major trends of global concern – accelerating industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources, and a deteriorating environment' (Meadows *et al.*, 1972:21).

Meadows *et al.* (1972) demonstrate the longer-term effects of the dynamic interactions among several physical global variables. They illustrate the simultaneous effect of natural delays in ecological processes (p. 81), feedback loops, interactivity and causality (p. 89), and the nature of exponential growth (p. 25). The key message of their study is that exponential population growth and accelerating industrialisation will lead to the catastrophic collapse of various global systems (p. 142).

Meadows *et al.* (1972:23-24) conclude as follows: Continuation of current trends of rapid population growth, accelerating industrialisation, pollution, food production and resource depletion may lead to 'a rather sudden and uncontrollable decline in both population and industrial capacity' (p. 23) within the next century. The symptoms of the crisis are already visible in many parts of the world (p. 52). It is indeed possible to establish a state of global equilibrium with a sustainable global economy and ecology if current exponential growth trends can be altered in time (p. 24). The sooner attempts are made to embark on a more sustainable development trajectory, the greater will be chances of success (p. 24). Therefore, the authors plead for a great transition – a 'transition from growth to global equilibrium' (p. 24). The '*essential* problem ... is exponential growth in a finite and complex system' (p. 145, with italics in the original). The authors warn that continuation of this pattern will result in 'a disastrous collapse' (p.78).

Since the Club of Rome published the LTGR many other scholars shared their concern about the unsustainability of the Anthropocene in terms of a systems understanding thereof. 'This pervasive sense of the interconnectedness of the world, and therefore of the necessity for global solutions to problems, seems significant' (Sinclair, 2012:5). Many authors warn that the interconnected mega-problems of the twenty first century (i.e., climate change, demographic changes, technological development, natural resource depletion, pandemics, wars and terrorism) may have catastrophic consequences unless human ingenuity curbs this progression soon (Gore, 2006; Martin, 2006:30-32; Slaughter, 2010). A doomsday scenario can indeed be avoided if a number of leverage points are activated.

Favourable leverage effects can be achieved through education, elimination of extreme poverty, the substitution of carbon-intensive energy with renewable energy, and a less resource-intensive society. A desired future 'world of high civilization' will be based on new sets of values and goals, new models of behaviour, and the beneficial application of powerful technologies (Martin, 2006:493).

Laszlo investigates 'systemic clusters of unsustainabilities' (Laszlo, 2009: 8) in the global ecology, economy and society. Over-exploitation of natural resources such as fresh water and productive land, pollution, population growth, and the effects of global warming and climate change are all symptoms of an unsustainable global society. Economic decisions are based on short-term benefits without regard for the longer-term implications thereof (p. 17). Unsustainabilities in society include the rich-poor gap, the breakdown of social structures, poverty and unemployment (pp. 18-21). Laszlo (2009) warns that the 'unexpected acceleration' of global trends, and the 'disregard of feedbacks and cross-impacts' among these trends are reducing the time horizon of a global breakdown (p. 24). The only way to avoid this breakdown is to adopt a holistic, planetary consciousness and a new set of planetary values and ethics. Outdated values and myths should be forgotten (pp. 45-52). Laszlo's analysis of the current reality and his recommendations for desired and possible futures are based on a holistic complex systems approach. This approach links human consciousness, values and ethics to human behaviour in a highly interconnected and sensitive global ecology.

The Fourth Industrial Revolution provides another example of a global interconnected system with local impacts (Schwab, 2016). The effects of 4IR are spreading globally at the speed of light through interconnected networks in different dimensions and domains. Rapid and disruptive technological innovations constitute a source of constant surprise and uncertainty.

Schwab (2016:8-9) identifies three unique features of this technological revolution, which builds on the digital revolution and interconnected ICT networks: **Velocity**: Technological development proceeds at an exponential rate. **Breadth and depth**: The fusion and interaction of diverse technologies lead to 'unprecedented paradigm shifts in the economy, business, society, and individually'. **Systems impact**: Entire systems spanning geographical borders, companies, industries and society will be transformed. The implications of 4IR for employment, work force strategies, education, training and skills development are discussed in a report on the future of jobs (WEF, 2016).

Humanity is exposed to global risks. A study of global challenges and risks also illustrate the systemic nature of local and global contextual variables. Challenges and risks present decision makers with remarkable opportunities to exploit and serious threats to address. In *State of the Future* Glenn and Florescu (2017:iv-v) present an overview of fifteen global challenges as a 'systemic framework for understanding global change' to contribute to better-informed decision making. The challenges are interdependent. They are 'transnational in nature and transinstitutional in solution' (Glenn & Florescu, 2017:8). Therefore, these challenges can only be addressed fruitfully through collaborative action among role players from all over the world.

The global challenges are about sustainable development and climate change, sufficient supplies of clean water, and population growth that is balanced with the carrying capacity of the planet (The Millennium Project, 2020). The challenges include democratisation of authoritarian regimes, improved global foresight and decision making during turbulent times, harnessing the advantages of science and technology and 4IR to benefit humanity globally, and renewable energy technologies. The challenges address the income gap between rich and poor people, threats to human health, education and learning to enhance ethical decision-making capacity, promotion of peace and reduction of conflict and transnational organised crime. Gender equity and the status of women are also addressed. Almost all these challenges have local relevance.

The challenges are interconnected and interdependent. They span all kinds of planetary borders. Each of these challenges has been co-created by human behaviours, human value sets and paradigms. The challenges are the consequences of the way humans think and act. The challenges and associated risks are interlinked through non-linear feedback loops. (See Figure L-1.)

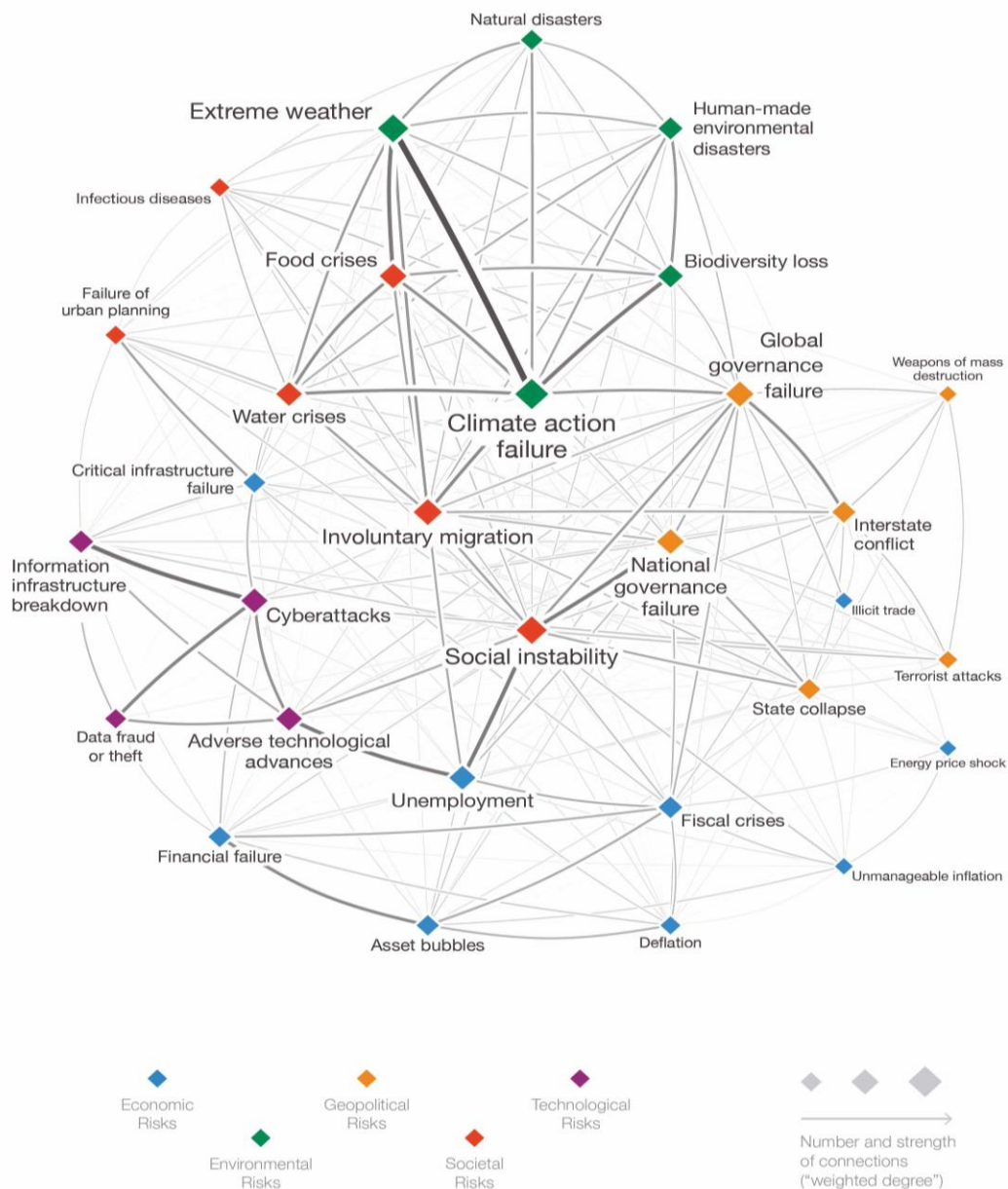
The World Economic Forum (WEF, 2020) reports on the perceived likelihood and impact of global risks. A 'global risk' is defined as 'an uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next 10 years' (WEF, 2020:86). Geopolitical, economic, societal, technological and environmental risks are identified. The top five risks in terms of likelihood are, for the first time, all environmental risks (World Economic Forum, 2020:ii). These are, in descending order, extreme weather events, failure of climate-change mitigation and adaptation measures, major natural disasters, major biodiversity loss and ecosystem collapse, and human-made environmental damage and disasters. The systemic links between human activity, global warming, climate change and the effects thereof are discussed in the reports of the IPCC (2013; 2018).

This list continues with the following risks, namely massive incidents of data fraud or theft, and large-scale cyberattacks (both technological risks), water crises (societal), failure of regional or global governance (geopolitical), and asset bubbles in a major economy (economic). The top five risks in terms of impact are the following (World Economic Forum, 2020:ii): Failure of climate-change mitigation and adaptation measures, deployment of weapons of mass destruction, major biodiversity loss and ecosystem collapse, extreme weather events, and water crises due to freshwater shortages. This list continues with more technological, political, economic, environmental and societal risks (such as the rapid and massive spread of infectious



diseases). The report warns that the global community is ill-positioned to address vulnerabilities associated with these interconnected risks (World Economic Forum, 2020:5).

The powerful global forces, megatrends, challenges and risks referred to above do not recognise borders and span the multidimensional domains of time and space. These economic, demographic and technological driving forces are co-creating a turbulent and 'unsettled geopolitical landscape' (World Economic Forum, 2020:6). The interconnected nature of the risks on this global landscape is indicated in the Global Risks Interconnections Map 2020 (see Figure L-1 below).



**Figure L-1: The global risks interconnections map 2020. (World Economic Forum, 2020:iv)**

Another excellent example demonstrating the complexity of the global context is the water-climate-energy-food-environment nexus (UNEP, 2013; UNESCO, 2020: 118-125). Sustainable development depends on a balanced water-food-energy nexus. The demand for all three resources is driven by a fast-growing global population, rapid urbanisation and economic growth. Increasing demands for water for fossil fuel production and bio-fuels production compete with demands for water for sanitation and food production. 'The inextricable linkages between these critical domains require a suitably integrated approach to ensuring water and food security, and sustainable agriculture and energy production worldwide' (UN-Water, 2021). Efforts to improve food security 'will depend on a better understanding of the complex relationships between food security and nutrition, the food systems in which they are embedded and the social, political and economic forces shaping them' (FAO, IFAD, UNICEF, WFP & WHO, 2017:22). These examples show how human activity systems are systemically integrated with natural ecosystems such as global climate systems. These systems span the borders of all nations and locations, including the borders of the Hessequa Municipality.

In 2000 world leaders adopted the Millennium Development Goals (MDGs) to be achieved by 2015 in order to address the above global challenges and risks. In 2016 these goals were succeeded by the universal Sustainable Development Goals (SDGs) for the year 2030 (UN, 2015). The goals are 'integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental' (UN, 2015:3). People-centred goals aim to eradicate poverty, hunger and illiteracy so that all humans can live a fulfilling life in a healthy and non-discriminating environment. Planet-centred goals deal with sustainable production and consumption practices to protect the planet from biodiversity loss and from degradation. Several goals address global warming and climate change. Prosperity-centred goals are designed to facilitate economic, social and technological development in harmony with nature so that all humans can flourish and enjoy fulfilling lives. Peace-centred goals aim to promote inclusive, just and peaceful societies and institutions for sustainable development. Partnership-centred goals focus on revitalised global collaboration to address the needs of all vulnerable and poor people.

The following quotes illustrate the systemic interconnectedness of global issues, challenges, risks and the development goals: 'Cursory inspection of the world suggests that it is a giant complex with dense connections between its parts' (Checkland, 1981:60). Laszlo (2009:24) states that 'there are multiple feedbacks and cross-impacts among the global trends'. 'Complex crises are often closely coupled to other problems' (Teige, Harman & Schwartz, 1977:230).

### **A Biomatrix systems perspective of unemployment**

The seven Biomatrix systems aspects (Dostal *et al.*, 2005:47-128) are now applied to unemployment in SA as the issue in focus. These aspects co-define the decision issue itself within the hierarchies and networks within which it exists. Unemployment is embedded in a network of other challenges and contextual variables that can be depicted as a causal loop diagram (CLD) or a qualitative (or quantitative) systems dynamics model. A CLD illustrates the connectivity between issues of concern and the contextual variables that interact with them. It also shows the positive and negative feedback loops with time delays among all the relevant variables.

The analysis below is not exhaustive and only serves to illustrate how a systems analysis reveals aspects about a contextualised decision issue that are not observed when a PESTLE or CLA lens is used. The seven Biomatrix systems aspects are now applied to the national labour market.

**Environmental aspect:** Although the labour market is embedded in the SA context it is also interconnected with the global context. The SA context is described in the NDP (NPC, 2012)

and by Plaut and Holden (2012), Roodt and Retief (2013), Basson and Du Toit (2017), and Jonas (2019). The challenges of unemployment, poverty, inequality, low economic growth, poor education outcomes, the legacies of apartheid and the history of Bantu education are closely interlinked. Job seekers in SA have to compete within a very competitive and constantly changing global labour market that offers smart technology and capital as well as productive, educated and skilled human talent. SA, as the internal environment for this case, can be described as a resource rich, middle-income country, a young constitutional democracy and a market economy that grows at a very slow rate. A PESTLE perspective of this environment is provided by Roux and Haldenwang (2016) and Jonas (2019). It is of critical importance that job seekers meet the requirement of 'requisite variety' (Ashby, 1961) or 'required complexity' (Boisot & McKelvey, 2011:279) as suggested by the WEF (2016). Job seekers must be adequately equipped to participate in the job market segment in which they participate or compete. These 'adequacy' principles also demand that the SA labour market and its stakeholders should adapt to remain relevant in a competitive job market.

**Ethos aspect:** The ethos aspects (i.e., the cultures, the cohering values and guiding principles) that inform the labour market include the diverse and conflicting sets of ethos of organised labour, trade unions, employers, education and training institutions, government and labour brokers. In order to understand the labour market, the ethos of each stakeholder has to be understood. The ethos of the different stakeholders are normally reflected in statements of their strategies and visions and observed in their visible behaviours, for example during wage negotiations, legal and illegal strikes and protest marches. Even the NDP is informed by an ethos that values human talent development, human dignity, integrity and a prosperous SA. However, politicking and a corrupted ethos of government have contributed significantly to the 'collapse of our schooling system' (Jonas, 2019:84), a general deterioration of the economy and unemployment.

The history and memory of a complex social system is captured at the micro level in the form of the experiences, opinions and worldviews of individuals involved. These aspects co-define the ethos of the system. At the macro level it is captured in the culture, rituals and value systems of the collective (Richardson *et al.*, 2007:26). It is often argued that the ethos of the apartheid system informed the socio-economic system within which unemployment, inequality and poverty continues to exist in SA (NPC, 2012). The ethos of a system co-defines its aims.

**Aims aspect:** Different stakeholders have different aims and objectives. According to the NDP the education system has to produce skilled individuals that can participate in the process to eradicate poverty, reducing inequality, growing the economy, and cutting unemployment (NPC, 2012:296). The national Industrial Policy Action Plan (IPAP) also pursues these aims (DTI, 2018:6). Employers typically aim to maximise profits within the constraints set by legislation, and effective and ethical leadership and governance practices (King, 2016). The aims of government (dominated by the governing ANC party) are to attain and retain power through labour policies that pacify its strategic alliance partners, i.e., the SA Communist Party and the trade unions in Cosatu (Plaut & Holden, 2012). The aims of the Freedom Charter (1955) continue to inform government's aims. The aims of the Department of Trade and Industry (DTI) are to create employment through 'radical economic transformation', the promotion of the industrial sector and financial support to black industrialists (DTI, 2018). The general aim of job seekers is to find a 'decent job' where they can earn an income.

**Process aspect:** Many processes and sub-processes influence, interact and moderate the processes of supply and demand for jobs and the dynamic interaction between the two. On the supply side, the education system employs education processes to equip people to enter the job market. Processes form value chains, e.g., early childhood development 'taps' with primary education, which taps with secondary education, which taps with tertiary education, which taps with the job market (Dostal *et al.*, 2005:76). There is a 'classic skills-mismatch problem between labour demand and labour supply, and between education and economic

growth' (Bhorat, Cassim & Tseng, 2016:312). Government's policy processes produce laws that govern numerous aspects of employment, e.g., the Basic Conditions of Employment Act (RSA, 1997a), the Employment Equity Act (RSA, 1998) and the National Minimum Wage Act (RSA, 2018a). Trade unions and bargaining councils mobilise their members' power to influence negotiations for better benefits and working conditions. The SA economy requires (on the demand side) skilled and unskilled labour in both the formal and informal segments thereof. The three spheres of government create the biggest demand for employment in SA. Economic growth, industrialisation, innovation and foreign direct investment tend to stimulate the demand for labour (DTI, 2018). Unemployment is the result of discrepancies between processes in the labour market system and is associated with poverty and inequality (NPC, 2012). Processes of population growth, urbanisation and immigration interact directly with the job market. Processes such as globalisation and evolution of 4IR demand appropriate responses from the labour market in SA. The net effect of all these variables is an oversupply of unskilled workers and a shortage of skilled and educated employees within a stagnant SA economy.

**Structure aspect:** Numerous temporal and spatial structures interact within the labour market. Typical structures include the demographic structures of the population and the labour force, the structure of the economy in terms of the primary, secondary and tertiary sectors, the structure of employment patterns, and structures of formal and informal economic sectors (DTI, 2018; Stats SA, 2021). Historic spatial development patterns and structures often create barriers to entry for job seekers. The way employer organisations and organised labour interact annually is structured according to temporal cycles and procedural structures. Both government and legislation are structured in terms of the Constitution. These structures change over time as 'the difference between process and structure is time' (Dostal *et al.*, 2005:82). The structure of the SA labour market favours 'those who are highly educated' as the 'unemployment measure is strongly associated with the educational attainments of individuals' (Bhorat, Cassim & Tseng, 2016:314). These authors conclude that the SA labour market is 'oversupplied with those that have relatively low levels of education' (p.314). It appears as if the rigid labour market structure in SA is ill-prepared to face the challenges of the future.

**Governance aspect:** At the highest level the Constitution (e.g., the Bill of Rights and Chapter 9 institutions) governs numerous aspects of the labour market. The labour market is specifically governed according to applicable legislation, mutual agreements among stakeholders, ethical leadership and effective processes at all organisational levels (King, 2016). Inspectors from the Department of Labour and labour organisations continuously monitor role players in the labour market. All entities involved in the labour market are governed in terms of the same Constitution and its laws. Governance bodies (e.g., for educational institutions) play a key strategic role in their organisations. Governance of all stakeholders is typically a mix of hierarchically structured self-governance and external governance. Corrupt governance aims to destroy systems (Pelletier, 2010). Poor governance at all hierarchical levels is blamed for the poor quality of school education. Unfortunately, neither government nor the voting public appear to learn from mistakes being made.

**Substance aspect:** Various kinds of resources influence the dynamics of the labour market directly and indirectly. An important resource in the labour market is the human capital and talent of job seekers. The combination of intellectual resources and intellectual property, innovation capacity and entrepreneurship, the availability of natural resources, the provision of infrastructure in the country, the supply of reliable volumes of energy, capital and investment funds are all resources that are systemically linked with aspects of the labour market (DTI, 2018). These resources are linked within the socio-economic networks and systems of the national and global economy. Entrepreneurs and investors mobilise these resources in an investor-friendly ecosystem to produce mutually beneficial outcomes for all stakeholders.

A Biomatrix systems perspective such as this one links the phenomenon of unemployment with numerous factors in the domains of time and space and also in the domain of concepts, worldviews, assumptions and beliefs (i.e., ethos). It shows that unemployment is entangled with other ‘messes’ or wicked problems such as corrupt government, inappropriate legislation and underperforming education systems. After many decades the impacts and feedback of historic events and decisions are catching up with society in the form of wicked issues that are now spiralling out of control.

### **Strengths and limitations of a systems analysis**

A systems lens reveals aspects of a decision issue that are often overlooked. The Biomatrix systems framework can be used to frame any decision issue within its context in relation with other variables that affect the issue in focus. This framework integrates aspects from the conceptual, spatial and temporal domains. It exposes positive and negative feedback loops that interact with the systems involved. A systems perspective enables learning. It accommodates an anticipatory capacity that can inform the formulation of mitigation, adaptation and self-organising strategies by the decision maker in time.

### **A complex adaptive systems perspective of contextual variables**

The epistemological notion of complexity permeates all dimensions and aspects of creation (Cilliers, 2010:83). Complexity is observed (by the conscious observer) in all the dimensions and aspects of the municipal context. The aim of this brief complexity perspective of aspects of the municipal context is to illustrate that a complexity perspective reveals patterns of change over time that none of the previous perspectives necessarily reveals. This perspective addresses the unique behaviours of complex adaptive systems (CAS) as reviewed in Section 3.2.5. At least one example of each behaviour type is mentioned below. The following examples relate to contextual variables or issues that affect most municipalities.

**Leverage and non-linearity:** The dramatic and catastrophic leverage effect of a single virus, the Covid-19 virus, is being experienced worldwide and locally in all domains of society. Since March 2020 the pervasive and devastating effects of the COVID-19 pandemic, a “black swan” event (Taleb, 2008) have been felt locally and globally (Western Cape Government, 2020b; World Bank, 2021). The Covid-19 pandemic is exposing the extreme vulnerability of the local community with regard to global threats and challenges (Sachs, Schmidt-Traub, Kroll, Lafortune, Fuller & Woelm, 2020). Sachs *et al.* (2020) describe the pandemic as ‘the worst public health and economic crisis in a century ... affecting all countries’ (p.vi). The pandemic caused massive job losses and amplified inequalities, including income inequalities. On the positive side a reduction in environmental impacts has been observed due to a reduction in economic activity. Sachs *et al.* (2020:1) state that ‘[T]he implications of the pandemic encompass public health, economics, social stability, politics, and geopolitics’.

**System dynamics:** System dynamics refers to causal processes within systems, processes that introduce change that propagate at different speeds through systems via positive and negative feedback loops. The announcement of an election date and the election results thereafter are other examples of ‘change events’ that activate political processes and dynamics. System dynamics are triggered by the appointment of new councillors or new officials in the municipal administration. The effects of climate change such as veld fires, droughts and rising sea levels initiate system dynamics. Political and social unrest also activate system dynamics. Incarceration of former president Jacob Zuma triggered large-scale vandalism, turmoil, murder and destruction in Kwa-Zulu Natal and Gauteng in July 2021 at local government level. This ‘change event’ triggered the deployment of the SA Army to restore order. Protests, murders and underperformance of the security services and intelligence units in these two provinces initiated numerous investigations and exposed weak links in the state security cluster (Cilliers, 2021).

**Self-organisation:** The Covid-19 pandemic has triggered self-organisation strategies and activities globally and locally at all levels of society and in all domains. Lockdown arrangements of all kinds and the implementation of various protocols to stop the spread of the virus are ways in which communities and individuals within the Hessequa area have self-organised to protect themselves. Officials and councillors of the municipality moved their offices to their homes and replaced physical eye-to-eye meetings with virtual meetings. Self-organisation due to the Covid-19 pandemic includes the reorganisation of health care systems, work processes, wholesale and retail activities, social interaction, global trade and religious activities.

**Adaptation:** To remain relevant with the advent of 4IR education systems job seekers in SA will have to adapt their education strategies. Municipalities will have to adapt their recruitment and training strategies to remain relevant. The skills and competencies required in a technologically advanced society as suggested by the WEF (2016) are different compared to those currently on offer in the SA labour market and in the Hessequa area (Bhorat *et al.*, 2016; Stats SA, 2020b; 2021). The IPCC (2013; 2018) and Stern (2006) recommend adaptation of current economic practices as a strategy to deal with climate change at a local level. Farmers may have to switch to crops that are more climate resistant, for example (Stern, 2006:404). Once adaptation occurs across generations at a systems level, the system has evolved (Prokopenko, 2006:2).

**Emergence:** The capacities of the Hessequa Municipality to formulate policies, to generate income and to deliver services are emergent abilities. The development of global ICT networks and the internet has facilitated and enabled the emergence of cyber criminality and international criminal networks. The 'hidden', 'black' or 'shadow economy' as observed in global organised criminal and terrorist networks, the internet and the 'fantasy economy' of international finance reflects the unwelcome, unwanted and repressed aspects of human consciousness that contribute to this state of affairs (Slaughter, 2010:61). Criminal minds are using new technology to commit new and novel kinds of crimes within the municipal context. Carbon trading and carbon taxes are examples of emerging phenomena as a result of global warming and climate change.

**Evolution and co-evolution:** Technological development and 4IR have stimulated the evolution of innovative education systems, governance models and health systems. Traditional face-to-face instruction in classrooms and distance education have been replaced by online education, virtual universities, Massive Open Online Courses (MOOCs) and e-learning made possible by ICT, machine learning, AI and big data (Qureshi, 2019). Technological innovations are supporting the evolution of network governance systems, 'e-democracy' and 'smart governance' systems (Liu & Yuan, 2015). Information technology is used to improve the quality, safety and efficiency of health care systems in the USA on a large scale (Patel, Reed & Grant, 2015).

**Learning:** The global scientific community was sensitised about the limits of the planet's carrying capacity and the environmental impacts by Meadows *et al.* (1972), Gore (2006), Slaughter (2010) and others. Since then, much has been learned about the interaction between the Anthropocene and planetary ecosystems (Stern, 2006; IPCC, 2013; 2018). Societies all over the world have been informed about adaptation and mitigation strategies based on this learning.

**Self-organised criticality and punctuated equilibrium:** Humanity has driven global ecosystems to a very critical point through its materialistic, self-centred and unsustainable behaviours. Meadows *et al.* (1972) warned about such a future scenario as 'a global catastrophe'. Martin (2006) refers to it as 'the singularity' and a 'perfect storm'. The climate crisis is 'a true planetary emergency' (Gore, 2006:10). Laszlo (2009; 2010) refers to this point as the 'a state of global emergency', a 'chaos point' and a 'tipping point'. Duvenhage (2020) also warns that SA has reached a 'tipping point'.

**Bifurcation:** Many authors agree that humanity and nature have reached a bifurcation point (IPCC, 2013; 2018). They also declare that all hope is not lost and that a fundamental change in behaviour can save the day. Slaughter (2010) for example, extends ‘the biggest wake-up call in history’ to call attention to this matter.

**Self-referentiality:** The political structures and the administration of a municipality are examples of self-referring systems. These structures continue to exist after municipal elections, even though all the councillors and officials might have been replaced after the election. Self-referentiality tends to maintain the way systems operate although the role players come and go. Fundamental change in a system only occurs once its ethos has changed.

**Dissipative structures:** Large cities are examples of dissipative structures that exchange matter, energy and information with their environments under conditions far from equilibrium. Once rapid urbanisation takes place, a city may reach a bifurcation point. It may enter a state of chaos if it cannot cope with the rate of urbanisation, or it can reorganise to reach higher levels of complexity so that it can cope with the impacts and demands of urbanisation. The global climate system is a dissipative structure at a bifurcation point. Unless the impact of human activity on the environment is addressed, the longer-term feedback effects of climate change may be catastrophic.

**Path-dependency:** Numerous aspects of the current SA society and economy reflect its path-dependency. The SA education system, labour market, spatial development structures, infrastructure development and social systems continue to reflect a historic background based on the apartheid paradigm and earlier discriminatory development strategies for different race groups. Spatial legacies and spatial planning from an earlier era (before 1994) continue to pose specific challenges to municipalities (COGTA, 2009a:23). These systems have a built-in momentum that tends to continue some of these historic trends.

**Phase changes/shifts:** The first democratic election introduced a phase change in SA politics and in society in general. The apartheid system was replaced by a constitutional democracy. Numerous fundamental changes in all spheres of government and in society took place in terms of subsequent legislation. Deployment of corrupt councillors and officials to many SA municipalities have caused internal phase changes from ‘good governance’ to corrupt governance (AG, 2020a).

During the first half of July 2021 political tensions and faction fights within the ANC reached a critical point and a phase change occurred almost overnight in Kwazulu-Natal and Gauteng. Factors that contributed to the chaos include poor governance and faction fights within the ANC and in an unstable society (Cilliers, 2021). Over large areas of these provinces violence and chaos erupted, causing billions of Rands of devastation and leaving more than 300 people dead (Mbanye, 2021).

## **A temporal perspective**

An awareness of time is very important when decisions are made about path-dependent CAS. This section emphasises the importance of an awareness of time for decision makers. The continuity of phenomena from past to present to the future are discussed with reference to cycles of technological innovations. It frames the current socio-economic-political reality of the Hessequa municipality (discussed above) against the background of the SA history. Lastly, a brief overview of the history of Hessequa municipality is provided.

A temporal perspective enhances decision making if the decision maker understands the following: Cognitive processes such as foresight, goal setting, possibility thinking, problem solving and decision making require an awareness of time and a future consciousness (Lombardo, 2006:42-43). Lombardo (2006:5-6) defines future consciousness as ‘the total integrative set of psychological abilities, processes, and experiences humans use in

understanding and dealing with the future.’ Future consciousness has to do with the human capacity to anticipate, to imagine, to set goals, and to plan projects in order to realise desired future goals. A consciousness of time that links the past, the present and the future should inform decisions about a CAS because these systems are path-dependent. In addition, all processes proceed along the unidirectional dimension of time.

### **Continuity of processes over time**

An awareness of time requires an understanding of the links between the past, present and the future. **The past:** Various authors have studied patterns of change in multiple dimensions over time (Linstone, 2002; Perez, 2002; Perez, 2009; Swilling & Annecke, 2012; Schwab, 2016). Technological change also follows patterns over time. These patterns take the form of ‘long waves’ (Linstone, 2002; Perez, 2002), ‘S-curves’ (Butler, 2016) and ‘singularities’ (Kurzweil, 2001; Martin, 2006). Linstone (2002) refers to five ‘long wave cycles’ of 50 to 60 years of technological innovations that have had significant developmental implications for humanity. Perez (2002; 2009) refers to five similar cycles of technological revolutions. First was the Industrial Revolution in Britain, starting in 1771. The second, starting in 1829, was the age of steam and railways, fuelled by coal. The third revolution started in 1875. This was the age of steel, electricity, heavy engineering and steam engines for ships. Fourth, starting in 1908, was the age of cheap oil, the internal combustion engine, the automobile, petrochemicals and home electrical appliances. Since 1971 the fifth revolution, the age of ICT, the internet, biotechnology and new materials has emerged. Using a different logic, Schwab (2016) describes 4IR as a similar wave of technological innovation. Each of these cycles of innovation continues to have a huge and visible impact on the communities of Hessequa Municipality.

Global climate change effects, global challenges and global trends (discussed above) also span the boundaries between past, present and future. Therefore, all these trends have to be monitored.

**The present:** Decision makers need an anticipatory capacity (in the present) to deal with the future (Rosen, 1991; Poli, 2010). Anticipation is about the aggregation of ideas and considerations that inform decisions that influence the future. Anticipatory leaders search for emerging issues, trends and trend breaks (i.e., discontinuities) of dynamic processes. They look for the seeds of change, tensions in relationships between important role players, and possible disruptive technologies (Inayatullah, 2004:7; Caillol, 2012). They also need the capacity to dream and to imagine ideal or visionary futures (Lombardo, 2006:42).

The anticipatory function of an organisation or CAS can use any of the above frameworks (i.e., a PESTLE, systems, CLA or complexity lens) to scan the contextual environment in order to gather relevant data and information for decision making. Although the above perspectives of Hessequa’s current context are not comprehensive they do indicate numerous issues of concern that decision makers will have to address in future.

**The future:** Forces that have shaped the past and the present remain valid for some time. ‘The core thesis is that the future is embedded in the past; it is the projection of the past through the present’ (Poli, 2010:769). The aim of futures studies and futures research is to co-create desired and preferred futures through anticipation and foresight (Voros, 2003; Inayatullah, 2004). Decision makers should be aware of the existence of potential, possible, probable, plausible, preferred and desired futures and the differences among them (Voros, 2003; Bishop & Hines, 2012). The future is not a given. An understanding of possible and plausible futures may inform decisions in the present to co-create a preferred future or a desired future. A future consciousness enables decision makers to exploit future opportunities and to avoid potential risks through their decisions in the present.

‘Only a very few people have a global perspective that extends far into the future’ (Meadows *et al.*, 1972:19; Linstone, 2002:334). Most people are concerned with the ‘here and now’ of



their existence. In contrast, approaches to address the global and strategic issues and risks require a long-term and global perspective. Politicians tend to focus only on issues within a five-year horizon.

### **A perspective of SA history**

A temporal perspective of the Hessequa municipal context is incomplete without reference to the South African history. A comprehensive overview of the documented history of South Africa (from a South African perspective) can be found in Muller (1984) and in Worden (2012). On the one side this history is characterised by the 'clash of civilisations' (Huntington, 1996), conflict, segregation, wars and civil wars, domination and exploitation by European powers, slavery, the effects of colonialism and apartheid, underdevelopment and poverty. On the other side this same history also tells the stories of hope, courage, perseverance, initiative, ambition, development, and the emergence of a nation that built a military power and an economy that would become the leaders on the African continent.

A salient feature of the South African history is the role of 'White supremacy in southern Africa' (Muller, 1979: 579; Worden, 2012:74). The white minority was superior in administration, technology and military power and was therefore able to maintain political control over the divided and illiterate non-white majority until the unstoppable dawn of the African national consciousness movement during the middle of the previous century. In his visionary address to the white Parliament of the Union of South Africa in Cape Town on 3 February 1960 Harold Macmillan remarked: 'The wind of change is blowing through the continent' (Eksteen, 1978: 102). Macmillan warned Parliament that the racial policies of the apartheid regime were neither tenable nor sustainable (Butler & Stockwell, 2013: 2).

After 1960 numerous national, continental and international events, trends and local scandals put enormous pressure on the South African government to transform itself (Muller, 1978: 508-549; Mandela, 1994). This transformation was carefully facilitated through the statesmanship of both Nelson Mandela and FW de Klerk (Mandela, 1994; Human & Rousseau, 2001). A key milestone event during this peaceful transformation process was the first national democratic election held on 27 and 28 April 1994 (Mandela, 1994). The ANC won the election. A 'New South Africa' was born as the result of a remarkable negotiated settlement (Worden, 2012: 156).

Important subsequent developments include the promulgation of the national Constitution and the Bill of Rights (RSA, 1996) and the White Paper on local government in 1998. This Constitution and the White Paper laid the foundation for the legislative framework for cooperative governance and local government which is discussed above. The White Paper served as a 'mini-Constitution' for local government.

### **Transformation of municipalities**

Initial conditions for local government in a democratic SA were not ideal in 1994. The apartheid government 'divided South Africa into separate and unequal spaces ... (with) marked differences in poverty, wealth and institutional capacity in South Africa's 283 municipalities' (COGTA, 2009b:8). During the apartheid era municipalities were structured in terms of a race-based dispensation and according to a system of segregation in terms of race (Bekink, 2006:46) that prescribed 'own management for own areas' (RSA, 1998). These arrangements favoured white communities and areas where most of the economic activity took place and resulted in unequal service delivery patterns. Infrastructure and provision of services in residential areas for non-white people were mostly neglected.

Protests against this distorted system gained momentum during the 1980s. Government initiatives to address the needs of black communities were insufficient. In 1990 a national reform process started. The Local Government Negotiating Forum negotiated the Local Government Transition Act 209 of 1993 which sketched a three-phased process for transformation of municipalities. This process made provision for local negotiating forums, the first local government elections of 1995/1996, the establishment of integrated municipalities, and the local government election of December 2000. The adoption of the 1996 Constitution introduced a new era for local government in SA (Bekink, 2006; SALGA, 2021).

The 1996 Constitution elevated local government to a sphere of government in its own right within a system of cooperative government. This allowed municipalities to govern the local government affairs of the communities within its jurisdiction. In 1998 the White Paper was published as 'a mini-Constitution for local government' (RSA, 1998). This document, based on the notion of developmental local government, introduced a process of radical transformation of local government. Local government had to eliminate disparities and disadvantages so that equal services are provided to all residents.

Because complex systems have a history, and because their past is co-responsible for their current behaviour (Cilliers, 1998:4), the historical context of the Hessequa Municipality as institution is provided next.

### **A short history of the Hessequa Municipality**

Before 1994 each of the bigger towns within the geographic area currently known as the Hessequa municipal area had its own local municipality under the jurisdiction of the Langeberg Divisional Council. The Local Government Transition Act of 1993 facilitated the amalgamation of all these small municipalities into the Langeberg Municipality. The local council that was elected during the 1995/1996 elections was still dominated by councillors representing the New National Party. At that stage the ANC was represented by a small minority within the council.

Well-educated ANC activists then started to mobilise voter support in the local communities, especially within the poorer coloured communities. As a result, the ANC won the 2006 elections. Nine out of the fifteen councillors now represented the ANC. During the 2006-2011 term the ANC governed the municipality well under the leadership of a very capable speaker and mayor. The name of the municipality was changed from Langeberg Municipality to Hessequa Municipality. Hessequa Municipality is a Category B municipality.

Until 2011 the municipality was governed by political parties with a majority representation in the council. The ANC ruled from 2006 to 2011. The last two terms (i.e., from 2011 to 2016, and from 2016 to 2021) were characterised by intervals of coalition politics. The dominant parties, the ANC and the DA, now required the support of a minority party as coalition partner to govern. During the 2011 elections the ANC and the DA were tied with an equal number of seats each in council. The ANC then entered an illegal coalition with one councillor from COPE and with another from the Civic organisation for a while. After court cases the DA ruled through a coalition arrangement. Since then, the DA has governed through alliances until the Slangrivier by-election when the DA won the ward from the ANC. Although the DA now had the majority vote it honoured its alliance with the FF+ until the 2021 municipal elections.

This balance in power between the ANC and the DA and the involvement of coalition partners introduced new 'system dynamics' into the municipality. These dynamics reflect a mature democracy in operation at a local level. The spatial development patterns, the socio-economic conditions of the Hessequa area and the worldviews of its communities still reflect images of the pre-1994 SA context. These patterns of path-dependency continue to present challenges to the municipality. 'In a way, the history of the organization is nothing else but the collection of all [its] decisions' (Richardson *et al.*, 2007:34).

## An integral perspective

Integral theory is a 'meta-paradigm' that integrates other existing paradigms that are mutually enriching to provide a coherent view of an issue (Wilber, 1996; Slaughter, 2001; Esbjörn-Hargens, 2009). Three aspects of the integral perspective or framework are used here to explain how all the above complementary perspectives relate to one another. These aspects are the quadrants, levels of development over time, and lines of developmental capacities and consciousness.

The four quadrants of the integral framework integrate four different, simultaneous, complementary, interconnected and irreducible dimensions of any reality. Each perspective is represented in a specific quadrant. (See Figure L-2 below). Levels of development are understood as concentric probability waves that expand outwards along the timeline in each quadrant. Various lines in each quadrant 'demonstrate sequential development with increasing levels of complexity or depth that transcend and include the previous level' (Esbjörn-Hargens, 2009:11). Developmental levels and lines in each quadrant are correlated with corresponding levels and lines in all the other quadrants.

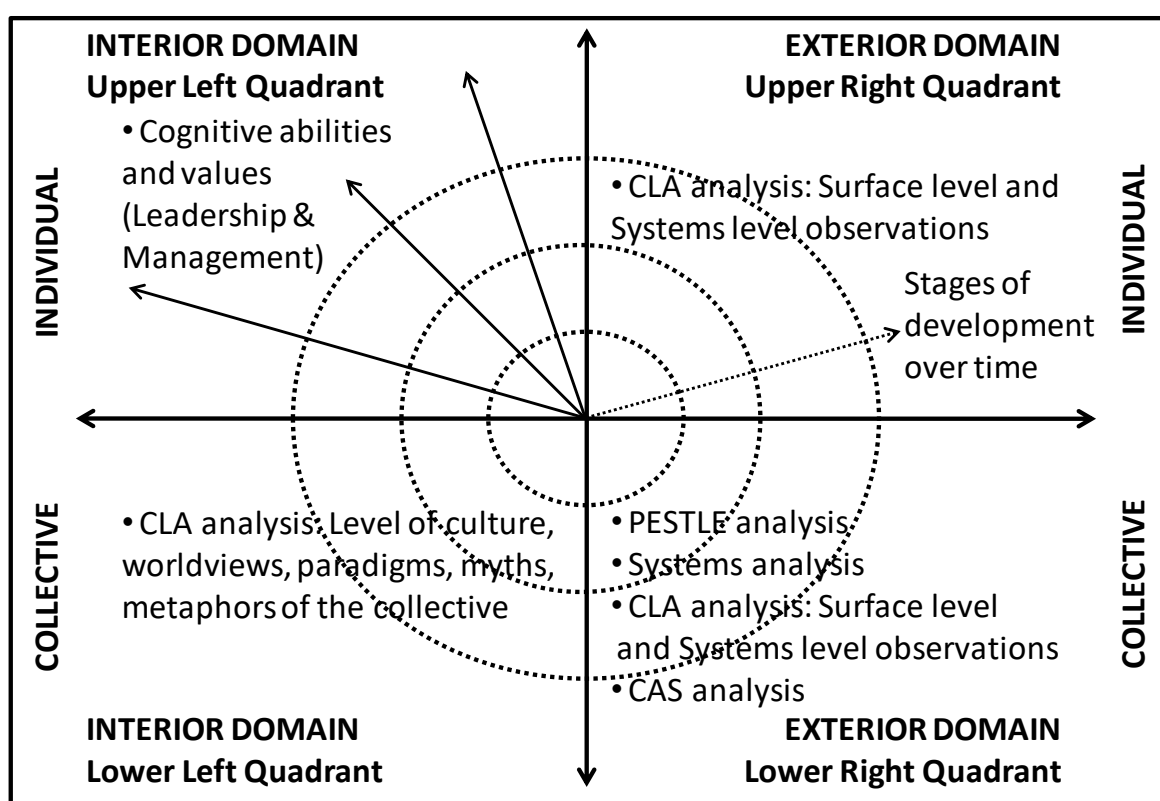
The integral framework considers both the visible 'exterior' reality as well as the invisible 'interior' reality of phenomena that relate to both the individual entity in focus, and the collective to which it belongs. It also considers the interrelationships between the four complementary realities or domains. The interior subjective and intentional domain of the individual is presented in the upper left quadrant. This quadrant represents the value systems, cognitive abilities and levels of mental development of the individual (i.e., leader, decision maker, actor, entity or unit of analysis). The objective behavioural domain of the individual in the upper right quadrant refers to the visible behaviours and habits of the individual that correspond with his or her interior domain in the upper left quadrant. In the lower right quadrant, the objective social world of the collective is represented. This is the physical and visible world of infrastructure, systems and spatial developments constructed by the collective (i.e., the communities involved) in terms of their cultural world as presented in the lower left quadrant. The latter quadrant refers to the worldviews, paradigms, myths, metaphors and viewpoints of the collective.

This framework links the mental models and cognitive capacities of the individual (upper left quadrant) with his or her visible behaviours (upper right quadrant). It also links the culture of the collective in which the individual operates (lower left quadrant) with the social systems created by the collective in terms of their common understanding of reality (lower right quadrant). The four quadrants are inseparable and mutually supportive. The quadrants co-produce one another. Integral theory suggests that the visible behaviours of individuals and the physical social world in which we live are co-created by the mind models of individual decision makers and actors, and by the multi-cultural world of paradigms and worldviews in which we live. Quite often the interior worlds of both the individual and the collective are excluded from a contextual analysis.

The integral framework integrates the above perspectives of the external context of the municipality as follows: The PESTLE analysis fits neatly into the lower right quadrant as it describes the different dimensions of the physical and systemic world that contains the Hessequa Municipality. The systems analysis of the context is also associated with the lower right quadrant. The worldviews and paradigms of society (represented in the lower left quadrant) inform and co-produce these physical systems. The analyses of the CLA at the surface level and the systems level belong to the lower right quadrant. CLA analysis at the levels of worldviews, paradigms, myths and metaphors belong to the interior, invisible world of the collective of the lower left quadrant. The CAS perspective of the context also belongs to the lower right quadrant.

Integral theory captures the dimension of time (and development) in terms of concentric waves that expand outwards with time. These circles may present the pre-industrial era, followed by the industrial era and then the post-industrial era, or the different cycles of technological innovation. Each circle links the scientific and social paradigms upon which the innovations are based (lower left) with corresponding physical systems, e.g., infrastructure, transport systems, communication systems and energy systems (lower right). The mental and cognitive powers of individual scientists and pioneers from various disciplines (upper left) informed the new and evolving paradigms and mindsets that supported cycles of innovation over time. New insights stimulated new types of behaviours among these scientists and pioneers (upper right).

The integral perspective reveals that most of the contextual analysis above is focused on the lower right quadrant, the domain of physical systems with some reference to the worldviews and paradigms of the collective in the lower left quadrant. The internal and external worlds of individuals are neglected in the analysis of the external context of the municipality. This shortcoming will be addressed to a very limited extent in the analysis of the internal context of the municipality below.



**Figure L-2: The integral framework (Esbjörn-Hargens, 2009)**

The powerful integral framework, based on integral theory, has many unique advantages. The four-quadrant meta-perspective allows us to see things together that have often been seen in isolation (Slaughter, 2001:416). This model integrates four qualitatively different but interrelated domains of the same reality that are often either not observed or considered in isolation. The framework exposes blind spots in the contextual analysis. It may be applied to any context, and it can be used at any scale (Esbjörn-Hargens, 2009:2). The beauty of the framework is that it accommodates and integrates four distinct perspectives on any unit of analysis at any level of development at any time. It reveals many more dimensions of our communities and our environments than any other individual framework.

## APPENDIX M: THE INTERNAL CONTEXT OF THE HESSEQUA MUNICIPALITY

The internal context of the Hessequa municipality as institution is defined as the unit of analysis in this section. It is the domain that is under the control and authority of the municipal council. More specifically, it includes the administration and the political structures of the municipality. This review of the internal context is primarily based on documentary data from the municipal web page (Hessequa Municipality, 2021a), web pages of other government institutions, and on observations and field notes. The seven aspects of the Biomatrix systems theory (Dostal *et al.*, 2005) are applied here to observe the internal domain of the municipality. The focus is placed on aspects related to municipal decision-making and associated implementation processes.

### The environmental aspect

The internal environment of the municipality is co-created by the political domain, other spheres of government, the administrative domain and the influence of applicable legislation. Several research findings regarding the municipality as an institution are made below, followed by findings regarding the administration and the political structures respectively.

**The institution:** The municipality can be described as an administrative bureaucracy governed by the politically inclined municipal council. This bureaucratic system is disciplined, professional, effective and respected. Both officials and councillors honour the boundaries of their legislated work domains. When councillors test and challenge these boundaries the speaker, municipal manager or the legal adviser intervenes. Interaction between the councillors and officials takes place through formal arrangements such as meetings. Councillors consult officials regarding technical matters. Interview data and observations confirm that both the officials and the councillors respect the laws that apply to municipal affairs.

Within the municipality power is used to influence decisions and to take decisions. The municipality derives its powers from statutes such as the Constitution and from its status as a legal person as defined in section 2 of the MSA. The municipality has fiscal powers (section 229 of the Constitution) to raise funds and other constitutional powers to perform its duties. These powers are concentrated in the municipal council as the primary structure and the sole authority of the organisation as explained in section 4 of the MSA. The municipal council is the primary decision maker of the organisation (Section 160(1) of the Constitution). It takes all the decisions except those which have been delegated (Section 11 and section 59 of the MSA).

Internally, at a high level, the power of the political structures confronts the power of the administration. Dedicated councillors and political parties use their political power to address the unlimited needs of their communities, often without realising what the legal conditions or the financial implications of their well-intended initiatives are. In such cases senior officials use their superior knowledge of legislation to settle disputes with the political structures. In some other cases the director of finances may decide what is affordable in terms of the budget and long-term financial plan. In many cases the municipal manager 'draws the line'.

At the level of the administration the directors use their personal and position power to compete with one another for access to limited budget funds and resources. In the highly contested political domain, the governing coalition use their majority vote to dominate, frustrate and outperform the opposition party. Members of individual parties vote unanimously on decision issues, almost without exception. Within a single political party, individuals may not agree on certain decision issues. However, in such cases the caucus of the party develops a consensus

position on controversial issues and all members are expected to support the subsequent decision. Party members who dare to vote against the consensus opinion are disciplined.

The speaker, executive mayor and the municipal manager occupy the most powerful positions in the municipality. As chairperson of the council the speaker has much position power. He convenes council meetings and presides at these meetings according to section 37 of the Structures Act. The speaker has a casting vote if there is an equality of votes that includes his vote. As a rule, the speaker votes on all decision issues during council meetings. He has the power to enforce the code of conduct for councillors in council and committee meetings. The speaker also leads the council in fulfilling its oversight responsibilities.

The executive mayor is the political leader of the municipality as well as its social and ceremonial head. Section 7(b) of the Structures Act states that the executive leadership of the municipality is vested in the executive mayor. Although the Hessequa municipal council is notionally the executive authority it has delegated all powers not specifically reserved to it to the executive mayor who, in turn shares this authority with the municipal manager. Delegated powers from the council allow both the mayor and the municipal manager to fulfil their executive functions conferred by law. It is the duty of the executive mayor to promote and defend the constitutional status, powers and functions of the municipality and to uphold the principles of cooperative government. The mayor plays a key role in the financial matters of the municipality and in the compilation of the IDP in terms of Chapter 7 of the MFMA and section 30 of the MSA respectively.

The municipal manager, as accounting officer and as head and leader of the administration is also in a very powerful position. The municipal manager of the Hessequa Municipality has the relevant skills and qualifications, and more than three decades of relevant experience to perform his duties as required by section 82 of the Structures Act. The powerful position of the municipal manager is co-defined by his responsibilities and accountabilities as specified in section 55 of the MSA and in Chapter 8 of the MFMA. A comprehensive delegation system is employed to support the municipal manager. The municipal manager is the chief adviser of the political structures and the administration of the municipality. He is the link between the municipality and other spheres of government, intergovernmental forums, the municipal managers' forums, professional bodies and the AG.

The efficiency of municipal decision making is enhanced by means of the delegation system that is described in sections 59 to 65 in the MSA. The municipal council is mandated to delegate various categories of decision issues to specified departments and positions within the political and administrative domains '... and not to persons or to incumbents'. The delegation system is supported by an appeal process and an oversight process. The council exercises oversight authority over the delegated activities of the executive mayor and the municipal manager. Passing of by-laws, approval of budgets, the imposition of rates, taxes, levies and duties, the raising of loans, and approval or amendment of the IDP may not be delegated by the council in terms of the Constitution and the MSA. The delegation register contains the details of these delegations in terms of more than thirty laws and regulations. All delegated authority is subject to the council's policies and are exercised in 'a spirit of utmost good faith'. In cases when no authority is delegated by the council, the executive mayor is regarded as having authority to exercise such executive power. The delegation register delegates authority to the municipal manager and to each directorate and official in the municipality to deal with issues within their respective specialist areas. Delegations are reviewed when a new council is elected.

The delegation system is effective in streamlining decision making but fails to eliminate 'decision making in departmental silos'. The delegation system authorises the manager of the SC department to implement decisions of the council and decisions of the various departments.

The director of the planning department is authorised to address issues that include changes in land use, spatial planning and building plans.

**The administration:** Hessequa Municipality is privileged to have a very experienced and loyal senior management team and an efficient administration under the leadership of the very capable municipal manager. The municipal manager and the five directors are very experienced and properly qualified for their assignments. In August 2021 these six officials had a total of 133 years of experience within local government, of which 119 years had been spent within Hessequa Municipality. These individuals possess position power and personal power based on their appointments, qualifications, education, experience, reputation and performance records. The directors have the highest regard for the expertise of the municipal manager. The director of the financial department, with more than 30 years' experience of municipal financial matters, and a reputation of six consecutive clean audits, also occupies a very powerful position. She uses this power very effectively to manage municipal financial matters within the restrictions and constraints of the MFMA, the approved long-term financial plan and the budget.

**The political domain:** The political domain is occupied by the political parties and their caucuses, the municipal council chaired by the speaker, the executive mayoral committee chaired by the executive mayor, five portfolio committees chaired by the members of the executive mayoral committee, nine ward committees chaired by the ward councillors, and individual councillors.

Seventeen councillors are active in the political arena. The majority of nine DA councillors maintain their former and formal coalition relationship with the single FF+ councillor since the DA gained one ward from the ANC in a recent by-election. The ANC is presented by seven councillors. Before the by-election the DA-FF+-coalition had a one vote majority. Council meetings are conducted in good spirit and are minuted in Afrikaans and English.

### **The ethos aspect**

Ethos refers to the worldviews, theories and models, the values and beliefs, the guiding principles, culture and symbols that inform the municipality in its entirety. Ethos co-defines all current and future aspects of the municipality. The authenticity, credibility and moral power of an organisation is reflected in the way its behaviours reflect its ethos (Dostal *et al.*, 2005:231). Reference is made here to the dimensions of ethos in a municipal context without necessarily examining the specific details of each dimension.

**Worldviews:** Decision makers have to consider and reconcile all the diverse worldviews of councillors from different political affiliations, members of different races and sex and language groups, the officials, and the communities. Worldviews of people at different education and developmental levels (Beck & Cowan, 2006) and stages of ego development (Loevinger, 1976; Cook-Greuter, 2013) have to be considered. The worldviews of the political parties co-define their behaviours, objectives and strategies.

**Theories and models:** The administration of the municipality is best described by bureaucratic governance theory. Aspects of New Public Management are reflected in performance measurement systems such as KPIs, SDBIP, audit and governance processes. Aspects of a learning organisation are reflected in succession planning initiatives, on-the-job training and workshops where learning takes place.

Different decision-making theories apply. A political model of decision making describes decision making within the municipal structures quite accurately. (See Section 4.4.4.) The IDP reflects aspects of Etzioni's mixed-scanning theory. It contains the basic strategies of the governing political party that set the fundamental 'higher order' direction as well as the supporting incremental 'lower order' decisions associated with the implementation of the

fundamental direction. The entire budget process can be described as an incremental decision-making process with small adjustments to historic budgeting patterns. Caucuses of the political parties regularly apply uncritical group think decision-making processes. Councillors are not allowed to vote independently against their caucuses. The head of the SC department uses intuitive decision making daily based on her experience and knowledge. She often uses rational decision-making processes within the boundaries of reason, legislation, budgets and policies. Most of the decision-making activities within the municipality can be aptly described by process models of decision making. Checkland's soft systems model was used in July 2019 to establish a holistic and sustainable energy plan for the next 30 years for the Hessequa municipality.

Different leadership theories apply to different leaders in the municipality. Interviewees describe leaders in terms of the traits and characteristics of the individual person, i.e., in terms of the 'great man theory'. The municipal manager is respected for high levels of emotional intelligence, lots of experience and knowledge. The emotional intelligence of individual councillors varies between very low and very high. The financial director tends to employ an autocratic leadership style within her domain when the constraints of the budget or the requirements of the MFMA are compromised. Most interviewees adopt a situational or a contingency leadership style depending on the situation they deal with. There is much potential for the development of charismatic and transformational leadership as well as complexity leadership. Toxic leadership will not be tolerated within the municipality at all.

**Metaphors:** The 'machine' metaphor applies to the municipal bureaucracy. The mayor uses the metaphor of 'a bicycle wheel with many spokes' to describe the municipality and says: 'When one spoke of the wheel gets lost or breaks the wheel will not function. For me it is important that everyone must do his share to take the municipality forward.' A councillor discussed the virtue of discipline when she remarked: 'I stay in my lane as I should. When a head of a department leaves his lane, he or she must bear with the consequences.' A director commented on the political situation in the municipality and noted: 'Our new mayor wants to build bridges between the opposition party and the governing party. I think he does it very well. There is really a situation of holding out a hand that says, let's walk the road together.' The director of corporate services uses the metaphor of 'Sherpas that support the climbers to plant the banner on Mount Everest' to explain how the administration supports the council through trust relationships. All these metaphors reflect the mental models that make Hessequa municipality a top performer.

**Values:** The values of the municipality must reflect the values of government captured in the Constitution, the MFMA and section 51 of the MSA. The Bill of Rights (Chapter 2 of the Constitution) 'affirms the democratic values of human dignity, equality and freedom'. Section 195 of the Constitution prescribes the developmental and democratic values and principles upon which public administration must be based. Codes of conduct for councillors and for municipal staff members appear as Schedule 1 and Schedule 2 respectively in the MSA. Guiding principles of the Hessequa municipality stated in the current IDP for 2017 to 2022 are honesty, responsiveness, a culture of service delivery, safety of communities, development of opportunities, and the redress of past inequalities.

**Beliefs:** It is stated in the IDP that the municipality should plan 'for a longer term and not only for the five-year term of office of Council'.

**Ethics policy:** The Code of Conduct of Officials, the Whistle Blower Policy, the Local Governance Service Charter and the Anti-corruption Policy of the municipality constitute the equivalent of an ethics policy.

**Culture:** The councillors and officials of the municipality always address one another very professionally inside and outside meetings. When councillors challenge one another in council



meetings the interaction is intense and sometimes fierce but mediated and controlled effectively by the speaker. Councillors respect the position of the speaker.

**Culture of learning:** A learning culture is established within the municipality in different ways. On-the-job training, numerous succession planning initiatives and the creation of knowledge sharing opportunities that precede decision making attest to a culture of learning.

**Symbols:** The seating arrangements in the municipal board room symbolise the positions of power of the speaker, mayor, municipal manager (and legal officer). These senior individuals are seated next to each other at a higher level than the rest of the attendees on a small stage. Attendees look up to these positions. The ruling party and coalition member are seated at the right-hand side of the leaders and the opposition party at their lefthand side at floor level. A long table arrangement separates the parties. The spacious and very neat offices of the municipal manager, the mayor and the speaker correspond with their positions.

### **The aims aspect**

The general aims, objectives and focus areas of the municipality are defined in the Constitution (in sections 152 and 153 and in Schedule 4B and Schedule 5B) and in section 19 of the Structures Act. Strategic objectives of the municipality are derived from the objectives of the NDP (NPC, 2012), the goals and priority areas stated in the State of the Nation Address (SONA, 2019), priorities stated in the strategic plan of the Western Cape Government (2020d), and the strategies of the Garden Route District Municipality (2021). The specific aims of the IDP are aligned with the overall aim of 'developmental local government'. 'Developmental local government is local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives' (RSA, 1998).

The vision of the Hessequa municipality stated in the IDP is to be 'a caring, serving and growing Hessequa' based on the pillars of social well-being, economic viability and environmental integrity (Hessequa municipality, 2021a). Five strategic objectives guide service delivery and operations, namely good governance and public participation, cost-effective service delivery, good financial management, social and economic development, and sustainable environmental management (Hessequa municipality, 2021a). These objectives inform the measurable targets, called predetermined objectives (PDOs) for each directorate as stated in the SDBIP (Hessequa municipality, 2021a).

### **The process aspect**

Three kinds of processes take place within the municipality (Dostal *et al.*, 2005:282-287). Outward-directed processes are focused on service delivery to communities. Inward-directed processes are dedicated to mobilising the resources required by the municipality to serve communities. Self-directed processes serve to balance specific processes within the institution.

**Outward-directed processes:** Outward-directed processes are core business processes that define the purpose of the municipality. These processes are implemented to meet the constitutional objectives of local government. The local municipality provides democratic and accountable government to all its communities. A range of products and services are delivered. This includes the supply of electricity, fresh water, sanitation and sewerage services, waste removal and treatment, social development programmes, development planning, fire and emergency services. During the Covid-19 pandemic food parcels were delivered to households in need.

**Inward-directed processes:** Inward-directed business support processes, or specialised line functions are employed to support the outward-directed processes. Municipal processes

belonging to this category of processes are found in each directorate. Within the directorate for corporate management the human resource management processes, ICT support services, legal services and property administration constitute inward-directed processes. Town planning and building control within the directorate for development planning are inward-directed processes. Business support services within the directorate for financial services include the processes of revenue collection, expenditure control, and the various SC processes. The SC department execute decisions of the municipal council according to relevant legislation and policies. Inward-directed processes within the directorate for technical services include the planning, installation, repair, maintenance and management of technical infrastructure employed for service delivery. The administrative processes of the directorate for community services enable the outward-directed processes of the provision of housing, community safety and social development.

**Self-directed processes:** Self-directed processes, or organisation support processes are concerned with maintaining the municipality as an entity. Certain administrative, human resource management and financial service processes ensure the effective and efficient functioning of the municipality as a whole. These self-directed processes allocate and coordinate resources to both the outward-directed and the inward-directed processes in a balanced and sustainable manner. Planning processes (e.g., compilation of the IDP), the annual budget process, audit functions, performance management processes as well as governance processes are self-directed processes. Many of the decision-making processes of the municipal council are self-directed. Strategic planning processes, decision-making processes, the delegation process, policy formulation processes and oversight processes are all self-directed in nature. These processes address the efficiency and effectiveness of the entire organisation in the short, medium and longer term.

### **The structure aspect**

'Public organizations are often embedded in larger governmental structures' (Rainey, 2009:89). Hessequa municipality is embedded in the Garden Route District Municipality which is embedded in the structures of the Western Cape Government. The latter is embedded in national governance structures. Nested within these structures are the administrative, political and related structures of the Hessequa municipality. The council of the municipality is also a member of organised local government (RSA, 1997b). The structures of the municipality are co-defined by the Constitution, the Structures Act, the MSA and the MFMA.

The Municipal Structures Act 117 of 1998 defines in detail the nature and functions of the structures and key functionaries within the municipality. In accordance with Section 53 of the MSA the Hessequa Municipality has documented the specific roles and areas of responsibility of each political structure and political office bearer and the role of the municipal manager in their 'article 53 document' (Hessequa Municipality, 2021a). This document defines the power structures within the municipality in terms of all the relevant laws.

Power structures within the municipality co-define the context for municipal decision making. Legislation makes a clear distinction between the legislative and executive powers of the council, and the delegated administrative powers of the administration. This principle of the separation of powers is designed to promote good governance. Hessequa's executive mayor has a delegated responsibility for providing the municipality with political leadership, proposing of policies and for overseeing that the municipal manager and the administration implement the policies (National Treasury, 2006:19-20). The council is accountable for policy formulation and approval, and the administration is accountable to the council via the municipal manager for policy implementation. Officials have delegated responsibility for policy implementation. The officials also provide the political structures with advice on technical matters.

A municipal council must establish and organise the municipal administration according to Chapter 7 of the MSA. The current council appointed the municipal manager and the five directors that are accountable to the municipal manager just after their election (in 2016). These officials established an administration to perform delegated functions.

**Administrative structure:** The administration is structured as a typical bureaucracy with seven organisational levels under the very capable leadership of the municipal manager. Leadership and power is situated and concentrated at the top of the pyramid. The municipal manager is accountable for management of the administration. He is supported by five experienced and competent directors representing and leading the directorates of financial services, corporate management, development planning, community services and technical services. Directors are supported by experienced middle management and a stable work force with a turnover rate of less than seven per cent per year. The workforce of the municipality totals 580 employees in August 2021.

**Political structures:** The internal political structures include the municipal council, the executive mayoral committee, portfolio committees and ward committees as defined in the Structures Act. These structures are entangled with the provincial and national political structures and with the registered voters. The municipal council is at the core of the internal political structures. The current council was elected during the 2016 local elections and consists of seventeen councillors. Nine of the councillors represent wards and eight councillors act as proportional councillors. Three political parties occupy the political domain, namely the ruling DA party with nine councillors, the ANC as the opposition party with seven councillors and the FF+ with one representative in coalition with the DA. The council has delegated executive authority to the executive mayor, the mayoral committee and other units within the municipality to address issues as defined in the delegation register. Ward committees have no statutory decision-making powers. They advise ward councillors about ward issues and participate in communication processes. Section 72 of the Structures Act states that the object of these committees is to enhance participatory democracy in local government.

**Decision-making structures:** Municipal decision making is structured in terms of the constitutional and legislative frameworks that apply. Section 11 of the MSA describes how a municipality must exercise its legislative and executive powers. Section 59 of the MSA instructs a municipality 'to develop a system of delegation that will maximise administrative and operational efficiency and provide for adequate checks and balances'. The council of the Hessequa Municipality has delegated executive (decision-making) powers to its executive mayor as defined in the delegation register. Additional functions and powers are assigned to the executive mayor in terms of section 56 of the Structures Act. Sections 79 and 80 of the Structures Act allow a municipality to appoint committees to assist the executive committee or executive mayor in their duties. Five such committees, known as portfolio committees, serve the five administrative departments of Hessequa Municipality. These committees do not have delegated powers, only advisory powers. Each portfolio committee is chaired by a member of the executive mayoral committee in Hessequa. Each portfolio committee meeting is also attended by an assigned councillor from the opposition party. Section 80(3) of the Structures Act allows the executive mayor to delegate any of his powers and duties to these committees. Individual councillors have very limited power and may not interfere in the administration. Schedule 1 of the MSA states that councillors are elected to present their communities on municipal councils and to preside at ward meetings. Councillors are accountable to their communities for the equitable, sustainable and effective provision of services to their communities. The strength of councillors lies in their association with co-councillors. When they act collectively councillors have extensive powers, especially when decisions are taken based on majority votes.

**Delegation structures:** Several structures feature in the municipal decision-making processes. The municipal council is allowed to delegate its executive powers, but it is not

allowed to delegate any of its legislative powers listed in section 160(2) of the Constitution. Political structures, political office bearers, councillors, the municipal manager and officials derive their powers from council and also from implementation of legislation and by-laws. The general rule is that role players with delegated powers, i.e., delegated bodies, have to provide feedback to the delegating body which retains oversight of such delegations.

The delegation register structures decision-making powers and responsibilities within the municipality. Decision issues that can be framed and defined accurately are channelled to different entities with delegated authority to deal with these issues. The delegation register defines this delegation process. The directorate of development planning, for example, has delegated authority to make decisions on issues related to land use, spatial development, infrastructure development and new buildings. The SC department has delegated powers to implement decisions of the council according to the policies and laws that apply.

A sensitive observer may observe racial and gender structures in the internal environment.

**Temporal structures:** Numerous very important temporal structures are captured in the calendar of the municipality. This calendar reflects regular and cyclical patterns of events and milestones with different frequencies and interdependencies along the dimension of time. Every council meeting is preceded by ward committee meetings, followed by portfolio committee meetings, followed by caucus meetings of the political parties, followed by a meeting of the executive mayoral committee. This cycle is repeated once a month. The frequency of cycles differs. A new council is elected every five years. A 'rolling' three year budget is compiled annually. The annual report, oversight report and the report of the AG are published annually. The mayor and the speaker meet weekly on a Monday morning to discuss issues of importance. All these activities have a specific temporal structure.

**ICT structures:** Councillors and officials in the administration employ and use sophisticated ICT systems and networks. Councillors and directors are equipped with laptops and have access to various communication networks. During the Covid-19 pandemic all council meetings have been conducted virtually. Officials continued to work from their homes and operations of the council and administration continued smoothly during the pandemic. All documentation that is processed by the municipality is stored on a secure electronic database called Collaborator. All directors and councillors have access to this system.

**Networks:** Officials and councillors are connected through virtual networks. They consult these networks for advice and guidance on municipal matters. Councillors and officials are all connected through the internet, meetings and other formal and informal interactions.

The total of all the above integrated structures represents the organisational structure of the municipality. Each of the seven Biomatrix aspects is structured, and each Biomatrix aspect is holographically contained in all the other aspects. The net result is that the municipality as an organisation is a complex dynamic system consisting of multidimensional interwoven structures.

### **The resource aspect**

The King IV report on corporate governance for SA (King, 2016:10) refers to 'six capitals'. 'Six capitals' refers to six resources, i.e., human, manufactured, intellectual, financial, social and relationship, and natural capital or resources. Within the municipal context the human capital includes the knowledge, skills, experience and expertise of councillors, the officials and the municipal work force as well as the 'grey power' of knowledgeable people in its communities. Manufactured capital includes the physical infrastructure that is employed for service delivery and the accommodation of those involved in local governance. Financial capital includes the funds collected through taxes, rates, levies, fines, grants, loans and allocations from other spheres of government. The intellectual resources of the municipality include the intellectual

capital contained in policies, administrative and business support systems, the knowledge of councillors, employees and individuals in the networks of the municipality. Social and relationship capital refers to the value of relations between the municipality and its community members, the private sector, investors, other spheres of government, government institutions, members of networked communities, academic and research institutions. Natural resources include weather and climate systems, clean air, natural beauty, fresh water, wetlands, mountains, the ocean and coastal region, solar radiation, biomass, wind, land and different biospheres.

In terms of its mandate the municipality has access to all these resources within its jurisdiction. Reference is made to all these important resources in the IDP and the annual budget.

### **The governance aspect**

Municipal governance takes place in terms of the Constitution, relevant legislation and the King IV Report (King, 2016). The behaviour of councillors and officials are 'governed' by Schedule 1 and Schedule 2 in the MSA respectively. Two main governance structures are observed within the municipality, one serving the municipal council and the other serving the administration. The executive and legislative authority of the municipality and its decision-making authority are vested in the municipal council. The council is accountable for municipal governance. The Hessequa municipal council has delegated decision-making authority to the executive mayoral committee (EMC), chaired by the executive mayor. The EMC consists of the DA councillors who chair the five portfolio committees from the various directorates, the executive mayor and deputy mayor. The speaker is not part of the EMC. Municipal ward committees, chaired by the respective ward councillors, represent the interests of the wards. Legislation prescribes that every party with delegated powers must provide feedback to the delegating authority on their performance and progress with delegated duties. Delegating authorities throughout the bureaucratic hierarchy perform their oversight functions and they must report on such matters to higher levels. The executive mayor, for example, must report to the council on all decisions taken by him.

Various governance processes link the IDP and its strategic objectives with performance agreements of officials, the annual budget, the implementation of the IDP according to the service delivery and budget implementation plan (SDBIP), the flow of funds, and the performance management system. The executive mayor must review and evaluate the performance of the municipality in terms of implementation of the IDP, key performance indicators and the SDBIP. The governance functions of the executive mayor as stated in section 56 in the Structures Act are aimed at improving the economy, effectiveness and efficiency of the municipality. The executive mayor has to monitor the management of the administration and the provision of services in a sustainable, equitable manner. Municipal performance is also evaluated by the Auditor-General who publishes the results of the annual audit. Hessequa Municipality has received six consecutive clean and unqualified audit reports until 2021.

The municipal council has established the Municipal Public Accounts Committee (MPAC) in terms of sections 33 and 79 of the Structures Act to review various governance processes on behalf of the council. The Audit Committee of the council oversees the internal audit function of the municipality on behalf of the council. The 'Section 32 Committee' (established in terms of section 32 of the MFMA) investigates inappropriate expenditures on behalf of the council.

Six administrative governance structures serve the administration. The senior management committee, chaired by the municipal manager consists of the directors and oversees day-to-day operations. The ICT steering committee, the risk management committee, the disaster management committee, various SC management committees, and the planning tribunal are accountable for governance of processes within their respective domains. The municipal

manager is responsible for the compilation of the annual report of the municipality and the mayor tables this report in the council for consideration in terms of section 127 of the MFMA. In Hessequa Municipality the MPAC evaluates the annual report on behalf of the council in terms of the council's oversight responsibility. MPAC presents their findings in an oversight report which is tabled in the council. After adoption of the oversight report the municipal manager, in his capacity as accounting officer must publish the report as prescribed in section 21 of the MSA. The municipal manager also communicates with the AG and provincial government in this regard according to section 129 of the MFMA.

The favourable effects of good corporate governance of the municipality include an ethical culture, good performance, effective control and legitimacy (King, 2016:12). Hessequa Municipality has been a top performer among about 260 municipalities in SA for several years. It has received six consecutive clean and unqualified audits from the Auditor-General. A 'clean audit' refers to a financially unqualified audit opinion with no findings (AG, 2020a:192; AG, 2020b:6).

The AG identified factors that contribute to good municipal performance. These are administrative and political stability, the ability to attract and retain high-level staff to ensure continuity, and sound institutional knowledge. Stability in the positions of CFO and municipal manager is associated with good performance. Sound internal controls contribute to good performance. 'The single most important characteristic of a well-functioning, financially stable municipality is effective leadership willing and able to ensure proper administration and superintendence of the municipality's financial affairs' (AG, 2020b: 32). Such leadership should be 'based on a culture of honesty, ethical business practices and good governance' (AG, 2020a:197).

The following section provides another perspective of the municipal context. This time the environment is described in terms of a thematic analysis of empirical data. This description reflects the point of view of the interviewees. The Biosystems perspective (based on literature and documentation in the public domain) and the empirical perspective (based on the thematic analysis) are complementary. The former is a perspective from outside the municipality and the latter a perspective from inside of the municipality regarding the municipal context.

## APPENDIX N: SAMPLE OF COMPLEX DECISION ISSUES & CODING RESULTS

### LIST OF PURPOSIVELY SAMPLED COMPLEX DECISION ISSUES

1. Renting / Selling the Takkieskloof Holiday Resort. [Collab 1232884](#)
2. Provision of card machines for electronic payment of electricity in each town. [Collab 682248](#)
3. Decision about the establishment of a fire brigade for the Hessequa Municipality (HM). [Collab 869018 en 875750 en 888836 en 903040 en 977931 en 1071332 en 1139492](#)
4. A solar-powered reverse-osmosis water desalination plant for Witsand. [Collab 1077602](#)
5. The abalone farm near Gouritsmond. [Collab 1334949](#)
6. The by-pass road for Still Bay.
7. The harbour development in Stilbaai. [Collab 1405102 en 1322861 en 1315033](#)
8. The children's playground in Witsand: Metal or wood?
9. Making land available for a housing development near Le Fleur.
10. The control of cats and dogs in towns. [Collab 1393558](#)
11. A housing project for Melkhoutfontein. [Collab 832228 en 1401689](#)
12. Housing projects for Riversdale, Albertinia and Gouritsmond.
13. Sport stadiums for Melkhoutfontein and Slangrivier. [Collab 1402166 en 1414262](#)
14. Involvement of DA councillors in appointment processes of officials. [Collab 1250167](#)
15. Upgrading electric power lines to Still Bay, Melkhoutfontein and Jongensfontein. [Collab 1414262](#)
16. Legislation regarding representation of traditional leaders in councils. [Collab 1380030](#)
17. Recovering municipal debt from 100 small farmers from the Mossel Bay area.
18. Closing municipal solid waste dump sites. [Collab 1220992 en 1335814 en 1407826 en 1420893](#)
19. Making industrial sites available along the N2 national road for development.
20. The 'container' development at Julie se Baai in Still Bay. [Collab 1197767](#)
21. Zoning request for a mosque in Theronville for Muslims.

**Table N-1: Coding frame resulting from first-cycle open manual coding**

<b>CONTEXT:</b>	
CHALLENGES	Contextual challenges
CLA	Causal Layered Analysis themes
COMPLEXITY	Factors contributing to complexity
CULTURE	Cultural aspects
DOCUMENTS	Documents pertaining to context
ECONOMIC	Economic dimension
ENVIRONMENT	Environmental dimension
LEGISLATIVE	Legislative dimension
PESTEL	PESTEL
POLITICS	Political dimension
RESOURCES	Resources to inform DM in HM
SOCIAL	Social dimension
SYSTEMS VIEW	Systems aspects
TECHNOLOGICAL	Technological dimension
TEMPORAL	Temporal aspects
TRUST	Trust relations

<b>FRAMEWORK FOR DECISION MAKING:</b>	
CONTEXT	Context of the HM
COUNCIL	Council of the HM
CULTURE	Culture of the HM and communities
DECISION	Decision made by HM
DECISION MAKERS	Decision makers of the HM
DECISION PROCESS	Decision process of HM
DELEGATION REGISTER	Delegation register of the HM
DOCUMENTS	Documents relevant to framework for DM
FRAMING FRAMEWORKS	Frameworks to frame decision issues
INCENTIVES	Incentives of decision makers in HM
ISSUES FOR DECISION	Issues to be decided upon
OBJECTIVES FOR DM	Objectives for decision making in HM
PLANNING	Planning within HM
SUPPLY CHAIN	Supply chain of HM
TRIBUNAL - PLANNING	Spatial Planning Tribunal of HM
VALUES	Values of the HM and its communities



<b>DECISION PROCESSES:</b>	
AWARENESS	Becoming aware of a decision issue
ANALYSIS	Analysing a decision issue in context
ACTION	Taking action and implementing a decision
COMMUNITIES	Communities in Hessequa Municipality
CONSTRAINTS	Constraints on decision process
CONTINGENCIES	Contingent factors
DEFINITION OF DECISION	Definition of a decision
DELEGATIONS	Delegation process/register
DOCUMENTATION	Documents pertaining to decision process
DRIVERS	Drivers of decision processes
EXAMPLES OF DECISIONS	Typical decisions taken by HM
FEEDBACK	Feedback processes
IDP	Integrated Development Plan
INDIVIDUALS	Individuals involved in decision making
INFLUENCES	Factors influencing DM
ISSUES TO DECIDE	Issues for decision
ITEM WRITERS	Item writers writing items for council
LAWS	Laws of legislative framework
LEARNING	Learning process of HM
NETWORKS	Networks informing decision process
OBJECTIVES FOR DM	Objectives for decision process
POLICY	Policies informing decision process
POWER	Power influences upon decision process
PROCESS OF DECISION	Process of taking a decision
RESOURCES	Resources involved in decision process
SDP	Spatial Development Plan
TACTICS	Tactics to influence decision process
WORKSHOPS	Workshops informing decisions

<b>DECISION-MAKING ENTITY:</b>	
ANC - AFRICAN NATIONAL CONGRESS	ANC party aspects
CAPACITY	Capacity of individuals to take or inform decisions
CAUCUS	Caucuses of various parties
COMMUNITIES	Communities of the HM district
COMPETENCY	Competency of HM to take decisions
CORPORATE SERVICES	Corporate Services Directorate
COUNCIL	HM council
COUNCILLORS	Councillors of HM
DA - DEMOCRATIC ALLIANCE	DA Party
DEAL WITH UNCERTAINTY	Capacity to deal with uncertainty
DIRECTORS	Directors of the HM
DOCUMENTS	Documents pertaining to HM as entity
EXECUTIVE MAYORAL COMMITTEE	Mayco of HM
FEEDBACK SYSTEMS	Feedback mechanisms associated with HM decision making
FINANCIAL DEPARTMENT	Financial Department Directorate
GOVERNING PARTY	Governing party in HM
INFORMATION SOURCES	Sources of information that informs DM in HM
LEADERSHIP	Leadership roles of councillors and officials
LEARNING	Learning processes in HM
LEGISLATION	Legislation informing decision making processes
MAYOR	Mayor of HM
MUNICIPAL MANAGER	MM of HM
NATIONAL GOVT	South African National Government
NETWORKS	Networks informing DM in HM
OBJECTIVES	Objectives of DM in HM
OFFICIALS	Officials of the HM
OPPOSITION PARTY	Opposition party in HM
ORGANISATION THEORY	Organisation theory aspects
PLANNING DEPARTMENT	Planning Directorate of HM
POLICY	Policy of HM affecting DM
POLITICAL PARTIES	Political parties in HM
POLITICS	Political processes affecting DM in HM
PORTFOLIO COMMITTEES	Portfolio committees of HM
PROVINCIAL GOVT	Provincial government of the Western Cape
SOCIAL DEVELOPMENT	Social development directorate
SPEAKER	Speaker of the HM
SUPPLY CHAIN	Supply Chain of the HM
TECHNICAL DEPARTMENT	Technical Department Directorate of HM
VF - FREEDOM FRONT PLUS	VF Party
VOTERS	Voters of the HM
WARD COMMITTEES	Ward Committees in the HM
WORKSHOPS	Workshops informing DM in HM

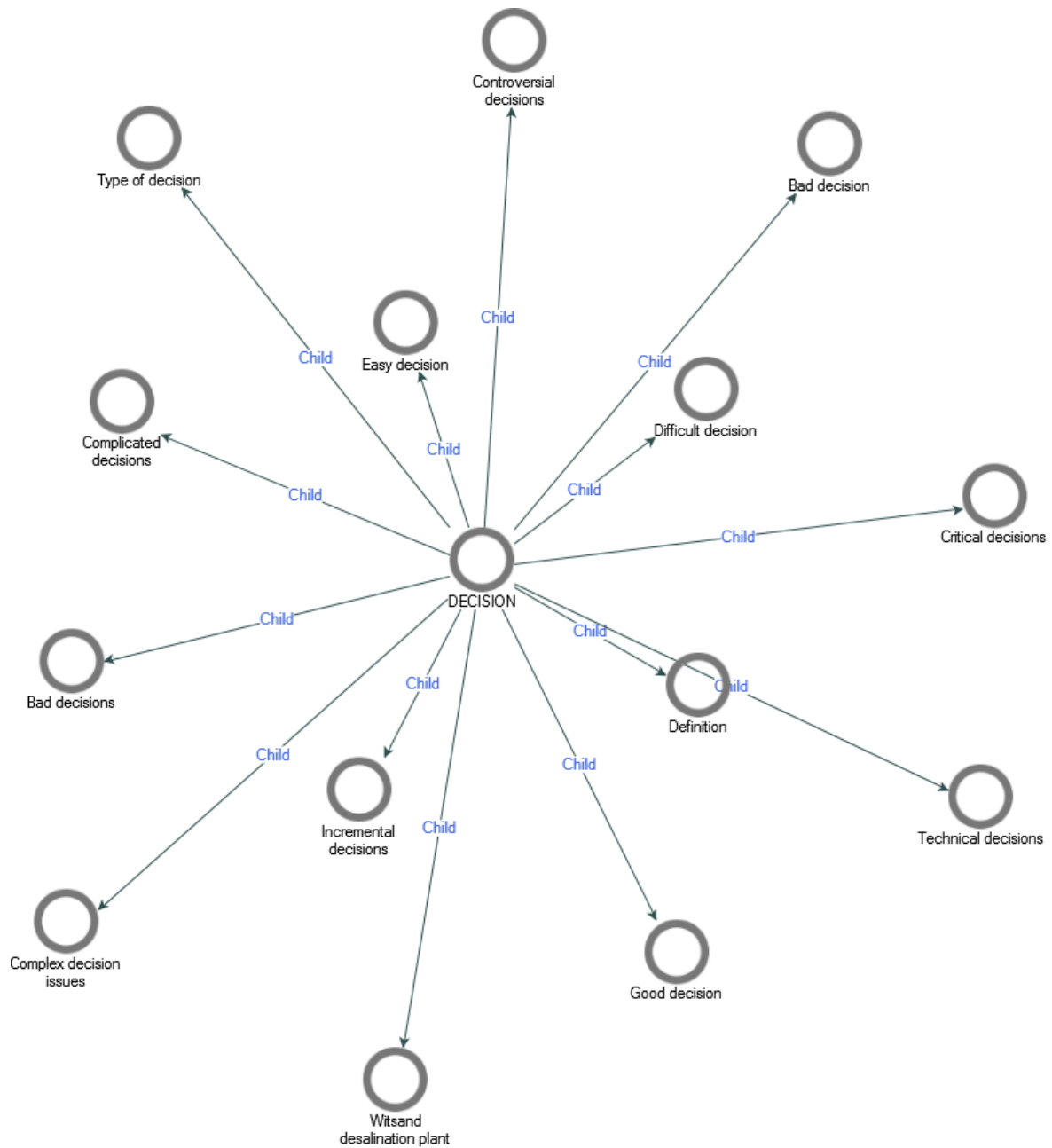
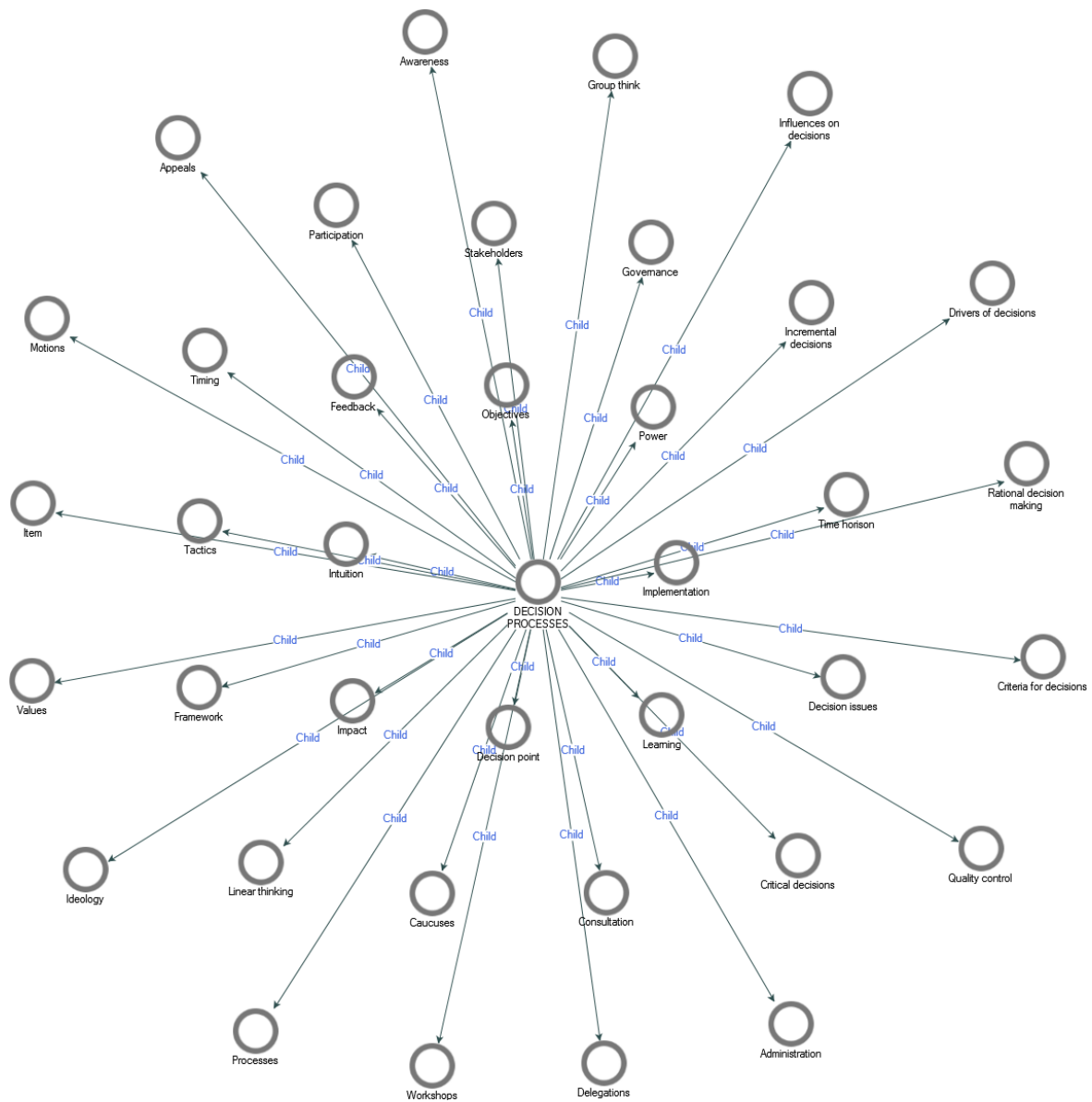


Figure N-1: Explore diagram of 'decision' as parent code with its child codes



**Figure N-2: Explore diagram of 'decision processes' (as parent code) with its child codes**



Figure N-3: Explore diagram of the municipal context as parent code and its child codes



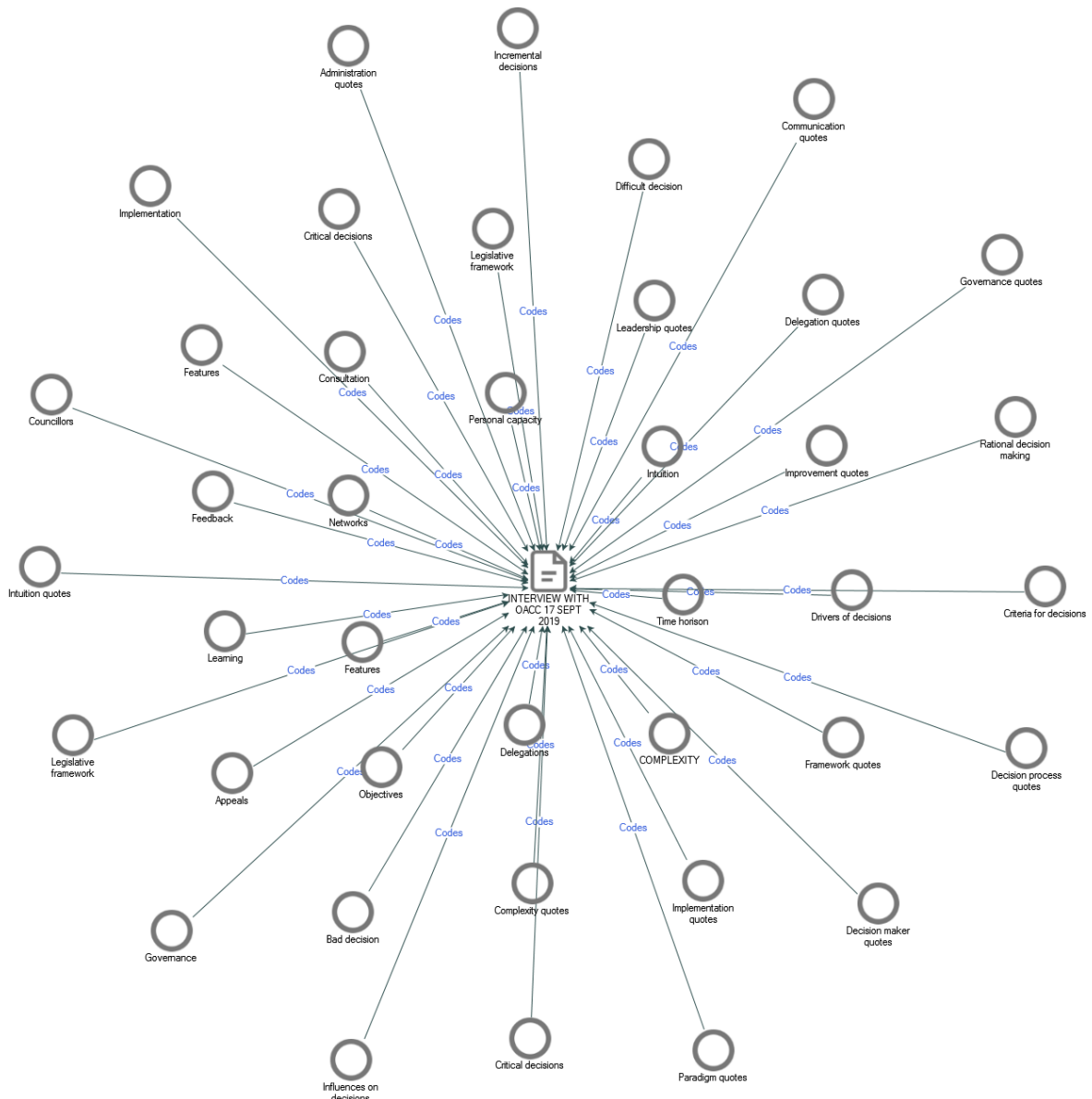
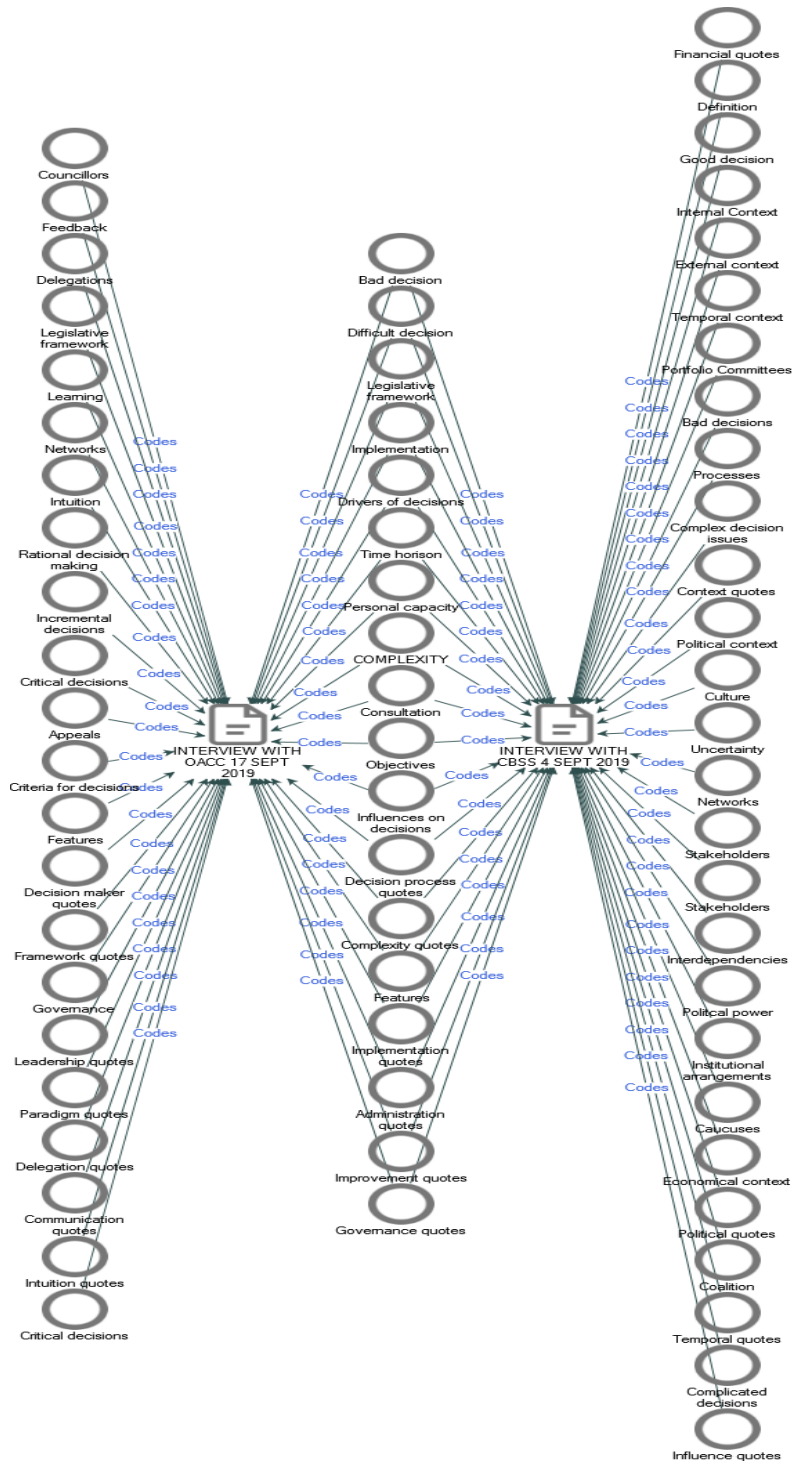
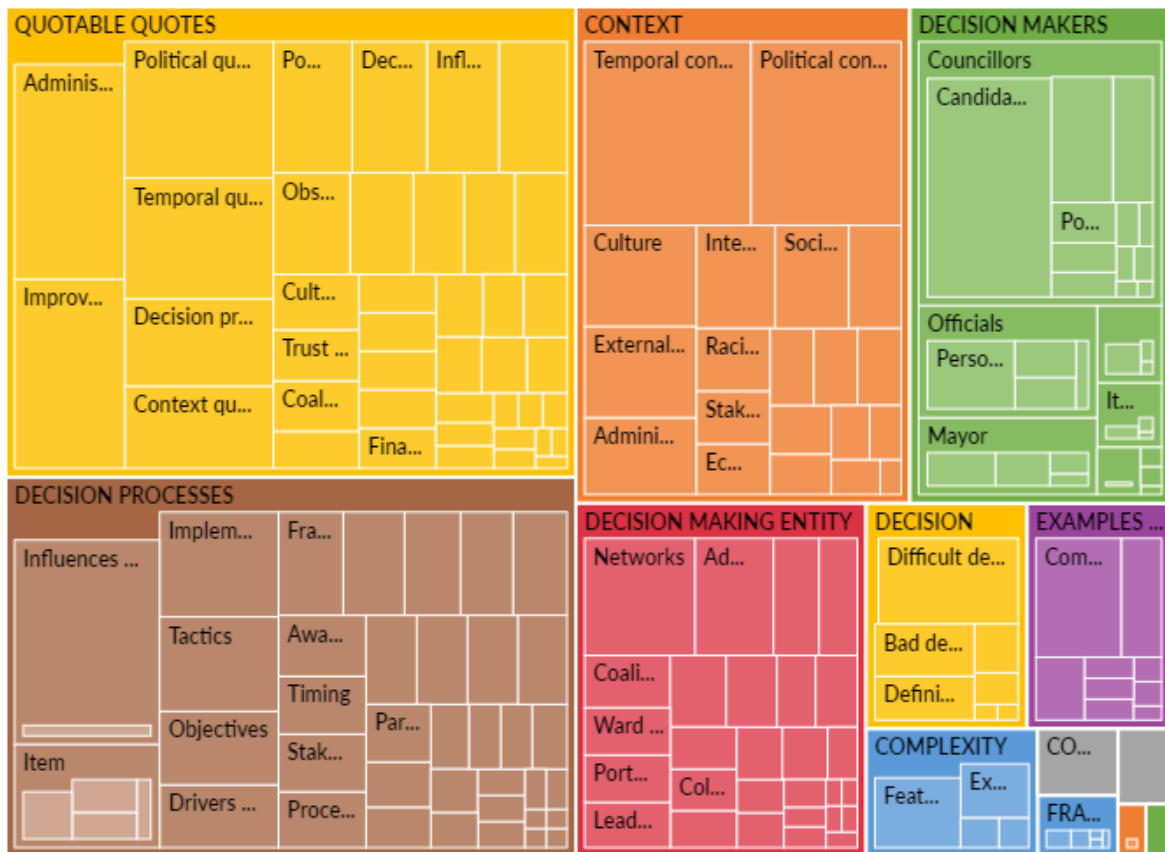


Figure N-5: Codes of an interview with an official

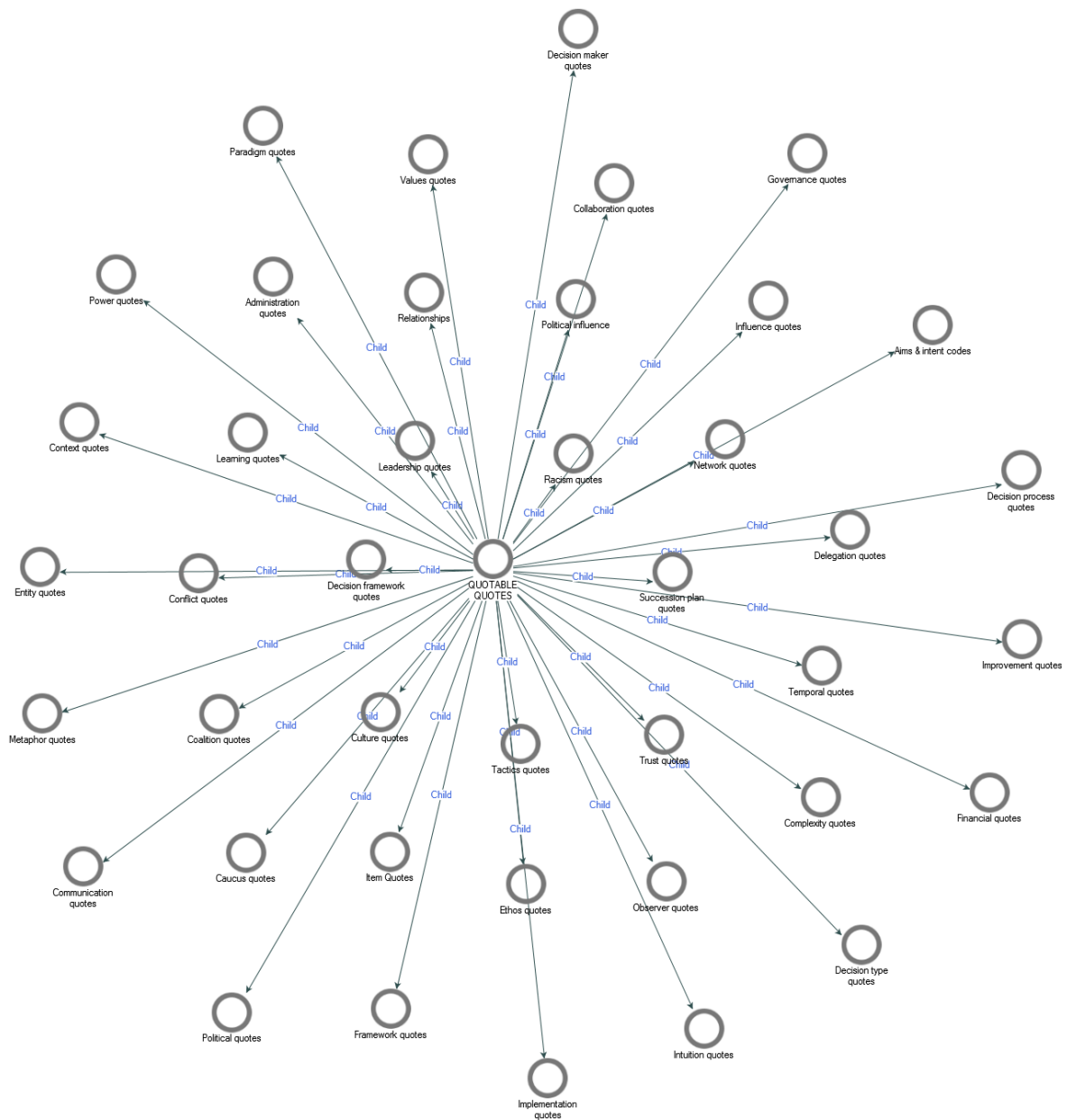


**Figure N-6: Comparison diagram – codes of interview data from an official and a councillor**





**Figure N-7: A hierarchy chart comparing the relative amount of coding of interviews with councillors**



**Figure N-8: Explore diagram of 'quotable quotes' as parent code with its 'child codes'**

## **APPENDIX O: LIST OF PURPOSIVELY SAMPLED DECISIONS TO INVESTIGATE**

1. Selling versus renting out Takkieskloof Holiday Resort.
2. Making card machines available for selling electricity in each town.
3. Decision to establish a fire brigade for Hessequa Municipality.
4. Building the solar-driven reverse-osmosis water desalination plant in Witsand.
5. The abalone farm near Gouritsmond.
6. The new by-pass road for Still Bay.
7. Harbour development in Still Bay.
8. Material selection for the design of the playground for children in Witsand.
9. Making land available for development near Le Fleur.
10. The control of cats and dogs in towns.
11. A housing project for Melkhoutfontein.
12. Housing projects for Riversdale, Albertinia and Gouritsmond.
13. Building sport stadiums in Melkhoutfontein and Slangrivier.
14. Participation of DA councillors in the appointment process of officials.
15. Upgrading electricity supply lines to Still Bay, Melkhoutfontein and Jongensfontein.
16. Decision about accommodating traditional leaders in the Council.
17. Decision to force 100 small farmers to pay for municipal services.
18. Closing and rehabilitating municipal dump sites.
19. Making industrial plots available for development along the N2 National Road.
20. The 'container' development at 'Julie se Baai' in Still Bay.
21. Land use zoning for a mosque in a township.

## APPENDIX P: PHASE 6 OF THE THEMATIC ANALYSIS OF CHAPTER 5

This appendix contains the details of Phase 6 of the thematic analysis of Chapter 5 about the nature of the decision-making processes of the municipality. An abductive research strategy informed the analysis. What follows are the details of the refined and final versions of the clearly defined main themes, themes, sub-themes and sub-sub-themes associated with the overarching theme *municipal decision making*. The three main themes are discussed in relation to the research question and within the context of the entire study. The main themes that are discussed next in terms of their associated themes and sub-themes are *definition of a decision*, *characteristics of a decision*, and *the formal decision-making process*.

### **Main theme: *Definition of a decision***

The main theme definition of a decision is based on four themes, namely *shaped by a formal decision process*, *in pursuit of municipal aims*, *a choice opportunity*, and *to implement or not to implement*.

This definition is linked to the other main theme *the formal decision-making process* which is discussed below. The link is: The formal decision-making process produces the decision. A more comprehensive definition of a decision may combine or merge the two main themes. However, for the sake of clarity the two main themes are addressed separately below.

### **Theme: *Shaped by a formal decision process***

The theme *shaped by a formal decision process* refers to the formal processes (preceding the choice event) during which decision issues are considered and possibly modified. A decision issue normally enters the decision process once it appears on the agenda of the ward committee. However, an issue may also land on the desk of an official or councillor who forwards the issue to the municipal manager. From the ward committee and the municipal manager, the formal process takes the decision issue to the respective caucuses and meetings of the portfolio committees, the EMC and the council unless the delegation system directs the issue to another delegated body. A councillor described this formal process as follows:

Initially a decision is identified by the community. Then the decision [issue] comes to the ward committee because the ward committee is the mouthpiece of the community. Then it goes from the ward committee as a recommendation to the portfolio committee, and from there it is referred to and taken up in the EMC, and the decision is taken there. At the council the decision is brought to execution.

During this process the influence of numerous stakeholders, decision makers and contingency factors may *shape*, deform, improve, modify or qualify the original decision issue. Normally both officials and councillors support decision issues that are aligned with municipal aims and objectives. In addition, officials typically emphasise the financial, legislative, physical, environmental and other (PESTLE) constraints or criteria that may apply to the issue in focus. Councillors tend to reframe decision issues to support their own political aims and to gain voter support. Often external stakeholders try to manipulate decision processes for their own questionable aims. (The formal decision process is discussed below in detail under the third main theme of *the formal decision-making process*.)

### **Theme: *In pursuit of municipal aims***

The second theme *in pursuit of municipal aims* talks about the diverse aims of stakeholders involved in the decision process. Any person in the administration, the political structures, the communities of the municipality or even an external person can initiate decision processes to

achieve their aims. Two broad sub-themes of aims are observed. These are *municipal aims* and *private aims*. The sub-theme *municipal aims* contains data about decision issues that are pursued in support of municipal aims and objectives that benefit the communities involved and that address risks. A councillor noted: 'The aims of both the ANC and the DA are to benefit the communities. But our *modus operandi* differ.' A former councillor said: 'It [A decision] is not for me to score points. The decision has to benefit the community in the longer term. It must manage risks. Things that you foresee that can go wrong you have to stop.'

The sub-theme *private aims* refers to decisions that are required primarily in support of the private aims of the initiator of the decision process, which is the person or entity that 'puts the issue on the municipal agenda'.

### **Theme: A choice opportunity**

The theme *a choice opportunity* refers to the last step in the formal decision process before commencement of implementation. The decision process normally concludes with the result of *a choice opportunity* which constitutes the output of this entire decision process. The product of this process is termed *a decision*. More detail about this step in the decision process is provided when the main theme *the formal decision-making process* is discussed.

### **Theme: To implement or not to implement**

The last theme, *to implement or not to implement*, addresses the implementation of decisions. Quite often the municipal decision process concludes with a decision that requires no further action from the municipality. This happens, for example when the council approves a private investment project, and the investor is the implementer. In other instances, the municipality implements the decision with municipal resources or through a contractor. A director explained the implementation step as follows:

It depends whether it is something that the municipality has to implement, or that a third party has to implement. We can take decisions with no involvement in execution. We only give a 'yes' or a 'no'. It depends on who the party is that implements. Our 'yes' or 'no' concludes our involvement.

A councillor gives the example of contractors that implement projects on behalf of the municipality: 'The municipality must appoint consulting engineers for the implementation of municipal infrastructure grant projects and the application of the funds.' In cases such as these the council takes a decision about the project and the SC awards a contract to a qualifying contractor to implement the project on behalf of the municipality. Several councillors admitted that 'SC does not always have the technical knowledge to take the right decisions'. Interviewees also explained how poor decisions lead to delays in project execution and to wastage of resources. This is a cause of serious concern.

The following definition of a municipal decision is offered based on the above analysis:

*A municipal decision is the result of a choice opportunity regarding a decision issue that was processed and shaped by a formal decision process that considers relevant municipal constraints, criteria, objectives and contingencies in pursuit of the aims of the initiator. Implementation of the decision by the municipality may or may not be part of the decision process.*

The same coded data can be interpreted through a complexity lens to generate the following definition of a municipal decision:

*A municipal decision is the result that emerges from a dynamic, self-organising decision process during which a decision issue raised by its initiator is processed through the interaction of diverse actors with different interests and who consider various rules, laws,*

*constraints, criteria, contingencies and objectives before making a verdict. During the decision process many contingent and contextual factors as well as positive and negative feedback loops interact to shape the decision. Implementation of the decision by the municipality may or may not be part of the decision process.*

The second main theme addresses the characteristics of decisions.

### **Main theme: *Characteristics of decisions***

The main theme *characteristics of decisions* is discussed in terms of the following themes, namely *nature of decisions*, *purpose of decisions*, and *decision-making body*. Each of these themes is discussed next in terms of its sub-themes and sub-sub-themes. Sub-sub-themes are used for a more detailed analysis of interview data.

#### **Theme: *Nature of decisions***

The theme *nature of decisions* is discussed here with reference to the following sub-themes and their sub-sub-themes (in brackets), namely *a value judgement* (i.e., '*good decisions*' and '*bad decisions*'), *level of complexity* (i.e., '*black-and-white decisions*' and '*complex decisions*'), *level of agreement* (i.e., *consensus decisions* and *controversial decisions*) and '*difficult decisions*'.

Note that in this section *in vivo* coding is used, i.e., the 'actual language found in the qualitative data record' to honour the voices of the participants (Saldaña, 2013:91) and because the researcher found it a bit hard to generate good alternative code names and theme names in some cases! *In vivo* codes are put in quotation marks to identify them as such. The following *in vivo* codes are associated with the theme *nature of decisions*, namely '*good decisions*', '*bad decisions*', '*black-and-white decisions*', '*difficult decisions*' and '*complex decisions*'. The use of *in vivo* codes in this instance hides the subjective and questionable nature of the terminology used, e.g., 'good', 'bad', 'black-and-white', 'difficult' and 'complex'. The meaning of terms such as 'good', 'bad', 'difficult' or 'complex' depends on many contextual and temporal aspects and imply a value judgement. However, to 'stay close to the data' *in vivo* codes are used. The researcher also acknowledges that his selection of suitable synonyms for the terms 'good' and 'bad' in this context may be improved upon. The terms 'prudent', 'effective', 'defensible', 'acceptable' were considered as alternatives for 'good' but are not used. Therefore the *in vivo* codes were used as names for sub-sub-themes. Initially the sub-theme *level of acceptability* represented the two sub-sub-themes '*good decisions*' and '*bad decisions*'. The name of this sub-theme was later changed to *a value judgement*.

**Sub-theme: *A value judgement*:** This sub-theme has two sub-sub-themes, namely '*good decisions*' and '*bad decisions*'. Good decisions are defined as highly acceptable and bad decisions as highly unacceptable. The sub-sub-theme '*good decisions*' refers to decisions that are perceived to be legal, affordable, implementable, aligned with municipal strategies and they benefit most stakeholders. Good decisions are supported by 'good' quality data, and sufficient data. According to a director 'a good decision is in line with relevant legislation, SOPs, delegations [and] regulations that make it executable.' A senior councillor argued that a good decision 'benefits all, there are no losers, [all] the parties win, and everyone is happy, and it is in support of your aims.' This, unfortunately, may only be true in a utopian world. In the real world, decisions defined as 'good' in these terms are rare.

The sub-sub-theme '*bad decisions*' has to do with decisions characterised as 'bad' due to a deficient decision process, inappropriate aims, or as a result of an undesirable outcome of a decision process. A councillor noted that a bad decision is one 'where the context is not considered, or you want to satisfy yourself, or you want to boost your own ego, or you want to pursue your personal aims. It is not the best decision for the council.' The senior councillor

defined a bad decision as one that 'harms the community'. Officials described a bad decision as one that 'does not add value' or 'does not consider the advice of experts ... [and] exposes the municipality and the community'. Therefore, a decision or decision issue characterised as 'bad' according to the subjective evaluation of the observer should have a low level of acceptability and should not be approved.

Initially the sub-theme *level of acceptability* was used to represent the two sub-sub-themes of 'good decisions' and 'bad decisions'. Due to the subjective nature of the terms 'good' and 'bad' the name of the sub-theme was changed from *level of acceptability* to *a value judgement*.

**Sub-theme: Level of complexity:** The sub-theme *level of complexity* has two sub-sub-themes. Decisions about structured decision issues are clear-cut and are termed '*black-and-white decisions*'. Decisions about unstructured or complex decision issues are termed '*complex decisions*'. The sub-sub-theme '*black-and-white decisions*' includes decisions and decision issues that belong to the group defined as simple or complicated in Table 3.5. According to a director 'some decisions are obvious. It is a yes or a no, based on the rules that are applied.' A senior councillor remarked that 'a decision is about a choice between right or wrong based on what your brain tells you what is right. Logic tells you this is right and that is wrong.' A director, an engineer, agrees: 'You must be able to think logically.' Although this kind of logic can be applied with good effect to structured problems it is inadequate to address complex decision issues.

The sub-sub-theme '*complex decisions*' refers to decision issues that involve many interconnected actors, system dynamics, feedback loops, uncertainty, unpredictability and environmental factors that play a role. Examples of complex decisions mentioned by interviewees include the annual budget and the harbour development at Still Bay involving all three spheres of government. The establishment of a Kentucky restaurant as a new competitor in the restaurant business in Riversdale and the establishment of the solar energy desalination plant at Witsand involving the provincial government and the French government were both perceived as complex issues. The control of dogs and cats in towns, the longer-term management of the Takkieskloof holiday resort in Riversdale, and the development of an abalone farm near Gouritsmond are also complex decision issues involving many stakeholders.

**Sub-theme: Level of agreement:** This category has two sub-sub-themes, namely *consensus decisions* and *controversial decisions*. The sub-sub-theme *consensus decisions* refers to cases where decision makers agree on the way the decision issues should be treated. They agree on the decision process followed, the arguments offered regarding the decision issue, the decision criteria and the output of the decision process in terms of implementation thereof. In council meetings the level of agreement about decision issues is clearly expressed in terms of votes in favour of, and votes against a decision issue. Consensus decisions receive the votes of all councillors (and the support of the directors). The following quote by a councillor illustrates the nature of a consensus decision very well:

An easy decision in the council is one where the opposition proposes or seconds a decision of the council. At a recent council meeting the ANC opposition proposed eleven out of thirteen items, seconded by the DA after the items progressed through the entire decision process. Often it happens that the opposition makes a proposal for approval which is then seconded by the DA, or *vice versa*. This is evidence of good cooperation and consultation.

The sub-sub-theme of *controversial decisions* has to do with decisions characterised as controversial because stakeholders disagree about one or more aspects of the decision, or the decision process followed. Different or opposing value judgements about decisions and decision criteria may lead to controversy. In council meetings the ruling coalition and the opposition party mobilise against one another when controversial issues are addressed. These issues trigger fierce debates and confrontations within the political arena. Often the

administration distances itself from the controversial decisions that are political in nature. Officials regularly take a position regarding the legality, feasibility or justifiability of decisions and this may also lead to controversy. A director remarked: 'Fortunately the administrative component does not have to take the controversial decisions. Rather write an item for the council so that they can decide on the difficult matters.'

Deciding on the future of the Takkieskloof resort was not only complex, but it was also controversial. A current councillor remembered the decision process as follows:

Before the current [2016-2021] council came to power there were heavy political storms about the selling or rental option for Takkieskloof. It ended up in Parliament. The previous council did not take a decision about Takkieskloof because it was a political playball.

Disagreement between officials and the political structures also causes controversy. The governing party decided that as from October 2019 councillors would participate in the appointment process of new officials in the administration. An official explained this controversial decision as follows:

During the previous term [2011 to 2016] policy determined that councillors are not allowed to participate in the appointment process of officials. Not at all! They are not allowed to make recommendations. They did not have observer status. Now council has decided that councillors must be involved as from the date the positions are advertised. The chairperson of the portfolio committee involved ... can then select two councillors to serve with him on that panel. The administration, legal services [department], the personnel department and the municipal manager did not support the proposal. Both [labour] unions also did not support it.

**Sub-theme: *Difficult decisions*:** Decisions that demand a significant amount of mental and emotional effort belong to the sub-theme of '*difficult decisions*'. '*Difficult decisions*' refers to decisions that are experienced as difficult for several reasons. Some decisions are difficult because they demand a lot of *emotional* energy. Other decisions are difficult because the *scarcity* of funds or resources force councillors to prioritise projects for budgeting purposes. It is difficult to prioritise and choose among projects that all seem to be important and desirable. Another group of decisions are difficult for councillors because they are *not popular*. Other decision issues are perceived as difficult because they are *complex* in terms of the definition of complex decision issues. It appears as if interviewees also referred to complex decisions as 'difficult decisions' because they are unable to define them properly and they do not know how to address them.

A senior supply chain official reasons as follows:

It is about the principle, not whether it is easy or difficult [to take a decision]. In our environment we are guided by legislation. It is easy to take decisions because we apply the law. There is no room for subjectivity. Decisions are neither easy nor difficult.

For this official all decisions are clear, and no subjectivity is involved in decision making. This official only applies principles dictated by laws to decision issues. As a result, it is not difficult to take decisions.

The emotionally difficult decisions are experienced as 'difficult' because they stir the emotions. It is emotionally difficult to take these decisions and to convey them to affected parties. A high-profile councillor summarised his emotionally difficult decision to either leave his political party to become an independent councillor, or to resign as a councillor as follows:

It was difficult for me to decide, first, to leave my party and to become independent or second, to resign. For me this was a difficult decision. I grappled for nights with this. I just felt that I could not stay longer with the party. I violated my conscience. I cannot identify



with the manner they think... For me the difficult decision was to stay on as independent councillor, and to take the punch.... For me this was a difficult decision.

Communicating decisions with a negative impact to an audience or individual is also experienced as difficult (by councillors). A senior councillor used the following example to explain the nature of an emotionally difficult decision.

Often there is not enough money [in communities] to pay for services. To balance the budget, it is necessary to increase taxes with six to eight per cent. These are difficult decisions. When we have to take decisions, and then have to sell the message, it is difficult for me because many of our communities do not have money to pay for services.

Decisions experienced as difficult due to *scarcity* are plentiful. Most budget decisions belong to this sub-group. A former mayor noted: 'Currently the budget is the most difficult decision... Often it is difficult to balance the budget and to keep everybody happy.' A current councillor remarked:

A difficult decision is the budget meeting where you have to select two projects that are advantageous to your community when you know there is a list of projects. How do you choose two from that list? It is difficult.

A former councillor summarised the essence of the issue: 'It is difficult to prioritise projects.' An official explained the nature of unpopular decisions as follows:

They cause friction between the administration and the politicians. Administration wants to take a certain decision because they know it is the best, based on research, studies, expertise but blatant political advantage always plays a big role.

A director also described his dilemma regarding *unpopular* decisions:

This is often my dilemma, because you need to give answers that are not popular, or you need to take decisions that are not popular although they are technically correct, financially correct, and they are correct from a governance point of view.

### **Theme: *Purpose of decisions***

The theme *purpose of decisions* explains why the municipality has to take decisions. The theme includes four sub-themes, namely *setting strategic direction*, *policy formulation*, *policy implementation* and *risk management*.

**Sub-theme: *Setting strategic direction*:** The municipality takes high-level decisions to provide strategic direction for operational and tactical decisions. The sub-theme *setting strategic direction* is extracted from data that suggests that some decisions inform or constitute the strategic direction of the municipality. The council's decisions regarding its strategies for the period 2017 to 2022 are captured in the fourth review of the IDP. In his foreword to this IDP the mayor wrote:

This is the principal strategic document of the new council that was elected in August 2016. This municipality will ... strive to give effect to the Integrated Development Plan and conduct its affairs in a manner that is consistent with the plan, which guides and informs all planning, budgeting, management and decision-making in a municipality.

During an interview a councillor stated: 'We build the DA manifesto into the IDP of the municipality. That is what it is all about.' To give effect to the strategic decisions stated in the IDP the municipality takes two kinds of decisions according to an official who noted:

Decisions are about anything that informs policy, or that enables execution [of policies]. These are the two elementary kinds of decision making in a municipal context, policy and

enablement of execution. Policy gives direction to decision making. Policies are principal decisions that direct execution of plans.

This informative reference sensitised the researcher for the two sub-themes of *policy formulation* and *policy implementation*. Several codes clustered around each of these sub-themes.

**Sub-theme: *Policy formulation*:** The municipality also take decisions regarding the formulation of policies and by-laws. The sub-theme *policy formulation* contains data about policy decisions formulated by the council in terms of the policies of the ruling party and national legislation. A current councillor of the ruling DA party describes how DA policy and legislation impact upon municipal policies:

When we workshop a policy or adjust policies, we do it according to the policy of the DA. We have the DA manifesto that we had before the general election. Then we align the municipal policy with the policies of the DA and with legislation. With the 2021 election they [the DA] will give out a new manifesto that will focus more on local issues... Then we'll develop policy for the municipality according to the DA manifesto and policy, but in line with the MFMA. We consider legislation and DA policy.

This reference illustrates the strong influence of the policy of the provincial governing party as well as national and provincial legislation on municipal policy. A senior official explains how a new government regulation triggered the formulation of a new policy.

Legislation is a factor, a global thing, over which we have no control. We just have to implement it. A good example is the cost containment regulations that we received in June 2019 and that had to be implemented by July 2019. We had to draft a policy overnight to address cost containment.

These references illustrate how provincial party policy and legislation in general co-define municipal policies. Municipal policies, on their turn, guide the implementation of municipal strategies as stated in the IDP.

**Sub-theme: *Policy implementation*:** The sub-theme *policy implementation* refers to data about decisions regarding the implementation of municipal policies by the different directorates. An official from SC explained how policy informs their decisions:

Legislation prescribes that every municipality must have a supply chain management policy. The MFMA also prescribes what the minimum content of the municipal policy must be. Legislation is very prescriptive in our doings. We do not take arbitrary decisions. We are instructed how to work. The council is the policy maker. We implement the policy. Procedures, standard operating procedures are approved by the municipal manager, and we execute it.

This same logic that applies to the SC is followed in other directorates. Municipal policies and the delegation system are used in combination by the administration in the execution of their service delivery functions.

**Sub-theme: *Risk management*:** The sub-theme *risk management* represents data about decisions that are taken to address municipal risks. In this regard a former councillor observed: 'The decision must benefit the community in the long term. It must manage risks. You must stop things that you foresee that may go wrong. Our council look ten years ahead.' A current councillor indirectly emphasised the importance of risk management in the following statement: 'When we came to power in 2016, we had a mandate about decisions regarding economic advancement, our own fire brigade and water security... This continues to determine our mandate and decisions.' An official referred to the strategic risks facing the municipality as follows: 'It's about global warming and climate change, energy security, provision of [fresh]

water. These three are the biggest.’ Data from this subcategory suggest that certain risk management decisions address economic risks, energy security risks and risks associated with the forces of nature such as fires and droughts. These quotes also capture the shared understanding of strategic risks between the political structures and the administration.

**Theme: *Decision-making body***

The theme *decision-making body* refers to the groups of decisions that are addressed by the different decision-making authorities in the municipality in terms of legislation and the delegation arrangements. A councillor explained it as follows: ‘There is the delegation register that states what delegated authority every person has. A lot of things are delegated to me and the speaker and the municipal manager and the council.’ An official noted the following: ‘There are council decisions or EMC decisions. It is all about delegated powers. Some decisions may not be delegated. Only the council can take policy decisions. Departments sometimes decide in silos.’

The theme decision-making body has three sub-themes, namely *council decisions*, *EMC decisions* and *delegated decisions*.

**Sub-theme: *Council decisions*:** The sub-theme *council decisions* includes those decisions that may not be delegated by the council. The council cannot delegate the passing of by-laws, the approval of budgets, the imposition of rates and taxes and levies and duties, and the raising of loans according to Section 160 of the Constitution. A councillor explained: ‘Legislation determines that the budget, for example, has to be approved by the Council. Other decisions can be taken by the EMC. Everything regarding the budget must go to the Council.’

**Sub-theme: *EMC decisions*:** *EMC decisions* are taken in terms of the delegation structure whereby the council mandates the EMC to take certain decisions. Most of this group of decisions are referred to the EMC by the different portfolio committees.

**Sub-theme: *Delegated decisions*:** *Delegated decisions* are those that are delegated to the political structures, the municipal manager and various directorates or individuals in the administration. A director noted that ‘the most important part of decision making is the delegations, to decide what type of issues the delegated official can take decisions on.’ A more specific description of the delegation system is provided by an official from the SC department:

We have delegations. Most delegations stem from sub-delegated powers that we get from the municipal manager. Legislation gives the municipal manager delegations, and he delegates further... Legislation delegates powers to the accounting officer, the municipal manager. Then he delegates powers to the CFO, the CFO sub-delegates to me, and I delegate further down the line.

Both the leaders of the SC and the planning department have much position power based on the delegated powers and authority associated with their positions. A senior official explained the delegation system as follows:

We are instructed how to work. The council is the policy maker. We implement the policy. Procedures, standard operating procedures are approved by the municipal manager, and we execute them.

The above findings represent the *characteristics of decisions* as a main theme in terms of the three themes. These themes are the *nature of decisions*, the *purpose of decisions* and a classification of decisions in terms of the *decision-making body* involved.

Findings regarding the formal decision-making processes of the municipality are discussed next.

## Main theme: *The formal decision-making process*

The main theme *the formal decision-making process* is defined in terms of four interconnected themes and their sub-themes that capture essential aspects of the formal municipal decision-making process. First, the theme *issues for decision* is discussed in terms of the sources of decision issues that enter the decision process. Second, the theme *process aspects of decision making* is discussed. The formal decision-making process is the emergent result of all the constituting processes that co-produce the formal higher-level process, almost like the many tributaries that combine to form a great river. Third, the theme *structural aspects of decision making* is examined in terms of the supporting data. Various structures shape the flow and outputs of the decision processes. The structural aspects and the process aspects are interwoven. Fourth, the theme *contextual influences* is reviewed. The process aspects, structural aspects and contextual influences co-determine how decision issues are processed in the formal decision process. Each theme is discussed next in terms of its sub-themes.

### Theme: *Issues for decision*

The theme *issues for decision* refers to the basic inputs that activate the formal decision process. Two sub-themes are observed in the data, i.e., *sources of decision issues* and *decision issues in the IDP*.

**Sub-theme: *Sources of decision issues*:** The sub-theme *sources of decision issues* indicates that decision issues may originate within the internal context or in the external context of the municipality. An official put it as follows: 'Decision [issues] come from the public, the politicians or administration to a central point, which is the desk of the municipal manager. The municipal manager gives instruction for the [further] processing of the issue.' Two sub-sub-themes are distinguished here, namely *internal sources* and *external sources*.

The sub-sub-theme *internal sources* refers to decision issues originating in the internal environment of the municipality, i.e., the political structures and the administration. A current councillor explains how she starts the decision process by preparing a rough draft document that is transformed into an item by the administration:

I collate the documents and they refine it. I only write the framework... When you have a project that you want to implement you write it up and give it to the speaker or the director. Then they prepare the item with reference to the relevant legislation.

The sub-sub-theme *external sources* contains data about decision issues that originate in the external domain. In terms of the conceptual boundaries between the internal and external environment the external sources of ideas and issues come from the residents of the municipal area or from any other external stakeholder. A current councillor explained in clear terms how the communities normally bring their issues to the attention of the municipality:

A decision [issue] is initially identified by the community. Then the decision [issue] comes to the ward committee because the ward committee is the mouthpiece of the community. Then it comes from the ward committee as a recommendation to the portfolio committee, and from there it is referred to and taken up by the EMC and there the decision is taken. At the council the decision is brought to execution.

A former councillor directs his requests or complaints directly to the municipal manager. He says: 'If I want to get something done, I write a letter to the MM... I do not have to go to my councillor with requests.'

A current councillor identified the private sector as a source of decision issues, saying: 'Issues for decisions ... often comes from the private sector, for example MNet, private entrepreneurs or Pick 'n Pay that wants to convert Mitchel Street in Riversdale into a one-way'.

A director explained by means of examples that court decisions and instructions from other spheres of government often become issues for decision on the municipal agenda.

Now there are new court judgements that municipalities must deliver water on farms. The context now changes.

The government brings in legislation about design criteria for dumping grounds for environmental protection purposes. But it becomes unaffordable to satisfy all the requirements, for example water quality and sewage systems.

**Sub-theme: *Decision issues in the IDP*:** The sub-theme *decision issues in the IDP* reflects the importance of the IDP as a source of strategic decision issues for consideration in the decision-making process. A current councillor explained how the public can contribute their inputs into the IDP:

At the public participation processes and municipal outreaches people can give inputs for the IDP and the capital budget. It may happen through the ward committee and also when the concept budget is made public in October. Then people can read the IDP or budget at the library and give their inputs and comments.

The IDP contains the strategic aims and strategic initiatives that the municipality plans to implement during a five-year term. These strategies and plans are the sources of many decision issues that enter the formal decision process.

### **Theme: *Process aspects of decision making***

The theme *process aspects of decision making* links up with various associated and interconnected sub-themes. Nine sub-themes are distilled from the data. These are *framing a decision issue, routing decision issues, item writing, deciding on issues, governance of decision processes, feedback processes, implementing decisions, drivers of decisions and consultation*. Each sub-theme is discussed in terms of its sub-sub-themes.

**Sub-theme: *Framing a decision issue*:** The sub-theme *framing a decision issue* has to do with the way a decision maker initially conceptualises and contextualises a decision issue. Framing typically takes place early in the decision process whereas reframing of issues often take place during later stages once more information about the issue becomes available.

A director provided a good example of how he had to reframe an issue as more information became available:

Someone asks [permission] to develop a piece of land as a cemetery. It is easy to give approval. But as I collect more information, I find out it is an Indian who uses an empowerment transaction to buy farmland outside the integrated development framework and who wants to market it as a cemetery. Suddenly, the decision is not easy anymore because the [initial] information was incomplete ... information is lacking, there is not sufficient information available.

In Section 5.2 above this thematic analysis already identified issues framed as *black-and-white decisions, difficult decisions, and complex decisions*. The same issue can be framed as 'black-and-white' or as 'complex' depending on the context, the perspective and the assumptions of the observer or actor. An actor's worldview and consciousness about time and space may also influence his or her perspective.

**Sub-theme: *Routing decision issues*:** The sub-theme *routing decision issues* refers to coded data about the way a framed decision issue is processed after framing. A director explained how the basic decision system functions:

The Hessequa Municipality has a system according to which they take decisions. It is the delegation system and the other one is the normal ward committee-portfolio committee-EMC-council process.

Each of these processes is only a branch of the overarching delegation system. The council may delegate decisions to the EMC, the executive mayor or to the municipal manager in terms of legislation. Once an issue is framed it is channelled through one of these two systems (or branches) to the authorised and mandated decision-making body. This body may be a directorate, a department, an individual of the administration or a body within the political structures such as the ward committee, a portfolio committee, the EMC or the council.

An official explained in some more detail how a typical complaint from the public is addressed and routed:

The MM receives the complaint ... it goes to the director involved who has to investigate the matter before preparing an item. Then the item goes to the ward committee, the portfolio committee, the EMC and finally to the council.

**Sub-theme: *Item writing*:** During the interviews the concept of item writing triggered the researcher's interest and curiosity. As a result, a very informative focus group session was held. Rich data from this focus group complement the interview data. The initial hypothesis was that the way an item writer presents, formulates and contextualises the decision issue in the item (i.e., the document or report) as well as the choice of language may influence decisions. This focus group defined an item as 'a written report with information regarding the purpose, background, discussion and recommendation about a specific matter addressed to a decision forum for consideration by the decision makers'. The sub-theme *item writing* refers to the process of collating documents and preparing the report or item in the prescribed format. An item contains the data and information used by decision makers to inform their decisions. Alternatively, an item may be written for information purposes only. An official described the process of 'item writing' as follows:

Item writers write the report based on research done by them. The process is not very formal. Your report is a reflection of yourself. Once a report is written it is distributed to colleagues for comments back to the author who then adjusts the report, almost like a peer review process. This feedback can lead to adjustments to the contents or the recommendations in the report.

A participant defined an item as 'a communication medium for decision-making purposes'. A former mayor pointed out that 'the item contains the information for decision making'. Items are normally written in Afrikaans and in a few cases in English. Items directed to other spheres of government are prepared in English. The home language of all the directors and all but one councillor (whose second language is English) is Afrikaans.

The sub-sub-themes *relevance of language* and *quality of the item* are observed. The sub-sub-theme *relevance of language* has to do with the influence of the language in which the item is written on the decision process. The consensus of the entire focus group was that decision makers treat items written in Afrikaans different from items written in English. One of the conclusions of the focus group was the following: 'We have experienced that fewer questions are asked when complex English is used. It is our opinion that items in Afrikaans generate many more questions than English items.' A similar observation was made by a senior official who stated:

I have also found that items, and I am hundred percent honest when I say it, items that are written in English with English attachments, go through the council just so [quick]! And I am concerned about it. It appears to me that when items are written in English there is fewer ... Let's not delve deeper! It is more difficult in English, and then it just goes fast ... I don't know if I am paranoid about it, but I think it is worrying.

A councillor added the following interesting comment:

This may become a tactic of an official or officials when they want to push things through. Then do it in English ... Once officials become aware of this, to do it in English, they will write it in English. This may be dangerous!

The sub-sub-theme *quality of the item* is all about the attributes of the document. An excellent item, according to the participants of the focus group, is one that is neat, logic, credible, comprehensive, to the point, accurate, understandable, objective, neutral, substantiated by facts, supported by legislation, in time, impactful and properly written. The quality of an item degrades if one or more of these features are lacking. The consensus agreement of the focus group was that 'a good item informs a good decision'. For a weak or a bad item, the following applies: 'Junk in, junk out'. Poorly prepared items are referred back to the authors for a review before decisions are taken about them. The quality of an item is improved and confirmed by circulating items to all relevant parties in the administration before submitting it to the council for a decision. A councillor explained the quality control process as follows:

When we came to power in 2016, we decided that all items that go to a portfolio committee or EMC or council or councillor must be signed off by the chairperson of the portfolio committee or EMC or council before the item is distributed and submitted. Then we can decide whether the contents of the item are correct and ready for submission. We have sent items back to the authors so that they can include more information to allow us to take an informed decision.

For example, when the municipality wants to sell a property, the following entities must comment on the completeness and accuracy of an item (as prepared by the property office) according to a councillor:

Then technical services must give their opinion. Then it comes to the legal department for their opinion. The last person that signs is the MM and they make the recommendations to the council.

A senior official gave a similar explanation of the quality control process regarding items:

Legal services comments on all items. Finances comments on all items. Items in connection with housing must go to ... the director there. If it is about planning or building control matters the director of planning must comment.

Items that do not meet the minimum quality standards are not submitted to the council. An official explained as follows:

When I submit a poor item to the council the chances are good that the item is referred back with a lot of questions... The items that we submit to the council must be correct. We have to advise the council correctly. We cannot provide the council with incomplete information and then expect that they will take the correct decision.

An experienced councillor expressed the need for uncensored but accurate items: 'Never censor an item. Make sure that the item is comprehensive. We must never censor stuff. Often, I disagree with the contents of an item. If the contents are accurate, it must serve.'

**Sub-theme: *Deciding on issues*:** The sub-theme *deciding on issues* is based on coded data about decision processes employed by the various decision-making bodies in the municipality. These processes themselves are embedded in networks of processes. A combination of all these processes constitutes the higher-level emergent process of 'deciding on issues'. These contributing processes include the debates and dialogues that take place in workshops, caucus meetings and meetings of the portfolio committees, the EMC and the council. Final decisions about delegated issues are made by the directors, the municipal manager and the

administration, as well as the portfolio committees, the mayor and the EMC in terms of legislated delegations. Three sub-sub-themes are identified, namely *decisions by individuals*, *decisions by groups* and *formalising the decision*. The sub-sub-theme *decisions by individuals* refers to individuals that have delegated powers to take decisions on specific matters. The following statement by one of the directors reflects what typically happens in some of the directorates when the director has to take a decision: 'I make the call. In my department I make the call.' This director also explained that such a call is only made after consultation with experts within the directorate or with external sources. Another director explains how he takes decisions:

In terms of my position, I have fairly broad executive powers in myself as person and in my position so that I do not need a committee to take decisions. Applications that have to be processed end up on my table and I take the decisions about them. For this I do have delegated powers from the council. The decisions that I have to take are weighty and important decisions. I am guided mainly by legislation... There is a set of guidelines, or a framework prescribed by legislation within which I have to take decisions.

The sub-sub-theme *decisions by groups* refers to decision making by groups of people such as the EMC and the council. However, before a decision issue reaches the EMC agenda it is discussed in detail and prepared properly in the caucus and in the formal meeting of the portfolio committee involved. A former mayor gave the following elaborate but very informative explanation of what happens at the caucuses and meetings of the portfolio committee, the EMC and council:

A director prepares an item with the inputs from the people in his department. The item then goes to all the departments for their inputs before it goes to the council. First, we as a caucus discuss the item. Then we caucus with the coalition partners, for example in the caucuses of the portfolio committee and the EMC ... The caucus deals with the available information. In difficult cases we contacted other municipalities such as George and Plettenberg Bay to find out how they handled similar cases ... The council gets this information, studies the item, caucuses about it within the party, and gets advice from elsewhere when needed... During the [caucus] meeting a tentative decision is taken, like for example in the portfolio committee where we look at the item for the first time. At the portfolio committee we ask the officials for clarity. During the meetings where tentative decisions are taken in-depth discussions are held with all stakeholders present, and their inputs are also considered there. All stakeholders and all parties at the portfolio committee meeting under the chairmanship of the governing party give their inputs. There are officials from the departments involved. All other officials are there as well as members of the opposition party. Consultants are also invited to provide expert inputs about specific issues. Normally these issues are addressed at workshops ... It is important that all information that may possibly be relevant has to be available at the workshops and portfolio committee meetings ... External documents are sometimes given to business chambers before meetings, for example in Still Bay, for comments back to the council.

The council takes decisions after much deliberation in the portfolio committee and in the EMC meetings that take place about ten days after the portfolio committee meetings. Thus, there is time to process the inputs from the portfolio committee and to caucus again before the EMC and to consider new inputs so that everything can be included in the comments to the EMC. The EMC decision may differ completely from the recommendation by the portfolio committee.

The advantage of getting different inputs is that you can think further and wider about everything. When you take a wider view of everything you grow of course! Even inputs from the opposition are useful provided they are aligned with the vision. Some final decisions are not taken by the EMC but go to a full council for a final decision and final approval. Some cases the council can finalise. Legislation prescribes which decisions have to be taken by the council. The council takes decisions only after sufficient discourse has taken place. After reaching your desk it takes about a month for an item to progress through the



portfolio committee to the EMC and to the council. One can also delay decisions in order to fill gaps in information. Then it is referred to the next EMC.

This long reference summarises the entire formal decision-making process. It explains the different stages of the decision process, processes to collect and to process relevant information, the importance of the quality of items and the status of the various forums. It also refers to time scales and the involvement of other political parties and external sources of information.

Although the council is the ultimate decision-making body in the municipality it only formalises decisions by the EMC. Given the fact that the EMC consists of councillors from the governing coalition only it is highly unlikely or rather impossible that the full council will take a decision against the wishes of the EMC or the governing coalition. An interviewee observed that 'the council is only the rubber stamp' on the decisions and the recommendations from the EMC.

Both the EMC and council meetings are preceded by caucus meetings. The rule is that the consensus reached in the caucus meetings about decision issues are only formalised in the actual meetings of both the EMC and the council. Therefore, the consensus reached in the caucus of the EMC regarding any decision issue is confirmed at the council meetings where the majority vote of the governing coalition is the determining factor. A current councillor explained the important role of caucus meetings in decision making as follows:

Before every portfolio committee, EMC or council [meeting] we have a caucus [meeting]. Each party has its own caucus. The caucus is the most important. The decision is taken there. When the item reaches the council, we know exactly what the decision will be. In our [DA] caucus we make it a nice, participatory process.

Our caucus works as follows: I am the caucus leader, and the chairman is our party whip. I start and introduce the caucus, explain what is happening in the council ... Then we work through the agendas. If it is a caucus of the portfolio committees then every member of the EMC must take the lead with getting through his portfolio. Each point is debated. At the EMC meeting I take the lead as chairman. At the council the speaker manages the agenda. Decisions by a caucus are carried through unchanged by the [respective] meetings of the portfolio committee, EMC or council. We have participatory processes.

A current DA councillor explained what happens to a decision issue at a council meeting once the EMC has finalised its decision on it:

From there [EMC] it goes to the council. Because we are the majority ... we have caucused the whole item and made all the changes required. When we are in the council, we put the case before the council. Then the ANC may perhaps not agree. They then make a second proposal. That is when we vote between the proposals of the ANC and the DA. Then we have the majority. This is the course of an item.

These references confirm that it is highly unlikely that the municipal council would rule against a decision or recommendation by the caucus of the EMC. This is why a councillor remarked during a focus group: 'The [EMC] caucus is the core of the municipality.'

A current councillor describes a caucus meeting as follows:

A caucus is actually like a sanctuary. What is talked about inside it may not be discussed outside. It is closed. There we can say what we want, and how we feel about issues.... But then we see what the majority decides in the caucus.

Another councillor describes decision making by the caucus of the governing coalition as follows:

In the caucus we sort out the issues properly, we resolve differences of opinion, and eventually we reach a consensus. Then ... the [FF+] coalition member has to agree with the DA in order to execute our decisions.

A councillor explained that the caucus of the governing coalition follows the philosophy of the current president of the United States, Joe Biden: 'We will give it to you straight, regardless of the nature of the message. We will tell you the truth.'

It is therefore clear that the caucus of the governing coalition makes decisions on a consensus basis. These decisions are formalised at the EMC meetings or at the council meetings. Decisions at council meetings merely reflect the decisions of the caucus of the EMC.

Decision making by the EMC is based on a consensus-seeking process rather than voting. Once a consensus is reached by its caucus a decision may be taken by the EMC regarding delegated matters. However, a member of the EMC is not allowed to disagree with the rest of the caucus. A former councillor shared his personal frustration about the consensus approach of the EMC as follows: 'This is my problem with the caucuses. As the caucus tells you to do, so you must do. You cannot refuse to agree, else they take disciplinary action against you.' A current member of the EMC raises an associated concern: 'Sometimes, in the caucus there is groupthink.'

The sub-sub-theme *formalising the decision* refers to the 'rubber stamping' of decisions by a formal council meeting where the superior voting power of the governing coalition dominates and dictates the output of the decision process. In some instances, legislation requires that the council takes the decision. In these cases, the consensus position of the EMC (i.e., the ruling party or coalition) on a decision issue is merely formalised in the council through a voting process dominated by the majority vote of the governing party or coalition. The council takes decisions through a formal voting process facilitated by the speaker who also votes. A majority vote (by the governing coalition) concludes a decision by the council regardless of the way the opposition councillors vote. A former councillor sums it up as follows:

Issues presented to the council have been talked through at the EMC beforehand. Therefore, one party can propose and then it's finished. At the EMC's portfolio committees, it has already been rehashed. So then the council process is just a formality. The work is actually done by the portfolio committee and the EMC. Everything is finished when the council sits. Then the council takes the official decision.

**Sub-theme: Governance of decision processes:** The sub-theme *governance of decision processes* is extracted from coded data about the oversight processes that ensure the integrity of the decision processes. A closer look at codes associated with this sub-theme revealed four clusters of codes associated with the following sub-sub-themes, namely *rules of the game*, *external governance*, *self-governance* and *performance management*.

Governance of decision processes is based on relevant legislation. Thus, the sub-sub-theme *rules of the game* contains data about the terms, norms and rules of the governance processes. It represents data about all the rules and regulations that apply to municipal decision making. A quote from a former councillor captures the essence of this sub-sub-theme:

You have the Constitution that prescribes what local government must do, Article 151 and so forth. This describes the objectives of local government. The Systems Act and the Structures Act and the MFMA direct the work of the municipality. The other one is the Service Delivery and Implementation Plan, also very important. In addition, a municipal code [of] by-laws or municipal regulations was drafted with the help of a knowledgeable consultant.

The importance of these laws, by-laws, rules and regulations was emphasised by each and every interviewee, by officials and councillors. The following comment from an official captured the view of many interviewees:

There are the MFMA and the regulations that prescribe how we must act and what we must do. Actually, there is no room to deviate. Things are black and white. There are no grey areas for interpretation.

The sub-sub-theme *external governance* refers to data about the framework for internal self-governance. Both external governance and self-governance processes are applied in the municipality. External governance arises from national and provincial legislation.

A senior director referred to the relation between external governance and self-governance as follows:

Legislation insinuates that all role players must regulate themselves. But it is a self-imposed task. Fortunately, we have a very responsible management team that will address politicians through the mayor, speaker or caucus leaders and warn them when councillors act inappropriately.

The same official also made the following remarks linked to the sub-sub-theme of *external governance*:

There is the Constitution, Systems Act, Structures Act and numerous other laws that create a framework for decision making. We have to be knowledgeable about this framework and we have to say what the consequences of our decisions are, and then we take the decision.

Another official also emphasised the influence of external legal requirements on decision making. He said: 'Legislation is a factor ... over which we have no control. We just have to implement it. A good example is the cost containment regulations that we received in June 2019.'

A senior official echoed the importance of external governance in her department as follows:

Legislation prescribes that each municipality must have a supply chain management policy. The MFMA also prescribes the minimum content of the municipal policy. Legislation is very prescriptive in our doings. We do not take arbitrary decisions. We are instructed how to work. The council formulates policy. We implement the policy. Procedures, standard operating procedures are approved by the MM and we execute it.

Within the directorate for development planning legislation governs decision making to a large extent. A senior official explained as follows:

Within the context where I work my decision making is largely determined by legislation and prescribed by legislation... The decisions that I have to take are substantial and responsible decisions. To a large extent I am guided by legislation. There is a set of guidelines or a framework within which I need to take decisions as prescribed by legislation.

All these references correspond with observations made by the researcher and numerous similar statements by most of the interviewees about the importance of legislation. The numerous consecutive clean audit reports by the AG are also testimony of governance 'according to the law' within the municipality. The annual report of the municipality for 2019-2020 provides a comprehensive overview of the governance structures of the administration and the political structures.

The sub-sub-theme of *self-governance* is illustrated clearly by the following statement from a director: 'We will do nothing, and my department knows it, we will do nothing that implies us with any [inappropriate] activity.' This is an example of personal self-governance that actually obviates the need for external governance. A councillor explained that the decision process itself contributes to good self-governance. He said:

Council must take an informed decision. The council will never take a decision that has not gone through a process. To take an item directly to the council means trouble. We must take cases to the ward committees, then to the portfolio committee, the EMC and then finally to the council. In the meantime, there are public participation processes. When you go through the processes, you get the most trouble-free council decisions with which everybody agrees because it has been thrashed out, advantages and disadvantages discussed, and everybody agrees, or they vote against it out of principle.

Another councillor affirms that the following happens after all the directors have commented on items and before the items are included in the agenda of the council meeting:

The MM, who signs off last ensures that all the directors are in line. Legal services ensure that the MM does not support a recommendation that is against the law. I ... make sure that the officials have collated the documentation properly.

Another example of self-governance is found in the SC department. A senior official explains that 'according to delegated powers the tender committee can only award up to an amount of ten million Rand. Above ten million Rand only the municipal manager may approve, regardless of the amount.' The judgement of the municipal manager introduces another measure of self-control over council decisions. He registers his counter vote on record when he disagrees with the council.

The sub-sub-theme of *performance management* elaborates on the processes to measure performance against targets and norms, and the process to address deviations. Performance is measured against the aims and objectives contained in the IDP and formalised in the SDBIP and associated KPIs of officials. A director explains: 'There are about five to ten major themes that the council commits to ... This informs our departmental objectives that we set, and this leads to projects or programmes.'

The annual report of municipal performance contains detailed reports about the performance of all the directorates and departments. The corresponding sub-sub-sub-themes are *tracking progress* and *deviation management*. The sub-sub-sub-theme *tracking progress* has to do with the monitoring and tracking of decision issues as they progress through the formal decision process towards implementation. An official noted: 'Our decision management system is [called] Collaborator... The storage of correct information is of utmost importance to us.' A director believes that the Collaborator system is 'a wonderful system' and describes it as follows:

It is an electronic management system ... [that] keeps an electronic paper trail of everything... Even items are written in each department. It [The item] is sent electronically to the directors for comments. ... When the auditors arrive, you can refer them to Collaborator. The Collaborator item gets a number [tag]. For each number the documentary history of the specific case exists – the paper trail thereof.

Project documentation ends up on Collaborator for my attention. I can delegate the case to a manager. There is control over decision making. Is it completed on Collaborator? A project is only removed from Collaborator once the project is completed or implemented.

Another director referred to Collaborator as follows: 'It is a very good system. It is part of the success of the municipality.'

The sub-sub-sub-theme *deviation management* has to do with data about processes that address deviations from targets and norms. Internal audit processes and audits from external parties such as the AG identify deviations of municipal processes from generally accepted norms, legal prescriptions and targets. The annual report of the municipality contains details about deviations within all the directorates and their departments for the year in focus. An

official remarked that 'under-expenditure on capital projects is a concern'. This deviation is also listed as a major concern in the annual report of 2019-2020.

An official explains how the Collaborator system is also used as a deviation management system:

If it [a decision] is not completed it remains an outstanding issue. Every month I report back about all outstanding issues, older than 90 days, older than 120 days. We do not like [outstanding] activities older than 120 days. ... We limit all outstanding tasks to 90 days.

When a stakeholder is unhappy about a decision of a directorate an appeal can be lodged at the council against the municipality.

**Sub-theme: *Feedback processes*:** The sub-theme *feedback processes* refers to numerous positive and negative feedback processes that interact with municipal decision making. Positive feedback processes drive system variables away from preferred conditions and negative feedback processes aim to balance or dampen the positive feedback loops. One type of feedback process is the appeal process that the public can use as a remedy to address decisions perceived by them as inappropriate or wrong. A councillor admitted that he is comforted by the fact that 'there are article 32 committees that can review decisions. There are legal processes that the public can use to revise our decisions. We can take wrong decisions, but they can be revised.' The councillor also explained the need for interactive processes that provide feedback regarding project implementation once a decision is taken.

As politicians we have an oversight role over SC. All that we see is completed projects. We get information about tasks that have been completed, after awards [of tenders] had been made. Then we can do nothing about it. Politicians are not allowed to participate in decision making by supply chain. However, we can develop a strong policy that has to be applied.

The following statement by a councillor links on to the latter one. The council may influence the supply chain process through strong policies but may not interfere with the operational processes thereof. The political structures receive feedback about progress with projects and the awards of tenders, but they may not influence them.

For each tender that is awarded feedback is given at the portfolio committee. The director of technical services is given feedback at the PC [portfolio committee]. Feedback is also given at the Big Six meetings where progress of projects is discussed. The portfolio committee councillor also gives me feedback about projects. Sometimes I attend meetings to find out what is happening. We get feedback on a regular basis.

The annual report of the municipality provides feedback to communities about decisions of the council during the previous financial year. This report is published on the municipal website.

**Sub-theme: *Implementing decisions*:** The sub-theme *implementing decisions* refers to the execution of decisions. Several sub-sub-themes address aspects regarding implementation of decisions. The sub-sub-theme of *policy implementation* is concerned with the implementation of all kinds of policies and related projects by the administration and with the implementation of projects in terms of applicable policies. An official confirmed: 'Officials are accountable for the implementation of decisions.' Projects of the municipality are implemented by the municipality itself or by contractors appointed by the supply chain department. Formal tracking of the implementation of decisions is done on the Collaborator system.

**Sub-theme: *Drivers of decisions*:** The sub-theme *drivers of decisions* indicates which factors or forces propel decision issues through the formal decision process. The sub-sub-themes *time as a driver*, *actors as drivers* and *legislation as driver* illustrate how different factors drive decision processes forward. The sub-sub-theme *time as a driver* indicates how time schedules,

year planners, legislative schedules and temporal aspects drive decision issues through the formal decision process. A director explained that ‘a lot is prescribed in terms of legislation that requires that certain decisions have to be taken at certain times, prescriptive... You need to do things at certain times to complete work within the financial year... So much is prescribed.’ The project plan to update the IDP and to prepare the 2022-2023 budget is a prime example of a time-driven decision process. The process consists of about 70 process steps, starting on 1 July 2021 and ending with the budget speech by the executive mayor on 31 May 2022. Many of these steps and milestones are prescribed by legislation. On the one hand, time schedules drive decisions forward. On the other hand, legal requirements such as appeal periods delay decision making. In this regard a councillor explains: ‘Someone wants to open a shop ... the application is open to the public for objections, then follows twenty-one days for appeals ... It is four, five or six months before the shop can open. This is bad.’ When decision issues can be processed through the delegation system rather than the formal process through the political structures decision making is expedited.

The sub-sub-theme *actors as drivers* illustrates how stakeholders with interests push decision issues through the process to achieve their aims. A councillor explained that a responsible councillor may drive an issue through a decision process and added: ‘The councillor feels proud when such an item is approved, and he or she can report back to the community. Councillors drive, but it is mainly legislation and processes that drive decisions.’ One interviewee explained how the Still Bay business chamber assists individual business owners that struggle to get results from the municipality. ‘Then people ask the business chamber for assistance and then we roll up our sleeves and jump in and work, shoulder to shoulder with that individual.’

Another factor that may motivate senior officials and directors to drive decisions to fruition is the performance bonus system. A councillor noted that ‘you need to score eighty per cent [on your KPI set] to get a full performance bonus, and below that you get a smaller bonus.’

The sub-sub-theme *legislation as driver* indicates how legal requirements create the stimulus to drive decisions processes towards completion. A director explained how legislation puts time pressure on him as a decision maker to make decisions about land uses:

The law determines how much time I have as the decision maker to take decisions... The law streamlines and expedites decision making. Because the law gives time limits I am forced to take decisions within certain time periods. You must make the call.

**Sub-theme: Consultation:** The sub-theme *consultation* refers to data about numerous consultation processes that are interwoven with the formal decision process. Each caucus session preceding meetings of the portfolio committee, EMC and council is essentially a consultation process during which councillors, directors and knowledgeable officials are consulted. The directors, specialist officials and the legal adviser normally attend meetings of the portfolio committees, EMC and council in an advisory capacity and without voting rights. The formal decision-making process is effectively composed of a series of consultation steps. (See Figure 5.8 and Figure 5.10.) A senior councillor assures that the council will never take a decision without going through a formal process. He motivates it as follows:

To take an item directly to the council means trouble. We have to take issues to the ward committees, then portfolio committees, then EMC, and finally to the council. In the meanwhile there are public participation processes. When you go through the processes you easily get a council decision with which everyone agrees because then it has been thrashed out, advantages and disadvantages have been discussed and everybody agrees ...

Three sub-sub-themes related to the sub-theme of *consultation* are distinguished. These are *consulting communities*, *consulting administration* and *consulting experts*.

The sub-sub-theme *consulting communities* refers to instances where the public and residents are consulted about issues for decision. Communities are consulted during workshops and meetings with residents. A councillor explains the details of this consultation process as follows:

Details about the workshop are advertised in the media, newspapers, Facebook, web pages and the public is invited to give inputs. The matter is put before the ward committee. The ward committee consists of sectors, businesspeople, farmers, schools [teachers] and so on. The ward committee considers the inputs of the public and they give their own comments and opinion together with the inputs from the public to the portfolio committee which is a closed meeting.

The councillor chairing a portfolio committee referred to public consultation processes as a 'bottoms-up approach – that is when the people have to take the decision.' He then explained how the public is consulted during the budgeting process:

We go to the communities. We ask how they think, ask them for their inputs. That information is considered ... You consult your community and bring the feedback to the council via the portfolio committee... For us it is important. There is important stuff that comes through and we work on it.

Hessequa Municipality often consults the Still Bay business forum regarding strategic issues for the town. An interviewee who chaired this business forum for years stated:

They come to us and ask for our inputs regarding plans that they consider. For example, they requested our inputs about changes to the main road to Still Bay ... We had to comment about different options.

Councillors often consult residents of their wards to get a mandate to act on their behalf. An ANC councillor explained the process as follows:

Housing is a big issue in our wards. Last week we held community meetings about housing. The community gave me a mandate to act. The mandate influences all my decisions ... We consult the people.

This researcher has attended dozens of consultation sessions, workshops, '*indabas*', '*imbizos*' and discussion forums since 2004 where residents were consulted about important matters such as the budget, energy security, tourism development, economic development and environmental matters. Normally the inputs from communities are indeed considered by the municipality. A director confirmed the importance of workshops and stated: 'Often you get incredibly good inputs during these workshops as well as creative inputs... I am very much in favour of it. Then you also have the buy-in of the community during implementation.' Another director emphasised the exceptionally high importance of inputs from the communities on his decisions as follows: 'In my directorate I regard the community as the biggest single factor that influences decisions.'

The sub-sub-theme consulting administration has two additional components, namely politicians consulting administration and officials consulting administration. Politicians consulting administration refers to instances where officials are consulted by the councillors regarding decision issues. The mayor explained how this happens during all their caucuses: 'When we caucus we always call in the officials. We ask for their opinion regarding each point, we give our opinion, and then we get a consensus opinion.' Such consultation happens at the caucuses of the portfolio committees, the EMC and the council.

The expertise of the municipal legal adviser is often required by the political structures during their caucus sessions. A legal expert explained his involvement as follows:

I am called in to their caucuses when they require an explanation or a legal opinion. I see all the items in any case. As legal adviser I comment on each item. What are the legal implications of this item for the council?

All the directors and the municipal manager normally attend council meetings where councillors may consult officials before decisions are made.

The other sub-sub-theme *officials consulting administration*, refers to instances where an official consults one or more colleagues within the administration. Officials often and regularly consult one another regarding the preparation of items for decision making. A director explains how each director is consulted before items are included in the agenda of the council to ensure the accuracy and integrity thereof:

When you prepare an item for the council for a decision, the system makes provision for the internal distribution [thereof] to all the directorates [for comments]. Any decision may have potential financial implications, an effect on the IDP, the strategy or may have a legal implication or risk. From a corporate services perspective decisions cannot be taken without consideration of the other directorates.

The sub-sub-theme *consulting experts* represents data about the consultation of knowledgeable people that are experts in their disciplines. Both councillors and officials consult experts. A councillor explained how the political structures consulted experts regarding the control of dogs being a nuisance in townships. He noted: 'When you deal with complex issues, don't try to be smart. Involve experts and then decide. We consulted veterinary surgeons and the SPCA. Other municipalities were consulted.' A director described how he consulted an expert in connection with traffic matters and street networks in Still Bay:

We have incredibly knowledgeable people in our region, for example retired engineers and academics, a professor in traffic engineering and statistics... I talked to the professor and he offered his services free of charge. He has fifty years' experience in engineering.

A councillor also clarified how the council makes use of experts when required. 'We visit other municipalities to gather information, or an advocate helps us with legal opinions ... Some of us went to George to talk to engineers ... For my personal legal advice I make use of a former magistrate.'

### **Theme: *Structural aspects of decision making***

The process aspects of decision making are embedded in overlapping structures. As a result the structural aspects of decision making and the process aspects are intimately integrated. The one cannot be disconnected from the other. The theme *structural aspects of decision making* refers to some of the salient structures that are observed in the coded data. Sub-themes associated with this theme are *linear decision processes*, *networks of decision processes*, *actors within structures*, *bureaucratic structures*, *voting patterns*, *creative spaces* and *power structures*. Each sub-theme is reviewed next.

**Sub-theme: *Linear decision processes*:** The sub-theme *linear decision processes* refers to the formal, highly structured linear and formal municipal decision-making process. Applications or issues for decision that are normally forwarded to the municipality are received by the municipal manager. A councillor explains the subsequent process by means of the example of a liquor licence application as follows: 'The MM then sends your application to the different departments to ensure that everything is in order. Because it affects the community it is referred to the ward committee.' The ward committee, without decision-making powers, considers the issues for decision and makes recommendations to the portfolio committee. The portfolio committee investigates matters further and make recommendations to the EMC. If the EMC is not authorised to take a decision on a matter it is passed on to the municipal council



as the highest level of authority in the municipality. Included in this process are the public consultations, the involvement of experts, workshops, caucus meetings where issues are debated as well as the formal meetings where the decisions are taken before a possible implementation step follows. A councillor summarised this linear decision-making process as follows: 'We need to take issues to the ward committees, then to the portfolio committees, [then] to the EMC and then finally to the council. In the meantime there are public participation processes.'

**Sub-theme: *Networks of decision processes*:** The sub-theme *networks of decision processes* suggests that many processes precede, co-define and make up the formal decision-making process. Three sub-sub-themes are distinguished, namely *processes in series*, *processes in parallel* and *processes in cycles*. All three sub-sub-themes share the common characteristic that they progress into the future within the temporal domain. However, spatially these processes proceed either in series, i.e., step-by-step, one process step after the other, or they happen in parallel, i.e., at the same time. The category *linear decision processes* discussed above are associated with the sub-sub-theme *processes in series*. An example of a process step in series is the annual audit process of the AG after completion of a budget year cycle. Preparation of the annual report about the performance of the municipality also belongs to the sub-sub-theme of *processes in series*. The annual report can only be compiled after completion of the financial statements and the performance evaluations of officials. The preparation of the annual budget consists of about seventy process steps that follow one after the other, i.e., in series.

The sub-sub-theme *processes in parallel* refers to processes that happen all at the same time. Some governance processes happen in parallel with the decision processes and the implementation thereof. The processes to monitor and to govern decision processes by means of the Collaborator system take place in parallel with the decision-making processes. An important but less obvious parallel process is the public's processes of experiencing, monitoring and evaluating municipal performance and decision making. Inadequate performance regarding the provision of housing (as perceived by the protestors) informed the protest march of 6 September 2019 in Riversdale. Voters' perception of the performance of the local political structures of the municipality co-informs their decision to vote for a specific party or candidate during elections. An associated feedback loop may therefore change the political leadership of either a ward or the entire municipality once voters become unhappy about performance and elect a new councillor. Actually, this feedback process is also a cyclical process with a five-year cycle time.

The sub-sub-theme *processes in cycles* has to do with processes that follow cyclical patterns with different but synchronised frequencies. Processes such as the compilation of the IDP with its strategic focus areas, corresponding performance measures and the longer-term budget follow a five-year cycle. The process to compile the annual budget repeats itself with one year intervals. The agenda of the monthly council meeting is the emergent result of numerous interconnected processes with a one month cycle time that co-produce the items contained in the agenda. All these cycles are synchronised and captured on the year planners of the municipality, national treasury, the AG, and the other spheres of government.

**Sub-theme: *Actors within structures*:** The sub-theme *actors within structures* indicates how key role players involved in the formal decision processes are structurally connected. An analysis of the coded data produced the sub-sub-themes *hierarchies of actors* and *networks of actors*. Actors are interconnected by means of political and organisational hierarchies and networks that span municipal, provincial and national boundaries, both vertically and horizontally. Not all the actors in the formal process are human. Some are non-human!

The sub-sub-theme *hierarchies of actors* refers to the political and administrative hierarchies that transcend and include the municipal hierarchies. The political hierarchy includes national,

provincial and municipal governance structures of the various political parties. The municipal political hierarchy spans the levels of the council at the top, the executive mayoral committee (EMC), the portfolio committees (PCs), the ward committees, and the residents registered as voters. The executive mayoral committee (EMC) and the mayor are endowed with very strong mandates from the council to take decisions on delegated matters. Within the administration the municipal manager is head of the bureaucratic hierarchy. He is supported by the directors heading the five directorates. The directors on their turn are supported by the heads of their respective departments. The political hierarchy provides political and strategic direction as well as oversight functions whereas the administrative bureaucracy focuses primarily on implementation of policies.

The sub-sub-theme *networks of actors* refers to communication networks of human actors that span all types of boundaries. These networks interconnect advisers, consultants, forums, politicians, residents, government departments, other municipalities and academics with one another. Non-human actors that are often ignored are climate and weather systems, nature, the ocean, rivers, water sources, mountains as well as the fauna and flora of the region. In the era of 4IR technology is also becoming an important actor. The human and the non-human actors are also networked. In a way 'everything is connected to everything else'.

**Sub-theme: *Bureaucratic structures*:** The sub-theme *bureaucratic structures* is associated with the formal administrative bureaucracy of the municipality. The bureaucratic structure is employed to implement the decisions of the council according to the policies of the council and the laws of the country. Two sub-sub-themes are observed, namely *red tape and nonsense* and *the delegation system*. The first sub-sub-theme of *red tape and nonsense* refers to time-consuming formal processes that stifle the efficiency of the decision processes and the implementation of decisions. A director explained his frustration with bureaucratic red tape as follows:

We are caught up in red tape and all kinds of nonsense so that I feel I cannot make my full contribution about strategic matters as I am supposed to be doing, because it is a battle about minor aspects, procedures, and forms that have to be completed.... As far as I am concerned it is a huge impediment here within the organisation, it is a big stumbling block.

A senior official shared a similar frustration with all the legal requirements that supply chain department has to adhere to:

Many times, especially with payments and approval of requisitions: The requisitions are sent back to you a hundred and ten times about trivial issues... We are busy to streamline the processes of supply chain on Collaborator to eliminate the red tape...

A councillor gave his opinion: 'Logic is often lacking in departments, and this leads to red tape and delays.'

The second sub-sub-theme *the delegation system* refers to data about a very effective process to delegate decision-making powers throughout the internal environment of the municipality. This system is intended to streamline decision making. Important components of the delegation system are the delegation register and the Collaborator data base. A director commented on the delegation system as follows:

Delegations are extremely important. When you get a new political environment, all delegations are withdrawn immediately. The more trust you build ... the more the decision-making authority delegates decisions to make run-of-the-mill decisions easier. Provided you have a proper set of rules you can take the decision and finalise it. It is driven largely by stability, political stability, and administrative stability. When trust is lost, all delegations are withdrawn immediately.

**Sub-theme: *Voting patterns*:** The sub-theme *voting patterns* is linked to the way the councillors vote during council meetings in favour of, or against proposals. The general rule is that all members of a political party (or a coalition) vote exactly the same. This rule applies to the governing coalition and to the opposition party. General voting patterns are also observed during local elections when councillors are elected for a new term. Voters in very low-income areas tend to vote for the ANC and voters in the more affluent areas tend to vote for the DA or the FF\*.

**Sub-theme: *Creative spaces*:** The sub-theme *creative spaces* refers to data about occasions during which adaptive, creative and innovative entrepreneurial action and thinking are stimulated. Creative spaces can be virtual, physical or mental spaces or even a meeting (Uhl-Bien & Arena, 2018:99). The sub-theme *creative spaces* represents data about events and processes that allow diverse actors to connect and to network in order to exchange ideas. The council and the administration often conduct workshops where an exchange of information, ideas, mind models and viewpoints takes place. Some of these workshops are attended and facilitated by academics who stimulate creative and innovative thinking. The caucuses, meetings, public consultations and workshops of the portfolio committees, the EMC and the council may also serve as adaptive spaces where the processes of conflicting and connecting (Uhl-Bien *et al.*, 2018) are stimulated.

**Sub-theme: *Power structures*:** The sub-theme *power structures* refers to data about hierarchies of power associated with people within the decision-making systems. (The focus here is on human actors and not on the powerful forces of nature, climate, weather, technology, the economy and so on.) Power can be defined as the ability to manipulate a decision process or the capacity to determine the outcome of a decision process. Two sub-sub-themes are observed, namely *level of power* and *level of influence*. The sub-sub-theme *level of power* talks about the personal power and, or positional power that various stakeholders of the decision process may have. The sub-sub-theme *level of influence* talks about the degree of influence that a weak or powerful stakeholder may have on the decision process.

Legislation co-defines the relative positional power of the political structures, councillors and officials of the municipality. The hierarchy of the political structures includes national government at the top, provincial government, local government represented by the council, the EMC, portfolio committees, individual councillors and voters at the bottom of the hierarchy. Voters operate at the lowest level of power in this hierarchy and national government possesses ultimate power. The administrative hierarchy in the internal environment of the municipality spans all seven organisational layers, from the municipal manager at the top, to the directors, heads of departments and further down to the lowest administrative levels.

The ultimate power and influence to make municipal decisions resides with the council, the EMC and other stakeholders in terms of the delegation system. All indications are that these actors do exercise their powers and influence. At the less powerful bottom end of the hierarchy of power and influence are individual voters, the poor and voiceless people and also incapable individual councillors and officials with almost no influence and very limited personal power. Several interviewees noted that a number of councillors 'do not make a difference', 'they do not contribute to the caucus' and 'they do not participate in council meetings' because 'they are there for the money'. Although these less competent councillors occupy positions of positional power they may not assume this power due to a lack of personal power, motivation or agency.

With reference to the municipality an interviewee made the following statement:

During my career I have learned that the most senior person in a discussion group may not necessarily be the power broker or decision maker in the group. There is often someone else, more junior, that is the decision maker.

This quote illustrates that people without formal position power may have high influence based on high levels of personal power. See Robin Sharma's (2010) book *The leader who had no title* in this regard. However, once individuals with little power and influence mobilise and combine forces they may muster significant levels of power and influence as demonstrated by the peaceful protest march on 6 September 2019 in Riversdale. The same pattern is observed when individuals' collective voting power is used to elect councillors during elections to present them in the municipal council. The Still Bay Business Chamber has also demonstrated that organised business has both status and significant influence in municipal affairs.

### **Theme: Contextual influences**

The theme *contextual influences* is related to sub-themes regarding factors that are considered by stakeholders involved in the formal decision process. These sub-themes are *aims and objectives of stakeholders*, *decision criteria*, *VUCA factors*, *inputs from stakeholders* and *value systems*. The sub-theme *aims and objectives of stakeholders* is discussed first.

**Sub-theme: Aims and objectives of stakeholders:** The sub-theme *aims and objectives of stakeholders* has to do with the aims of the different stakeholders involved in the formal decision-making process. Three sub-sub-themes of data from interviews are observed, namely *municipal aims and objectives*, *political aims and objectives* and *administrative aims and objectives*. A fourth sub-sub-theme is observed in documentary data containing all the inputs received from the communities for the preparation of the 2020-2021 version of the IDP and budget. This sub-sub-theme is called *communities' needs*.

The sub-sub-theme *municipal aims and objectives* refers to data about the objects of local government as defined in the Constitution and implemented by the administration. A former councillor summarised his understanding of the goals of municipalities: 'You have the Constitution that prescribes what local government must do, Article 151 and the rest. It describes the goals of local government.' A councillor formulated the basic aims of the municipality as follows:

The primary function of the Hessequa Municipality is to supply water, sewage [removal services], electricity and waste removal services to communities. In squatter camps and informal living areas the big distress is housing, housing. This is priority.

An overarching aim of the Hessequa Municipality, shared by most interviewees is good governance. A councillor observed:

Good governance is important to us. This is part of our vision and mission. We are proud of it... We would rather promote our municipality through good decision making, good service, also through policy, and being a caring municipality.

A senior official shared her perspective of the aims and objectives of the municipality:

What is important is that we give small steps ... so that we can be the best municipality in the country... I think we are among the top five municipalities in the country. We are on our way to become the best municipality in the country.

A director phrased his understanding of the municipal aims and objectives as follows:

We know what we have to do – we have to provide clean water, we need to prevent sewage pollution, the roads must be decent, we need to do the basic stuff properly. Then the other things will fall in place. We have a constitutional accountability regarding basic services that we need to provide.

The sub-sub-theme *political aims and objectives* refers to the ambitions and goals of stakeholders with a political agenda. A current councillor stated the broad aim of the DA caucus

as follows: 'When we came to power we said that we want to be a caring municipality and we put it like this in the IDP... We always try to take the best decisions that benefit the broad community.' A director describes how the aims of the provincial government influence his decisions in a significant way:

The Western Cape Government has five goals that they want to achieve. Take the [application for an] abalone farm as a good example, and you consider one of the five strategic [provincial] goals... the development of aqua culture... The community revolts against it ... On the other side the decision maker must consider the strategic goal of the province for municipalities to promote aqua culture.

This example demonstrates the direct influence of provincial goals on municipal decisions. A more specific aim of the ruling DA party is to develop the coastal towns. A councillor said:

One of our aims is to develop Still Bay because there is a big demand for development... We want the inland towns [Albertinia, Heidelberg and Riversdale] to focus on factories, manufacturing because they are on the main routes... We focus on Still Bay to increase our revenue.

Several councillors confirmed that development in Still Bay is promoted to increase the revenue base of the municipality. One said: 'We do [develop] Still Bay to restore the finances of the municipality to health through growth in Still Bay.'

The sub-sub-theme *administrative aims and objectives* contains data about officials' diverse aims and objectives. A departmental manager said 'first priority is service delivery'. A director believed that 'we need to provide clean water. We must prevent sewage pollution. The roads must be decent. We need to do the basic stuff right.' Another director pursues the following aim: 'Decisions that I take ... are purely about developing and creating a sustainable community within which all of us can live happily. This is the main aim of my work.' Still another director stated clearly: 'I understand that we have to make sure that Hessequa remains [financially] sustainable. I really fight for this.'

(The aims of the different role players are discussed in more detail in Section 4.4.3 above.)

The sub-sub-theme *communities' needs* reflects the aims and objectives of stakeholders within the communities. These stakeholders include individual residents, registered voters, sport clubs, business and tax forums, and associations with interests in archaeology, cultural affairs, development planning and the environment. They plea for the provision, availability, reliability and affordability of basic services, maintenance of existing infrastructure, care for the environment, safety and security, reasonable rates and taxes, and an environment that is conducive for economic development.

**Sub-theme: *Decision criteria*:** The sub-theme *decision criteria* has to do with the decisive factors that are applied and considered during the decision-making process. Some of these factors constitute constraints, limits or boundaries within which decisions have to be taken. Different sub-sub-themes of criteria and considerations are observed in the data. These are *financial criteria*, *technical considerations*, *reputation considerations*, *political considerations*, *social considerations*, *legal criteria*, *consequence management* and *the time factor*. The sub-sub-theme *financial criteria* contains data about financial factors that impact on decision making. A former councillor remarked: 'Money is the main factor that influences decisions.' A former mayor remarked: 'Availability of funds determines what will be done. Therefore, finances are important.' A former councillor noted: 'In financial terms, the question would be: Has it been budgeted for? Are the requirements and prescriptions of the MFMA being satisfied? Can the expenditure be justified?'. A senior councillor confirmed the importance of budget constraints, stating that 'financial factors are by far the most important. Can we afford it? The financial plan guides us in decision making.' The current financial plan sets the annual

boundaries and limits of financial parameters as constraints until 2029. Another councillor explains that he uses the plan regularly: 'When we borrow, we keep the plan in mind. The financial plan plays a big role in every decision about expenditures, income and tariffs.' A manager involved with the budget process confirms that 'the capital budget is balanced according to the long-term financial plan'. A former mayor emphasised the importance of the long-term financial plan since 2011 as follows:

We always worked with it and considered it in our decisions... We worked strictly according to the financial plan. We always took it very seriously. And it was always a reference. We always used it.

A director mentioned another important financial requirement from the office of the AG: 'All of a sudden cost containment had to become part of our policies.' As a result cost containment has become a key consideration in decision processes.

The sub-sub-theme *technical considerations* has to do with technical considerations that influence decisions. The need for new infrastructure development, the need to maintain existing infrastructure and the relative importance and urgency involved have a huge influence in decision making. On the one hand, infrastructure investment in Still Bay attracts new residents who broaden the revenue base of the municipality. On the other hand, there is an urgent need to upgrade the sewage systems in all the Hessequa towns. A councillor warns: 'You cannot afford to delay it [maintenance]. There will come a time when it will become a problem.' This councillor also talks about technical considerations to stimulate economic development. She says: 'Now we look at industrial development. Which towns are near the N2 [national road] like Albertinia? Here we can establish light industry.'

The sub-sub-theme *reputational considerations* refers to data that suggests that maintenance of the reputation of the municipality has a very strong influence on decision making. According to a senior official 'the concept of a clean audit has become a new consideration' in decision making. A director confirmed the importance of a prestigious clean audit report as follows: 'In Hessequa Municipality we will not do things that other municipalities do and thereby threaten our clean audit.' A director also stressed the importance of a clean audit report as follows:

The clean audit is perhaps the best testimonial of good decision making, good administration, good management, good recommendations and support to the council who is ultimately accountable for the municipality.

A senior director summarised the consensus view of the administration as follows: 'It [i.e., the clean audit report] is the strongest motive there is to do the right things the right way at the right time within the rules.'

The councillor chairing a portfolio committee argues that demands to streamline the cumbersome supply chain procedures might compromise a clean audit outcome. According to this councillor, the discussions involved are normally settled as follows:

When they ask for a relaxation of it [the supply chain requirements] I tell them they must decide whether they want a clean audit or whether we follow the supply chain procedures. The clean audit is always the one [argument] that wins because we have received it for a number of years in a row.

The sub-sub-theme *political considerations* refers to coded data about political aspects that influence decision making. A former councillor despised the idea that he always had to sacrifice his independent opinion in favour of the political position of the caucus of his political party. He said: 'I don't like it to be bound and to violate my conscience because I am bound by the caucus. This for me is a wrong principle.' Another councillor highlighted the important role of

the coalition partner to ensure that the interests of minorities are considered in decision making as follows:

I believe in coalition politics, especially where the FF+ comes in and contributes a certain political dimension. No one looks after the interests of minorities. Both the DA and the ANC go for the majority. The FF+ looks after the interests of the minority. A coalition government can balance the focus between majorities and minorities.

A current DA councillor describes how the policy of her party influences decision making:

When we workshop a policy or adjust the policies we do it according to the DA policy. We have the DA manifesto that we had before the general election. Then we align the policy of the Hessequa Municipality with the DA policies and with legislation.

A former ANC councillor explained how national and provincial government influences local decision making by ANC councillors:

Our guidelines come from national legislation and national policies and this is ANC policy. The only times when we are influenced by national or province are when we ask them for advice. We approach national or provincial leaders for advice when we experience problems. Then they help us, or advise us, but they do not give instructions.

This same former ANC councillor also gave details about how he used inputs from the DA opposition to govern.

In my time I was absolutely dependent on the advice and the critique of the independent candidate and the DA. I used that critique and employed it to govern... It was important to me... They could give me other insights that made me change decisions.

A DA mayor admitted that she also used inputs from ANC councillors during her term. She said: 'Often we accepted and integrated those [ANC] inputs into our decisions ... because they live in the communities involved.'

The sub-sub-theme *social considerations* is extracted from data about the social desirability of projects that influence decision making. A significant number of interviewees emphasised the importance of inputs from communities and residents on decision making. A director stressed the importance of considering the social impact of projects on communities as follows:

In my directorate I regard the community as the single biggest factor that influences decision making. The influence that projects will have on communities, and also the reaction of the community on an application [for land use] play a big role in decision making.

The sub-sub-theme *legal considerations* refers to a lot of data about legal constraints on decision making and good governance practices. A senior manager noted the following: 'In our environment we are led by legislation. It is easy to take decisions because we apply legislation'. A councillor confirmed the importance of legislation on decision making as follows: 'For every decision we take, we get a legal opinion... Then the decision is formulated in terms of the experts' recommendation. This is very important.'

The sub-sub-theme *consequence management* is related to data that suggest that the expected consequences of decisions also influence the decision process. A director confirms the importance of this aspect, stating the following: 'Every time we have to ask: If I take this decision ... what will be the consequences?' Another director confirms that considerations such as consequence management 'quickly become critical variables in our environment.' A councillor confirmed: 'We always try to find out what the possible consequences of decisions may be.' A senior official stated: 'In terms of the consequences of decisions, the environment, legal aspects [and] impacts on communities are considered.' Data from this sub-sub-theme

indicates that there is an element of future consciousness involved in the decision-making process.

The sub-sub-theme *the time factor* has four subdivisions, namely *urgency*, *timing of decisions*, *duration of decisions* and *planning horizon*. *Urgency* captures data about decisions where time is limited. A director said that 'often you are put in a position where you have to take decisions on the spur of the moment'. A head of a department often makes urgent decisions. She said:

Sometimes you have to take decisions on the spot and then you can't go back. Then there is something like experience, and experience will normally lead you to the right outcome. To be honest, for me it is like second nature to take a decision. It is not something about which I really think. I take decisions unconsciously. It is not something about which I think.

The last reference highlights the importance of intuition and experience when decisions have to be taken when time is limited. In this regard a director confirmed that he also uses his intuition on a daily basis to evaluate decisions and added: 'That is where experience comes in... Your intuition tells you how to take the right decision.'

*Timing of decisions* contains data about the importance of the time at which a decision is taken relative to other events or circumstances. A former councillor explained how she had to delay decisions under a very unstable and confrontational multi-party coalition government. 'Often I had to delay decisions to calm the storms so that we could talk. That hampered decision making. Some decisions you could not take immediately, because then you know the decision would be in favour of the opposition.'

Certain decisions are timed and taken just before municipal elections. Several interviewees referred to decisions by the ruling party (i.e., either the DA or the ANC) to influence voter sentiment towards them before local elections. A former councillor blamed the ANC that 'they contracted a lot of debt, especially the last year [before the 2011 election] to canvass for votes. Much money was spent on RDP houses, on paving of streets ... and they made overseas tours.' An official observed the following tendency under DA government in the Western Cape: 'Title deeds are handed out just before elections.'

*Duration of decisions* refers to how long it takes to take a decision. A director explains that simple decision issues often take a long time to progress through the formal decision processes. 'Simple applications like wood cutting get stuck for three or four [council] meetings. Sometimes simple issues drag on for very long. Simple issues often drag on for three or four months without a decision being taken.' A legal adviser, who attends every council meeting shared similar experiences. He said: 'According to me the easy stuff is harder to process, whereas the difficult stuff like the traditional leaders and Khoi-San [future membership of municipal councils] ... went through smoothly.' Some officials understand that the shorter the duration of the decision process, the better for the stakeholders. A director affirms:

Part of decision making is the fact that the decision to be taken does have an impact upon someone. The longer the decision maker takes to make a decision, the larger the [negative] impact on the affected party. One of the aims of the [Planning] Tribunal ... was to shorten the decision-making process drastically.

This director, like various other interviewees, also explained that legal requirements often dictate the duration of a decision process:

There are legal requirements that basically determine the speed of the decision process. The MFMA plays a prominent role in the process. Often the process is frustrating... Due to the prescriptions in the law we cannot shorten the decision process. Thus, the law determines the minimum duration.



Some decision processes are tedious. A councillor chairing a portfolio committee explains how long the decision process takes to convert farmland into plots for rural development: 'Land for [rural] development has to be subdivided, rezoned, subdivided [again], and included into the spatial development framework. These processes take three, four to five years.'

*Planning horizon* contains data about the time horizon considered when decisions are taken. A current councillor of the ruling party put the traditional five-year planning horizon of municipalities in perspective. He said:

A five-year term is extremely short for a councillor ... to make a difference in a community. You need more time to do things. There should be a vision and it can't be a short-term vision. A five-year vision is short term. There should be a long-term vision.

A director only has a five-year planning horizon for some of his strategic projects. He explained: 'Some of my large projects that I have to decide on fall within a five-year time frame. Strategic projects go together with the IDP and the five-year vision of the council.' The planning horizon of both the planning department and the technical department is well beyond the traditional five-year period when they deal with infrastructure development, land use applications and spatial development.

**Sub-theme: VUCA factors:** The name of the sub-theme *VUCA factors* is linked to the volatile, uncertain, complex and ambiguous nature of the municipal context. A senior director believes that the most important characteristic of the current context is 'its variability due to environmental factors'. Coded data contains numerous references to dynamic system variables that belong to this category. The sub-sub-theme of *political factors* contains data about political variables in the internal and external environments of the municipality. The following quote from a director captures the essence of this sub-sub-theme:

In that [contextual] environment there are numerous variable elements of which the party-political turbulence in this country is the biggest one... International variables change daily, international politics, South African politics, local politics, party politics, coalitions... In our case coalition politics since 2011 has had a major impact on our decision making. It is a stable environment versus an unstable environment.

The sub-sub-theme *social factors* contains coded data about uncertainties in the social domain that are considered in decision making. During an interview an ANC councillor issued the following warning about social unrest regarding a shortage of low-cost housing in Riversdale: 'You know on what volcano we sit that can erupt at any time.' Exactly one day after this interview, that is on 6 September 2019 a peaceful protest march was held in Riversdale about housing.

Numerous other VUCA factors are discussed in Chapter 4 where the contextual environment of the municipality is examined.

**Sub-theme: Inputs from stakeholders:** The sub-theme *inputs from stakeholders* is distilled from data about participation of communities, residents, academics, experts and knowledgeable people in municipal decision making. These contextual factors also influence municipal decision making. Three sub-sub-themes are distinguished in the data, namely *inputs from communities*, *inputs from workshops* and *inputs from knowledgeable people*.

The sub-sub-theme *inputs from communities* confirms the importance attached to inputs from residents. A DA councillor, like various other interviewees explained how residents provide inputs to decision processes:

We go to the communities. We ask what they think, [we] ask for their inputs. That is information that is considered in decision making... You consult your community and bring the feedback to the council via the portfolio committee.

An ANC councillor gave his perspective about inputs from his ward:

The community gives its input first and then the caucus. Last week we held a community meeting... The community gave me a mandate to act. The mandate influences all my decisions as well as all the decisions we have to take... We consult the people.

A director confirmed the importance of community involvement in decision making as follows: 'Your approach must be inclusive. In other words, people must be free to express themselves. People have to be involved in processes where decisions are taken on their behalf.' The interviewee from the Still Bay business chamber described their involvement in municipal decision making as follows:

They [The municipality] come to us and ask us about our inputs regarding plans that they consider. For example, they asked for our inputs regarding changes to the main route to Still Bay just before the bridge. We had to comment on different options under consideration. The municipality depends heavily on Still Bay business chamber when they make certain plans because they know we are properly organised. Recently our business chamber conducted a strategic session with the municipality. We discussed four strategic issues.

The following comments from an official confirm the importance of inputs from communities.

Still Bay has got platforms that cooperate very effectively with the council and they take initiative for the town's development... The people are positive, and they influence the decisions of the council. There is an open door.

A councillor confirmed the importance of community participation as follows: 'You must know [recognise] your community. When you have to decide on important matters and you do not consider your community, you'll get problems. There will be marches.' All these quotes emphasise the importance of community involvement in municipal decision making.

The sub-sub-theme *inputs from workshops* refers to the inputs generated during facilitated workshops organised by the municipality. An official explained the value of workshops in decision making as follows:

When expertise is not available within a portfolio [committee] such external expertise is brought in on a regular basis. When the expertise of the administration is not trusted the council will give an instruction for a workshop to discuss the issue, to hear a neutral voice, especially when it is [about] unpopular decisions.

The consensus opinion of interviewees is that workshops generate valuable information that influences decision making.

This researcher actively participated in two workshops of two days each on the topic of renewable energy with the municipality. The outputs of these workshops are used to develop a renewable energy strategy for the municipality. A director commented as follows on the value of workshops: 'Often you get incredibly good inputs at these workshops, as well as creative inputs. During implementation you then also have the buy-in of the community.'

The sub-sub-theme *inputs from knowledgeable people* contains data about the valuable inputs from individuals with either specialist, disciplinary knowledge or relevant and lived experiences. Two further subdivisions are distinguished, namely *inputs based on expertise* and *inputs based on experience*. *Inputs based on expertise* is illustrated by much data about the expert inputs of numerous individuals. A director referred to the contributions of a retired professor from Still Bay as follows:

We have incredibly knowledgeable people, for example a doctor ... who is a professor in traffic engineering and statistics in our area. I talked to him and he offered his services for free. He has fifty years experience in engineering.

A former director referred to himself as an internal source of technical and engineering expertise. He remarked: 'My role as technical manager is to provide good technical advice, and also advice that makes financial sense. I am the link between my department and the politicians.'

*Inputs based on experience* recognises the valuable contributions that people with relevant lived experience about specific decision issues can make to decision processes. A councillor explained the value of inputs from residents based on their experience as follows:

It is wonderful [to see] how many people from our public give inputs based on own experience. People that are affected directly by decisions in their area often give the best inputs ever. Therefore, first consult the people in the community that are affected by the decisions... My best comments come from the local residents.

*Inputs from knowledgeable people* recognises the important contributions of both experts and experienced people in decision making. Often these inputs are free of charge.

**Sub-theme: Value systems:** The sub-theme *value systems* represents data about the value systems of decision makers. The sub-sub-themes of *positive values* and *negative values* are distinguished. Both types of value systems may have a significant influence on the way a decision maker approaches a decision issue. The sub-sub-theme of *positive values* refers to data about constructive values that contribute to ethical and effective governance and decisions.

A councillor confirmed that Christian values are important in the municipality. He remarked:

For me it is all about respect, respect for yourself and respect for others. This is priority for me. And then care for one another and for our community. Religion is always important. Here we can express our religion. We talk about the Christian religion. And we put it in the IDP.

One councillor actively lives out her Christian values and stated clearly: 'I always trust the Lord.' For her the values of integrity and the maintenance of good interpersonal relationships are of prime importance. The value of trustfulness is of critical importance to the municipality, according to a senior official. He remarked: 'We are very serious about it. Stuff that is supposed to be confidential must be treated as such. For us trustworthiness is an important aspect of everything we do.' A former mayor simply stated: 'I dislike it when the council acts improperly. It appeals to me to do what is right.'

A director who acts in terms of his personal value system remarked as follows:

I work with an old value system according to which I grew up. I carry it with me. One must have a value system as basis to inform one's decisions. If you do not have values and principles you are not necessarily a steadfast person.

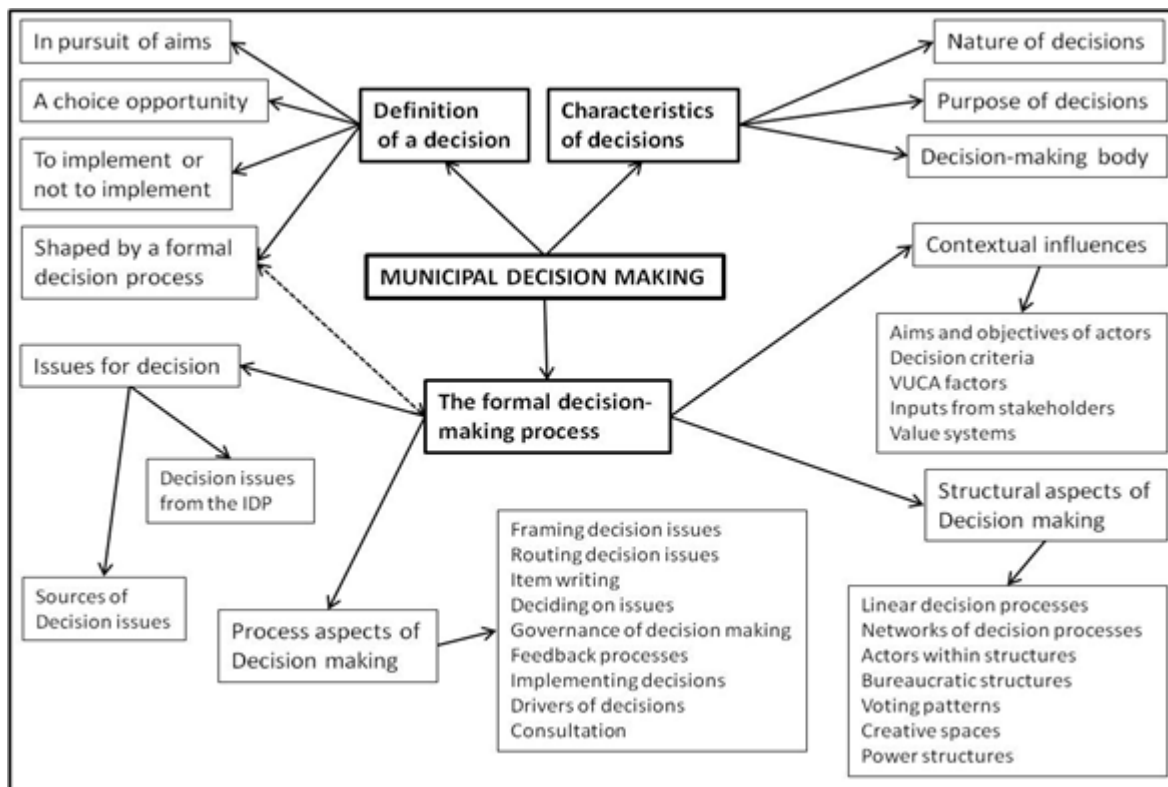
The sub-sub-theme of *negative values* refers to data regarding unfavourable values that have a direct negative influence on municipal decision making. A former councillor described the very negative influence that an unreliable coalition partner appointed as deputy mayor had on decision making. She noted: 'He was difficult to work with because he just changed his opinion. The DA depended on him for a majority vote... I could not trust the councillor... He was completely unreliable.' A former councillor recalled an occasion during which the caucus of his own party decided on short notice not to approve the annual budget at a council meeting although the caucus promised their support to the governing party beforehand. He noted: 'No, for me that was unethical. Here we don't operate like that.' A director experiences the politically

biased and preferential treatment of wards associated with the governing party as 'unfair' and 'sometimes disgraceful'. (This applies to both the DA and the ANC.)

**Table P-1: Summary of main themes, themes, and sub-themes observed in the data**

<b>Main themes</b>	<b>Definition of main themes</b>	<b>Themes</b>	<b>Sub-themes and (sub-sub-themes)</b>
<b>Definition of a formal decision</b>	The main theme <i>definition of a formal decision</i> defines a municipal decision as the result of a choice opportunity at the end of a formal decision process with an intended aim and a resolution about its implementation.	In pursuit of municipal aims. A choice opportunity. To implement or not to implement. Shaped by a formal decision process.	
<b>Characteristics of decisions</b>	The main theme of <i>the characteristics of decisions</i> refers to the way the interviewees talk about the nature of municipal decisions and the purpose of these decisions. This theme also refers to the categorisation of decisions in terms of the entity responsible for taking the decision about specific decision issues. Most often the nature of a decision issue determines which decision-making body will address the issue.	Nature of decisions.	A value judgement: (Good decisions. Bad decisions). Level of complexity: (Black-and-white decisions. Complex decisions). Level of agreement: (Consensus decisions. Controversial decisions). Difficult decisions.
		Purpose of decisions.	Setting strategic direction. Policy formulation. Policy implementation. Risk management.
		Decision-making body.	Council decisions. EMC decisions. Delegated decisions.
<b>The formal decision-making process</b>	The main theme of <i>the formal decision-making process</i> explains how the formal municipal decision-making process functions according to the	Issues for decision.	Sources of decision issues. Decision issues in the IDP.
		Process aspects of decision making.	Framing a decision issue. Routing decision issues. Item writing. Deciding on issues. Governance of decision processes. Feedback processes.

<p>interviewees. This simplified, reductionist version of a very complex phenomenon captures essential aspects of the processes and structures involved and the factors that influence the course of the decision process. This process considers the decision issues, process aspects and structural aspects of the decision process as well as contextual aspects that influence the decision process. The decision-making process normally ends with an implementation step, or a firm decision about implementation.</p>		<p>Implementing decisions. Drivers of decisions. Consultation.</p>
	<p>Structural aspects of decision making.</p>	<p>Linear decision processes. Networks of decision processes. Actors within structures. Bureaucratic structures. Voting patterns. Creative spaces. Power structures.</p>
	<p>Contextual influences.</p>	<p>Aims and objectives of stakeholders. Decision criteria. VUCA factors. Inputs from stakeholders. Value systems.</p>



**Figure P-1: Thematic map of the overarching theme of municipal decision making**

## APPENDIX Q: FIVE CASES OF COMPLEX DECISION ISSUES

The following decisions are not covered to the same level of detail. The budgeting process and the decision to build the water desalination plant in Witsand are covered in more detail. In each of the following cases a few aspects that contribute complexity to the specific decision process are examined. These cases illustrate how external factors and contingencies add complexity to decision making. The reference codes of the decisions as documented on the Collaborator data base are added below in the study in the format 'Collab 1402166' for example. (See the full list of purposively sampled decisions and corresponding Collab numbers Appendix N.)

### **Municipal budgeting perceived as a decision process**

The annual municipal budgeting process is examined as an example of a complex decision process. A councillor describes the budget process as 'the most difficult decision.' Rubin (2005:365) describes the budget process as follows:

The essence of budgeting is that it allocates scarce resources and hence implies choices between potential objects of expenditure. Budgeting implies balance and it requires some kind of decision process.

Chapter 4 of the MFMA prescribes that the annual budget must be divided into an operating budget and a capital budget. These budgeting processes are intertwined and are treated as a single unit of analysis. The MFMA also requires that the annual budget, the IDP and budget-related policies must be mutually consistent and credible. In terms of Section 25(c) of the MSA the IDP forms the 'policy framework and general basis on which the annual budgets must be based'.

This decision process is analysed in terms of the open environment and temporal framework within which budgeting takes place. The different actors and decision clusters involved in budgeting are discussed. The effects of power and influence as well as relevant boundaries and constraints are considered. The acts of balancing, approving and implementing the budget are reviewed. Findings are discussed with reference to the theoretical aspects reviewed in Chapter 3, the contextual analysis of Chapter 4 and the analysis of the municipal decision-making processes discussed above in Section 5.2. This section concludes with theoretical perspectives on the budget process.

### **Budgeting in an open environment**

Municipal budgeting takes place within an open contextual environment. (See Chapter 4.) Budgets are exposed to the natural environment, the economy, changes in public opinion, elections, other spheres of government as well as local and regional contingencies (Rubin, 2005). Chapter 4 of the MSA promotes and prescribes community participation in the processes of preparing and implementing the IDP and the annual budget. To this end the municipality has developed mechanisms, processes and procedures for community participation. According to the head of the budget office 'any resident, taxpayer, anybody having any interest in the Hessequa [area] can provide inputs to the budget... At a certain stage the ANC had a list, a famous list of seventy-five items' as inputs to the budget. Previously environmental, economic and tourism advisory committees provided inputs into the budget process. The head of the budget office gave the following example of an external influence on the budget process:

Whatever [president] Ramaphosa says in a presidential speech flows down to the provincial level and then to local government. The politicians are in contact. I tell you. They've got a speakers' forum, a mayors' forum and a municipal managers' forum where they get together. From there stuff always comes here.

Contextual factors that impact on the budget are numerous. Many of these factors are addressed in the current IDP. From a PESTLE perspective the following factors serve as examples of external influences that have a direct impact on the municipal budget: Political factors include the aims of other spheres of government and the Constitution that are expressed in terms of legislation, regulations, grants and directives. In this way 'external power and politics influence internal power and politics' of the municipality (Rainey, 2009:172). Economic factors include economic growth, inflation, employment rates, international trade agreements, oil prices and exchange rates. Social factors include poverty, inequality, income and education levels, low levels of human development, migration, unemployment and poor living conditions. Technological factors refer to factors such as free internet access, new ICT technology and other aspects of 4IR. Legislation and regulations from national and provincial government continuously pose new challenges for the municipal budget. Environmental factors specifically include the scarcity of fresh water, the risk of veld fires, rising sea levels, droughts and floods.

Chapter 5 of the MSA prescribes that planning should take place according to the principles of cooperative governance. Therefore, the IDP must complement the development plans of other municipalities, the district municipality (i.e., the Garden Route District Municipality), the Western Cape Government and other organs of state. The IDP must be compatible with national and provincial development plans and with legislated planning requirements binding on the municipality. Section 35 of the MSA describes the IDP as 'the principle strategic planning instrument which guides and informs all planning and development' including the municipal budget. Being the principle planning instrument the IDP links elements of the contextual environment with the internal environment of the municipality. The budget does the same.

This illustrates that the process to compile an IDP and a corresponding budget takes place within an open, multidimensional environment and within the dynamic municipal context as discussed in Chapter 4. Numerous interconnected feedback processes and iterative cycles co-produce the final versions of the IDP, the budget, budget-related policies and SDBIP as a mutually consistent set of documents. A spectrum of dynamic environmental factors influences the budget process and is influenced by the budget process. Such openness to the environment creates the need for flexible and adaptable budgets (Rubin, 2005:375).

### **Budgeting has a temporal dimension**

The MFMA and the complementary MFMA guide (National Treasury, 2006) prescribe the entire budget process. The MSA does the same for the preparation of the IDP which informs the budget. The budget office prepares a time schedule for the preparation of the annual budget, the review of the IDP and budget-related policies, and the preparation of the SDBIP. This integrated planning process commences in July. The planning time schedule with key deadlines must be approved before the end of August. During September, the public (i.e., residents, political parties, businesses and other stakeholders) is invited to provide inputs for the IDP and budget before the end of October. Preparation of the three-year operating budget and the review of the budget-related policies kicks off by end September. By mid-October, a concept capital budget is distributed to all five directorates for inputs. Final inputs for the capital budget and the operating budget must reach the municipal manager by the end of October. During November other spheres of government are consulted for their inputs while work on the concept capital budget continues. By early December, the budgetary committee reviews the concept capital budget before the directors integrate the concept capital budget with the concept operating budget. Policies for rates, tariffs and other service charges are also finalised in December.

During January, the final inputs for the concept operating budget and the cash flow budget are forwarded to the budget office. By mid-March, concept versions of the budget-related policies,



the operating budget and the capital budget are finalised before being linked with the IDP and SDBIP. Before the end of March both budgets in concept format, the IDP, SDBIP and all required documents are tabled before council for consultation purposes. During April the public is informed about the concept budgets, the IDP, tariffs, policies and the SDBIP. National and provincial treasuries are also consulted. In May the feedback received from other spheres of government and the public is processed. Before the end of May the final budget, tariffs, budget-related policies and the IDP are presented to the EMC and the council for consideration and approval. Once approved the budgets together with the supporting documentation are made available to the public and to provincial and national treasury. Implementation of the budget starts on 1 July every year. This budget cycle repeats itself annually. Budgets have a cyclical rhythm, and they reflect a future consciousness among decision makers (or the lack thereof).

### **Budgeting interconnects diverse decision clusters**

The budgeting process interconnects a spectrum of actors in five diverse, interconnected and interdependent decision clusters (Rubin, 2005:377-378). The revenue cluster, budget process cluster, expenditure cluster, balance cluster and implementation cluster take decisions that co-determine the final budget. At the start of the budget cycle decision making in each cluster proceeds somewhat independently until the budget process cluster has to balance the budget. An iterative consultative process, facilitated by the budgetary committee is followed to balance the budget in such a way that the aims of the IDP are achieved and the requirements of relevant policies are satisfied. The budgetary committee is chaired by the councillor chairing the finance committee in terms of delegated authority from the mayor. The head of the budget office described how this committee functions:

Most often wrestling about the budget takes place in the budgetary committee. The committee operates like a workshop without any preceding caucus meetings and items are not discussed in terms of politics. The interests of Hessequa are the main aim. But sometimes politics is also drawn into it!

The budgetary committee is responsible for the preparation of the budget and participates in all five decision clusters. This committee may consult ward committees through their ward councillors about specific matters impacting upon their wards. Accountability for the preparation of the annual budget and IDP rests with the mayor. The mayor must provide political guidance over the budget process and the priorities that must inform the budget. At the end of the budget cycle the tabled budget, the IDP and all budget-related policies and laws must be mutually consistent and credible. Within these constraints the mayor and the governing party control the allocation of funds in the budget. The mayor and the budgetary committee interact with the following five decision clusters (Rubin, 2005).

**The revenue cluster:** The revenue cluster mainly consists of officials within the directorate finances. They take decisions and provide information about the availability of limited funds from internal and external sources. The CFO provides estimates of external funding in the form of loans and grants such as Municipal Infrastructure Grants (MIG). The head of income supplies estimates of revenues from internal sources such as rates, taxes, services and traffic fines. Providers of revenue (e.g., payers of rates and taxes) have almost no power to influence decisions regarding funding of the budget. They are allowed to comment on the approved concept budget before the end of April every year.

**The budget process cluster:** The budget process cluster manages the budget process and sets the agenda and rules for discussions. The budgetary committee manages the budget process. It consists of the members of the EMC, the municipal manager, the directors and all councillors invited to participate. The committee facilitates a process to balance the budget with due consideration of the aims of councillors, officials, residents and stakeholders, the IDP, legislation and relevant policies. More specifically the head of the budget office, who is a

member of the budgetary committee, is the key official who manages the entire process of collecting and collating inputs, compiling the budget, balancing the budget, distributing the budget, and reporting on budget implementation.

**The expenditure cluster:** The expenditure cluster consists primarily of the budgetary committee members. Many expenditure decisions are informed by laws, policies and projects included in the IDP. This cluster provides cost estimates of likely capital and operating expenditures on projects and initiatives. It decides who benefits from programmes, which projects will be funded, and where cuts in expenditure will be made. Key members of the expenditure cluster are the councillors representing their wards and political parties, and the EMC who require funds for all kinds of projects within the different wards. The directors require funds for projects within their functional departments. Requests for funding for various projects for the 2020/2021 budget were received from all nine ward councillors, the mayor, deputy mayor and speaker, sport clubs, Still Bay Business Chamber, resident organisations from each town, and groups with interests in culture, archaeology, the environment and tax matters. Most of the external interest groups from the communities have no decision-making power but they may influence budget decisions.

**The balance cluster:** The balance cluster must balance revenue with expenditure. The limiting factor is always the availability of funds as determined by the criteria of the long-term financial plan. The balancing act is a complex process that has to reconcile the aims and objectives of opposing stakeholders within the constraints that apply. At the core of this cluster are the CFO and colleagues from the budget office under the guidance of the budgetary committee and the mayor. The committee scrutinises requests for project funding and determines priorities within the constraints of funding limits.

**The budget implementation cluster:** By early July, just before implementation of the budget the municipal manager signs a certificate to certify that the budget is 'locked'. The head of the budget office explained as follows: 'Whatever is approved [in the budget] is locked. No one can change it, unless [it is done] through the process that I run in my office.' The budget implementation cluster manages the flow of funds for project implementation. Key members of this cluster are the directors and the head of the supply chain. These officials 'own' their budgets and are accountable for the application of budgeted funds. The instruction of the head of the budget office to the directors is relevant here:

Sir, this budget has got nothing to do with me. The entire budget has got nothing to do with me. I only put it together. The budget is yours! You are the director. Whatever falls under you is your responsibility. It is your budget!

This means that the directors are accountable for budget implementation.

The budget office under the supervision of the CFO oversees and governs the outflow of budgeted funds. The CFO and the budget office may adjust budgeted funds in collaboration with the mayor in terms of the 'virement policy'. The 'virement policy' of the municipality provides a flexible mechanism to effect budgetary amendments within a municipal financial year with the approval of the CFO. However, no virements are permitted between the operating budget and the capital budget. Hessequa Municipality employs a technology-based financial management system that does not allow the over expenditure of budgeted funds without approval of the CFO. Interest groups play basically no role during budget implementation, but they are affected by budget implementation. The budget implementation process is governed through monthly and annual reports to the municipal council and the offices of the provincial treasury and national treasury.

## **Budgeting involves actors with diverse aims**

Various actors with diverse and clashing aims and objectives participate in the budgeting process. The aims and objectives of the major actors were discussed above in Section 4.4 and Section 5.2. The budget planning document approved for the preparation of the 2022/2023 budget year refers to the following internal actors: Political actors include the mayor, speaker, councillors from all the political parties represented, ward committees, the EMC members and the municipal council with ultimate power over the budget. Political participants strategise, negotiate, bargain and compromise to compile a budget that reflects the priorities of their wards. As a result, 'public budgets are not merely technical managerial documents; they are also intrinsically and irreducibly political' (Rubin, 2005:367).

Administrative actors involved in the budget cycle include the municipal manager as accounting officer, the CFO and the budget office, all five directors and their heads of departments, the head of strategic planning, the manager of the budget office and other specialists. The directors provide inputs regarding the funding requirements of their departments. The CFO provides information about the various revenue streams. The manager of the budget office, the CFO and the mayor facilitates the consultation and negotiation process under the supervision of the budgetary committee to balance the budget within the constraints that apply.

An important actor from the internal environment is the budgetary committee. Its membership includes the members of the EMC, the municipal manager and all the directors. Although all councillors are invited to meetings of the budgetary committee the ANC councillors do not attend them. This forum guides and manages the budgeting process. It also evaluates, moderates and integrates inputs from all the contributors in order to produce a balanced budget. At the end of the budgeting cycle the budgetary committee recommends the concept budget for approval by the council.

Actors from the external environment include the residents and interest groups from the diverse communities and towns. Among the residents are those that pay rates and taxes as well as the indigent groups that receive free services and housing. Actors from other spheres of government include the national and provincial treasury and the Garden Route District Municipality. The press, the regional radio station and social media channels play important roles as communication channels between stakeholders and the municipality during the budget cycle.

## **Budgeting, power and influence**

Public budgeting is political in nature (Rubin, 2005:368). Morgan (2006:169) remarks that much organisational politics surrounds the budgeting process and the control and allocation of financial resources. An approved budget reflects the priorities and objectives of the most powerful and most influential hierarchies of stakeholders and political actors involved. At the top of this hierarchy of power and influence are the Constitution and legislation such as the MSA, MFMA and Structures Act. These laws dictate almost every dimension of the budgeting process. The MSA prescribes 'a system of participatory governance' which encourages communities within the municipal area to participate in the preparation, implementation and review of the IDP, and in the preparation of the budget. The IDP contains the priority projects and addresses the focus areas of the municipal council. These priorities reflect the aims and objectives of the ruling coalition for their term. Legislation makes provision for a political hierarchy and an administrative hierarchy that influence the entire budget process.

At the top of the political hierarchy is the national ANC-dominated government. At provincial level the governing DA party influences the budgeting process. Within the municipality the council has the ultimate decision-making authority to approve and adjust a budget, the IDP and budget-related policies. In the Hessequa Municipality the DA-dominated council basically

rubber-stamps the recommendations from the EMC. The EMC, on its turn, reflects the wishes of the caucus of the governing coalition. Therefore, the hierarchy of political power and influence cascades downwards from the Constitution to legislation, to national and provincial government, to the council, to the EMC, to the caucus of the governing DA coalition and further down the political structures to the individual councillors, wards, voters and residents. A similar and competing hierarchy cascades downwards from the national ANC government, through provincial and local ANC structures to the local opposition party, its councillors, voters and residents.

The administrative hierarchy supports the political structures and processes to produce policies, the IDP and the budget. Budget implementation also falls within the scope of the administration. At the top of the administrative hierarchy is the national treasury, followed by the provincial treasury, the municipal manager (as the accounting officer) and the powerful and influential CFO. The CFO and her directorate play a critical role in the processes of preparing and implementing the budget. The head of the budget office has limited position power but is respected as an experienced, informed and properly qualified person with good negotiating skills and substantial personal power. This manager facilitates the process to balance the budget under supervision and guidance of the budgetary committee and CFO.

Individual actors within the communities have very limited power and influence on the budget. Organised groups such as advisory forums, business forums, sport clubs and other social organisations have much more influence than individual residents. The exception is residents with relevant expertise who may have significant influence on the municipal decision-making processes.

### **Budgeting is about constraints and choices**

Many boundaries and constraints apply to the budget process, the collection of revenues and the allocation of funds. Many choices must be made. On the revenue side the long-term financial plan limits capital funding through loans. Limits are placed on the increases of taxes, rates and tariffs in the operating budget. NERSA limits increases in electricity tariffs. On the expenditure side funds are allocated to different wards (within geographic areas), different municipal directorates and functional areas, different groups of beneficiaries (e.g., indigent groups, high-income groups and other interest groups), and to different time horizons in terms of priorities set by the budgetary committee. For all these reasons a former mayor remarked: 'Sometimes it was difficult to balance the budget while keeping everybody happy.'

The budget reflects the scope or boundaries of services and products produced. It indicates the priorities and the relative importance of budgeted items (and items not budgeted for). The DA governing coalition allocates more funds to infrastructure development in Still Bay as the main source of municipal revenue than to other communities. Previously the ANC-led council focused more on the less privileged communities. The biggest chunk of the capital budget is allocated to the directorate for technical services for infrastructure development. Trade-offs are made between maintenance of existing infrastructure and investment in new infrastructure, between the short term and the longer term, and between allocations to wards governed by ANC councillors versus wards governed by the ruling DA councillors. Limited amounts of revenues have to be allocated to unlimited demands for funding. In the end '[B]udgets reflect choices about what government will and will not do' (Rubin, 2005:367) and when they will do it. These choices have a direct impact on the act of balancing the budget.

### **Balancing the budget**

The process to balance the budget must find a balance between the estimated revenue and the planned expenditures within the constraints and limitations that apply. At the same time this iterative process must reconcile the opposing pressures, aims and objectives of powerful actors, interest groups, politicians and communities. The operating budget and the capital

budget have to be balanced simultaneously in accordance with the aims and objectives stated in the IDP and the budget-related policies. The head of the budget office explained how a balance is achieved in the case of the operating budget:

For the operating budget you have five funds [revenue sources], electricity, water, rubbish and sewage, and tax services. [During] all the years rubbish and sewage have had to balance [income and revenue]. Electricity and water must make a profit. The profit on electricity and water must be between eight and twelve per cent gross profit. At this stage rubbish is making a loss. That is why we put a fifteen per cent [increase] on it, to break even... Once you know what the income will be from electricity, water, rubbish and sewage you got a picture. Shortages [on the budget] must be made up by taxes. Of course, we have no say over electricity. NERSA decides about it.

The further balancing of the operating budget is achieved by cutting expenditures.

Balancing the capital budget requires a balance between the availability of limited funds for a certain period and the unlimited needs for funding of capital projects. Municipal savings, loans and grants from provincial and national government constitute the supply of funds. The aim is to maximise the supply of funds within the constraints of the long-term financial plan. The demand for capital funding always exceeds the availability of capital funds. This demand is made up of the cost of numerous capital projects registered by senior officials, the councillors and other stakeholders. The list of registered projects is first screened and trimmed by the budgetary committee to align the remaining prospective projects with the aims of the governing party stated in the IDP. Previously a one day '*bosberaad*' or *lekgotla* was held during which the prospective capital projects were prioritised by the councillors and senior officials. The manager of the budget office explained: 'Previously we had these '*bosberade*'... Later on, it didn't suit the politicians. That is where the clashes came.' Due to this destructive conflict the '*bosberaad*' events have been abandoned. The CFO now determines how much capital funding is available for each of the next three years and then asks the councillors and directors to provide their lists of preferred projects. In the end the budgetary committee decides which capital projects qualify for inclusion in the draft capital budget to balance it. The approved capital budget reflects, 'through the allocation of funds the ultimate desires, interests, and power of various groups within the body politic as expressed by elected legislative bodies' (Stillman, 2005:365-366).

### **Approving the annual budget**

The annual budget, together with related resolutions regarding municipal taxes, budget-related policies, tariffs, the IDP and performance measures are tabled before the end of May for approval by the council as the last step in the formal decision process. During the 2016-2021 term the opposition has always voted against each annual budget tabled at the respective council meetings. The majority vote of the governing coalition ensured approval of the budget and associated documents. Once approved the budget becomes a very important governance tool. The approved budget becomes a 'planning device' that directs what tasks government will perform, and how scarce resources will be used to realise future objectives (Stillman, 2005:365).

### **Budget implementation**

Implementation of the budget by the administration constitutes the final step of the budget decision process. The municipal manager as accounting officer is responsible for the implementation of the approved budget and budget-related policies according to the MFMA and other laws. This responsibility includes the duty to monitor and manage the revenues and expenditures.

Within four weeks after approval of the budget the municipal manager must submit to the mayor final versions of both the corresponding SDBIP and performance agreements of the municipal manager and senior officials. The mayor is accountable for the proper implementation and management of the budget and SDBIP by the administration. Budgets are used for 'internal coordination and efficiency in public administration' and they give expression to governance policy. Budgets impose control and efficiency in government (Stillman, 2005:365-366). The budget also serves as 'a powerful tool of accountability to citizens ... (and it) links citizen preferences and governmental outcomes' (Rubin, 2005:367). The approved budget is 'a legal contract that provides a vehicle for fiscal controls over subordinate units of government by the politically elected representatives of the people' (Stillman, 2005:365).

Budget implementation links decisions at higher levels with action at lower levels as suggested by Simon (1947:5). He notes that 'a hierarchy of decisions', refers to the 'purposive' and 'rational' behaviour and action that link decisions at higher organisation levels with the actual achievement of organisational goals and objectives through action at lower levels.

### **Decision to rent out Takkieskloof Resort**

The decision to rent out the Takkieskloof Holiday Resort in Riversdale illustrates how the municipality created an adaptive space in search for a solution to a controversial and complex decision issue.

For many years the Hessequa Municipality has owned and operated the Takkieskloof Holiday Resort as a public facility with a swimming pool, accommodation and associated amenities. (Data sources are tagged as Collab 1232884.) This facility was used by all members of the community, rich and poor. Entrance fees were very reasonable. The cool swimming pool was the major attraction during the hot summer days. However, the facility was operated at a huge financial loss. Due to a lack of municipal funds and insufficient maintenance the facility started to decay over the years. In addition, the resort developed a bad reputation. Therefore, a decision was taken to consider alternative futures for the resort.

Since 2017 the municipality unsuccessfully tried to rent out the facility for a period of nine years and eleven months with an option to renew the rental period after termination of the initial period. Clearly the market was not interested in the initial proposal. During a facilitated session on 19 September 2018, it was agreed that an innovative tender strategy had to be devised for this project. As a result, a new tender was prepared for a thirty year rental period that would support a sustainable investment and a favourable socio-economic impact. A two-step bidding process would apply. First, bidders would be screened. Thereafter shortlisted bidders would be evaluated based on the attractiveness of their development proposals.

On 31 October 2018 the EMC accepted the recommendations of the portfolio committee and decided as follows: 'That the Committee considers and adopts the proposed tender strategy for the Takkieskloof development as a holiday resort and subject to a land availability agreement period of 30 years.' Subsequent to this decision the intent to rent out the resort for a period of 30 years under specific conditions was made public. Interested parties, the public as well as the provincial and national treasury were invited to forward their inputs and comments to the municipality regarding the intended tender strategy. All feedback was processed and on 10 July 2019 the executive mayor signed the decision that tenders would be invited in terms of more attractive conditions.

Today the resort is operated under a new name, the Dibiki Holiday Resort with self-catering accommodation and camping sites. The SA Tourism Grading Council of SA awarded the resort a three-star grading (Dibiki, 2021).

## **By-law relating to the keeping and treatment of dogs and cats**

The decision process regarding the control of dogs and cats illustrates how legislation, consultation of stakeholders and the interests of various stakeholders, including cats and dogs have to be considered during the decision process. (Data sources are tagged as Collab 1393559.)

During the interview with the speaker on 4 September 2019 he explained the nature of a complex decision issue by using the example of drafting a by-law relating to the control of dogs and cats. Residents complained about dangerous dogs, e.g., American pit bull terriers. They complained about dog fights and drug smugglers' use of dogs for personal protection. Some other residents breed with cats and dogs or keep them as pets. During public consultations and discussions in council meetings it became clear that this issue is indeed complex. Experts had to be consulted before a by-law could be drafted. The speaker remarked: 'After discussions in the council it was decided to consult experts... We consult veterinary surgeons and the SPCA. Other municipalities are consulted... We have not decided yet, but we consult everyone.'

An academic expert advised that animal control and diseases is listed in Part A of Schedule 4 of the Constitution as a functional area of concurrent national and provincial legislative competence. Section 156 of the Constitution stipulates that municipalities only have executive authority in respect of Part B of Schedule 4 and Part B of Schedule 5 as well as matters assigned to it by national or provincial legislation. However, Section 12 of the Bill of Rights in the Constitution guarantees the freedom and security of residents in the municipal area. The expert also referred to court decisions that allowed a municipality to use its powers to create a safe local environment. The expert concluded that the municipality may draft policies and promulgate by-laws to administer its constitutional powers.

The by-law had to address the interests of a diverse spectrum of stakeholders with diverse interests. Stakeholders include dog and cat breeders, residents and their rights, drug lords, pet lovers, convenors of dog fights, different spheres of government, officers that enforce municipal by-laws, the SPCA, the Community Animal Rescue Society, the ward committees of all nine wards, as well as the animals involved with their rights. The rights of animals are still covered in the (outdated) Animals Protection Act 71 of 1962 (RSA, 1962).

During a council meeting held on 27 May 2019 the council confirmed their intention to include this by-law in the municipal code. After this meeting a workshop with the councillors was conducted. A consultation process followed. The inputs received from stakeholders were used to produce a draft by-law. An advertisement in the local newspaper invited residents to inspect and comment on the draft by-law available at all the municipal libraries and offices from 21 January 2021 until 5 February 2021. All the inputs were considered for inclusion in the by-law. On 14 April 2021 the Portfolio Committee of the directorate corporate services recommended that the council approve the draft by-law. Directly after the EMC meeting of 29 April 2021 the council approved the by-law. The by-law came into effect on the date of publication in the extraordinary Provincial Gazette of the Western Cape number 8426 on 7 May 2021.

The aim of this by-law is to protect and to promote the health and well-being of all the people within the Hessequa area. This by-law controls the licensing and keeping of dogs, the breeding and hawking of dogs and cats, the fair treatment of dogs and cats, and the humane destruction and sterilisation of dogs. It also controls the number of animals a person may keep.

This decision illustrates how diverse external and internal factors influence the decision process. Complicated (and not complex) legislation has to be considered when municipal decisions are processed. A specialist advised the municipality on the legal matters. Numerous stakeholders are involved. Included are organisations, residents, drug dealers, children, pet lovers, law enforcement officers, animals, all nine ward committees, the political structures of

the municipality and the officials. The aims and interests of all these stakeholders differ and may even be in conflict. As a result, numerous consultations with all the (human) stakeholders inside and outside the municipality were conducted between May 2019 and 30 March 2021.

In terms of the empirical findings in Section 5.2 and the framework depicted in Figure 5.6 the final decision by the council on the control of dogs and cats can be regarded as a 'good' decision that is acceptable to most of the stakeholders. The decision issue can be regarded as relatively *complex*. The final decision received the full support from the entire council on 29 April 2021 and can be defined as a *consensus* decision.

### **Decision to close and rehabilitate municipal landfill sites**

The decision regarding the future operation and closure of seven municipal landfill sites within the municipal area over the next three decades may be perceived as a complicated matter rather than a complex matter. The decision process involved illustrates that the municipality realised that the nature of the decision issue requires the inputs of experts in the field. (Data sources are tagged as Collab 1220992, Collab 1335814, Collab 1407826 and Collab 1420893.)

The operation, maintenance and management, closure and rehabilitation of landfill sites are prescribed by a large number of complicated and interrelated environmental laws and regulations. See for example the document about minimum requirements for waste disposal by the Department of Water Affairs and Forestry (DWAF) (1998). Due to the highly technical nature of the issues involved in the treatment of waste the municipality consulted environmental specialists to investigate the waste management practices of the municipality and to make recommendations about the remaining lifespans thereof.

Hessequa Municipality appointed Delta Built Environment Consultants (Delta BEC) to review the municipal financial provision for the rehabilitation, closure and post-closure monitoring requirements for the seven landfill sites under the Generally Recognised Accounting Practice 19 (GRAP 19) framework. The municipality also appointed Sillito Environmental Consulting (Pty) Ltd (SEC) to conduct external waste audits at all seven landfill sites to evaluate the facilities against the conditional requirements of the current waste management permits issued by the Department of Environmental Affairs (DOEA). The findings of the consulting firms were as follows:

- In July 2020 Delta BEC reported that the remaining lifespan of the individual landfill sites varied between five years and 38 years. They calculated the total cost of closure, rehabilitation and 30 years' post-closure monitoring of the sites at R110 million.
- In June 2021 SEC reported favourably about the administration and operational management of the seven landfill sites. However, all seven sites lacked proper ground water monitoring systems to monitor environmental impacts as well as storm water management systems. SEC recommended that these concerns be addressed and that a monitoring committee should meet annually to address deviations from standards. This committee should include stakeholders from the communities, government and affected landowners.

Earlier, in June 2019, the municipal council decided that the Jongensfontein landfill site would close for all types of waste on 1 October 2019. The council also decided that residents of Jongensfontein and other affected parties would be informed about the intention to close the landfill site through newsletters, social media and the local newspaper, the South Cape Forum. The decision was final and the affected parties would be informed about the decision. This decision closed the first of eight landfill sites in the municipal area.

Based on the report from Delta BEC the municipal council decided in August 2020 to utilise and deplete the available capacity of each landfill site before closure. Council also decided to



budget for the closure and rehabilitation of the respective sites at least three years before closure.

The decision to utilise the full capacity of each landfill site before closure and to address deviations was informed by technical experts. This decision strategy is aligned with the Cynefin framework (Snowden & Boone, 2007; Greenberg & Bertsch, 2021). The decision process involved essentially consisted of a framing phase, a window of opportunity for the council to choose among different futures for the landfill sites, an implementation step, and a post-implementation monitoring phase. In terms of the three-dimensional framework depicted in Figure 5.6, i.e., defining the nature of a decision, this decision can be categorised as a decision with a high level of acceptability, a high level of agreement and a high level of complicatedness (or perhaps a low level of complexity).

### **Decision to build a solar-driven water purification plant**

In 2017 the innovative idea of a solar-driven water purification plant for the drought-stricken coastal resort of Witsand emerged within the adaptive space (Arena & Uhl-Bien, 2018) of the Hessequa Innovation Helix (HIH). (Data sources are tagged as Collab 1077602.) The HIH was established as a joint initiative by the Stellenbosch Good Governance Forum (SGGF) (of the Stellenbosch University) and the Hessequa Municipality. The HIH was established to address some of the complex challenges faced by the municipality. This environmentally friendly desalination plant would augment fresh water supplied to Witsand by the Overberg Water Board through pipelines. Its capacity would be increased threefold by connecting the plant to conventional grid-electricity to supply electricity when the sun does not shine. Production cost of the solar-powered plant is less than a quarter of the cost of a diesel-powered desalination plant (Gosling, 2018).

Important aspects of this decision are the following. The photovoltaic solar-powered reverse-osmosis desalination plant technology is very complicated. The French government would contribute half of the capital cost provided that the municipality could confirm funding for the balance. Stakeholders included the political structures and officials of the municipality, the French government, the Western Cape Government, the provincial Department of Environmental Affairs and Development Planning, the national Department of Environmental Affairs, Cape Nature, Heritage Western Cape, the Department of Water Affairs and Sanitation, the SGGF, residents of Witsand and holidaymakers, the French technology company Mascara Renewable Water and Turnkey Water Solutions (TWS) who implements the project. The non-human stakeholders included the natural environment with its complex weather patterns and abundance of solar energy and saline water, the environmentally sensitive Breede River Estuary and the nearby ocean.

The decision processes regarding the financing, approval, construction and operation of the complicated desalination technology involved numerous stakeholders with diverse interests and aims. Complexity emerged when these stakeholders negotiated and interacted during the various stages of the decision process. The decision process started off with a memorandum of understanding between Hessequa Municipality, Mascara and TWS, facilitated by the SGGF and signed in 2017. The agreement would be governed by South African law.

On 24 October 2017 the EMC caucus decided as follows:

- (1) That the Executive Mayoral Committee acknowledges the Witsand Desalination Plant project and supports it as a pilot project.
- (2) That the Executive Mayoral Committee approves the project proceeds, subject to approval of grant funding from Western Cape Drought Relief Fund for Local Government and DTI critical infrastructure grant, as long as it has no financial implications for Hessequa Municipality.

- (3) That the Municipal Manager be mandated to sign all agreements related to the project on behalf of the Council.

This council meeting triggered numerous processes and activities. Various environmental impact assessments and technical studies were conducted. Stakeholders were consulted. Funding arrangements between the French Treasury and the Western Cape Treasury were negotiated. Engineering, procurement, commissioning and operating agreements were concluded. Permits to operate the plant had to be issued upon completion of the various studies.

On 23 August 2018 Hessequa Municipality published a very informative public notice about the project (Hessequa Municipality, 2018). The capital cost of the 100 kl per day solar plant was estimated at R8,6 million and the production cost of R6,50 per kilolitre would be much lower than the purchase price of water from Overberg Water. Production of fresh water started on 20 December 2018 and on 11 February 2019 the plant was officially opened (Johnson, 2019).