

**Perceptions of stakeholders in a water stewardship initiative:
Wolseley, South Africa**

Faith Kudzai Chihumbiri

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Supervisor: Ms. Anneke (J.I.) Muller

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DECLARATION

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ABSTRACT

In recent years, most development initiatives have been framed within the context of sustainable development. Project implementation has placed emphasis on a balanced integration of social and environmental objectives with economic development; drawing on the participation of people from different and diverse backgrounds to rally around implementing solutions to a common challenge. This approach also referred to as a multi-sectoral and multi-stakeholder participatory approach, seeks to give a broad set of stakeholders more of a say in decision-making and project implementation. It is recommended, and has been applied in addressing developmental challenges, beginning at an international level, cascading down to the national, regional and local levels.

A literature study and case study approach were used in this study. The case study explored how the multi-sectoral and multi-stakeholder participatory approach has been implemented in an initiative focused on alien vegetation clearing and water security in the Wolseley area in the Cape Winelands District Municipality in the Western Cape, South Africa. The case study was developed through engaging and capturing insights of various stakeholders involved in the initiative. A sample of these stakeholders was drawn from various stakeholder groups ranging from provincial and local government levels, the private sector, private contractors involved in clearing of alien vegetation and their employees as well as the local landowners in the Wolseley area.

Data was collected from both primary and secondary sources. Primary data was obtained through methods such as interviews, administering a questionnaire, discussions and observations, while secondary data was obtained through searching library databases and the internet for relevant government laws, policies and regulations, journals, organisational reports, brochures, and prior research carried out on the subjects of participation, sustainable development and water security. The feedback was collated into a coherent narrative of the initiative and the data was subjected to both quantitative and qualitative analysis to better understand the stakeholders' perceptions and attitudes regarding participating in the initiative.

Findings from the study showed that each of the stakeholders and stakeholder groups had different reasons for engaging in collective alien clearing of vegetation. Reasons ranged from delivering on institutional responsibilities for the government department and private sector institutions, support in realising regulatory requirements and reliance on water to support livelihood options for the land owners and a source of income and job creation for the

contractors. The contractors' employees appreciated the wages brought through having a job in the alien clearing process. However, the cumulative collective motivation was to manage and reduce the spread of alien vegetation in Wolseley, as well as contribute to an improved water security profile for the Upper Breede River Catchment. The study coincided with the period during which the Western Cape Province experienced a severe drought. To this end, the Western Cape Government identified water security as posing a major risk towards its effective delivery of services.

Some key factors and principles that were identified as contributing towards the seemingly successful engagement in this initiative included converging to address a common challenge and the prospective benefits for each stakeholder, visible project impacts, clarity of purpose, effective communication and coordination as well as engagement and consultation with land owners in the catchment through the embedded Programme Coordinator. These factors and principles need to be taken into consideration to enhance the participatory approach in management of alien vegetation in the Upper Breede River Catchment Area.

The study made recommendations on topics and key issues for further investigation to better understand factors and elements that influence perceptions and participation of stakeholders in environmental management initiatives with the intention to continuously improve the engagement process, contribute towards sustainable water security in strategic water source areas and broadly towards sustainable development.

Wolseley Water Stewardship Initiative (WWSI) was the term used to refer to the collaborative action on clearing alien vegetation in Wolseley.

Key words:

Participatory approach, environmental management, stakeholder and stakeholder groups, engagement, alien invasive vegetation, water security

OPSOMMING

In die afgelope jaar is die meeste ontwikkelingsinisiatiewe binne die konteks van volhoubare ontwikkeling opgestel. Die implementering van projekte het klem gelê op 'n gebalanseerde integrasie van maatskaplike en omgewingsdoelwitte met ekonomiese ontwikkeling; met deelname van mense van verskillende en diverse agtergronde wat saamwerk om oplossings vir 'n gemeenskaplike uitdaging te implementeer. Hierdie benadering, wat ook as 'n multisektorale en multi-belanghebbende deelnemende benadering beskou word, het ten doel om 'n breë stel belanghebbendes meer sê te gee in besluitneming. Dit word aanbeveel, en is aangewend om ontwikkelingsuitdagings aan te pak, beginnende vanaf die internasionale vlak, tot die nasionale-, streeks-, en plaaslike vlakke.

'n Literatuurstudie en gevallestudie-benadering is in hierdie studie gebruik. Die gevallestudie het ondersoek ingestel na hoe die multisektorale en multi-belanghebbende deelnemende benadering geïmplementeer is in 'n inisiatief wat gefokus is op skoonmaak van uitheemse plantegroei en water sekuriteit, in die Wolseley-gebied in die Kaapse Wynland Distriksmunisipaliteit in die Wes-Kaap, Suid-Afrika. Die gevallestudie is ontwikkel deur insigte van verskeie belanghebbendes wat by die inisiatief betrokke was, te betrek en vas te lê. 'n Steekproef van hierdie belanghebbendes is getrek uit verskeie belanghebbendesgroepe wat wissel van provinsiale en plaaslike regeringsvlakke, die privaatsektor, private kontrakteurs wat betrokke is by die skoonmaak van uitheemse plantegroei en hul werknemers, asook die plaaslike grondeienaars in die Wolseley-gebied.

Data is van beide primêre en sekondêre bronne versamel. Primêre data is verkry deur middel van metodes soos onderhoude, die administrasie van 'n vraelys, besprekings en waarnemings, terwyl sekondêre data verkry is deur die nagaan van biblioteekdatabasisse en die internet vir toepaslike regeringswette, beleide en regulasies, tydskrifte, organisatoriese verslae, brosjures en vorige navorsing wat uitgevoer is oor die vlakke van deelname, volhoubare ontwikkeling en watersekuriteit. Die terugvoer is saamgevat in 'n samehangende vertelling van die inisiatief en die data is onderworpe aan beide kwantitatiewe en kwalitatiewe analise om die belanghebbendes se persepsies en houdings ten opsigte van deelname aan die inisiatief, beter te verstaan.

Bevindinge uit die studie het getoon dat elkeen van die belanghebbendes en belangegroepes verskillende redes gehad het om betrokke te raak in kollektiewe skoonmaak van uitheemse plantegroei. Redes wissel van die lewering van institusionele verantwoordelikhede vir die

staatsdepartement en instansies van die private sektor, ondersteuning in die realisering van regulatoriese vereistes vir die grondeienaars, en 'n bron van inkomste en werkskepping vir die kontrakteurs. Die werknemers van die kontrakteurs het die lone vir werk in die uitheemse skoonmaakproses waardeer. Die kumulatiewe kollektiewe motivering was egter om die verspreiding van uitheemse plantegroei in Wolseley te bestuur en te verminder, sowel as om by te dra tot 'n verbeterde waterbeveiligingsprofiel vir die Bo-Breederivieropvanggebied. Die studie het saamgeval met die tydperk waartydens die Wes-Kaap ernstige droogte ondervind het, wat daartoe gelei het dat die Wes-Kaapse Regering watersekuriteit tot 'n risiko vir ondernemings in die provinsie verhef het.

Enkele belangrike faktore en beginsels wat geïdentifiseer is as bydraend tot die oënskynlik suksesvolle betrokkenheid in hierdie inisiatief, het ingesluit die bymekaarkoms om 'n gemeenskaplike uitdaging aan te spreek, sigbare projek-impakte, vertrouwe tussen mense in die netwerk en betrokkenheid en konsultasie met grondeienaars in die opvanggebied deur die ingebedde Programkoördineerder. Hierdie faktore en beginsels behoort in ag geneem te word om die deelnemende benadering in die bestuur van uitheemse plantegroei in die Bo-Breederivieropvangsgebied te verbeter. Die studie bied aanbevelings oor onderwerpe en sleutelkwessies vir verdere ondersoek ten einde faktore en elemente wat persepsies en deelname van belanghebbendes in omgewingsbestuursinisiatiewe beïnvloed, beter te verstaan, met die doel om die deelnemingsproses deurlopend te verbeter, by te dra tot volhoubare watersekuriteit in strategiese waterbrongebiede en ook breedweg tot volhoubare ontwikkeling.

Hierdie studie het die naam bedink en verwys na hierdie inisiatief as die 'Wolseley Water Opsigterskap Inisiatief' (WWOI).

Sleutelwoorde:

Deelnemende benadering, omgewingsbestuur, belanghebbendes en belangegroep, betrokkenheid, indringende plantegroei, waterveiligheid

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Dedication

This study is dedicated with love to Rutendo and Ropafadzo urging them to keep their dreams alive and in the words of Gail Devers, “Understand to achieve anything requires faith and belief in yourself, vision, hard work, determination, and dedication. Remember [that] all things are possible for those who believe.”

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LIST OF ACRONYMS AND ABBREVIATIONS

AISS	Alien Invasive Species Strategy
AU	African Union
BERPP	Breede River Environmental Resources Protection Programme
BFAP	Bureau for Food and Agricultural Policy
BGCMA	Breede-Gouritz Catchment Management Agency
BOCMA	Breede-Overberg Catchment Management Agency
BSP	Biodiversity Spatial Plan
BWT	Breedekloof Wine Tourism
CARA	Conservation of Agricultural Resources Act
CBD	Convention on Biological Diversity
CBI	Ceres Business Initiative
CMA	Catchment Management Agency
CMS	Catchment Management Strategy
CRELE	Credibility, Relevance and Legitimacy
CSI	Corporate Social Investment
CSR	Corporate Social Responsibility
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of Southern Africa
DEA	South Africa Department of Environmental Affairs
DEA: NRM	Department of Environmental Affairs: Natural Resources Management
DEA&DP	Department of Environmental Affairs and Development Planning
DEDAT	Department of Economic Development and Tourism
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EbA	Ecosystem-based Adaptation
Eds	Editors
EIA	Environmental Impact Assessment
IIED	International Institution for Environment and Development
EIIF	Ecological Infrastructure Investment Framework
EPWP	Expanded Public Works Programme
IDP	Integrated Development Plan
GEAR	Growth, Employment and Redistribution

GEF	Global Environmental Facility
GVA	Gross Added Value
LandCare	Western Cape Department of Agriculture
MAR	Mean Annual Runoff
MLD	Million litres per day
MMP	Maintenance Management Plan
MOA	Memorandum of Agreement
MSP	Maritime Spatial Planning
MTSF	Mid-Term Strategic Framework
NBSAP	National Biodiversity and Spatial Plan
NCCRS	National Climate Change Response Strategy
NDLRD	National Department of Land and Rural Development
NDP 2030	National Development Plan (2030)
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NEMPAA	National Environmental Management: Protected Areas Act
NGO	Non-Governmental Organisation
NPC	National Planning Commission
NRM	Natural Resource Management
NWA	National Water Act
NWRS	National Water Resources Strategy
OECD	Organisation for Economic Co-operation and Development
PAJA	Promotion of Administrative Justice Act
PBES	Provincial Biodiversity Economy
PBSAP	Provincial Biodiversity Strategy and Action Plan
PEM	Participatory Environmental Management
PAIA	Promotion of Access to Information Act
PSP	Provincial Strategic Plan
RDP	Reconstruction and Development Programme
RMMP	River Maintenance Management Plan
RWQO	Resource Water Quality Objectives
S.a	Sans annum (without year)
SANBI	South Africa National Biodiversity Institute
SAVA	South African Veterinary Association
SoEOR	State of Environment Outlook Report (for the Western Cape Province)
SDF	Spatial Development Framework

SDGs	Sustainable Development Goals
SMMEs	Small, Medium & Micro Enterprise
SPLUMA	Spatial Planning and Land Use Management Act
SWSA	Strategic Water Source Areas
TEEB	The Economics of Ecosystems and Biodiversity
TMF	Table Mountain Fund
UBCEG	Upper Breede Collaboration Extension Group
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Convention of Europe
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNON	United Nations Office at Nairobi
URV	Unit Reference Value
WC DoA	Western Cape Department of Agriculture
WCED	World Commission on Environment and Development
WCG	Western Cape Government
WfW	Working for Water
WC SWMP	Western Cape Strategic Water Management Plan
WCWSS	Western Cape Water Supply System
WUA	Water User Association
WWUA	Wolseley Water User Association
WWSI	Wolseley Water Stewardship Initiative
WWF-SA	World Wildlife Fund – South Africa

CHAPTER 1

INTRODUCTION

1.1 Introduction

Participatory approaches in implementing development projects are gaining traction, a trend that could be attributed to the many socio-economic and environmental benefits realised through applying the approach. The participatory approach converges insights from the public and private sector, grassroots level and research (Kapoor, 2001; Maina & Muia, 2007; Vaidya & Mayer, 2014). Employing a participatory approach opens projects for interfacing with various actors and collaboratively asking and answering the “Who is responsible?”, “How can we all actively collaborate?” and “What needs to be done?” questions in addressing an identified common environmental challenge (Cornwall & Jewkes, 1995: 1667 - 1676). Previously, development initiatives including those with a focus on environmental management were government led and implemented in a top-down manner; often in a way that was seen as excluding local stakeholders (Sibanda, 2005; Brown, 2014; Sterling, Betley, Sigouin, Gomez, Toomey, Cullman, Malone, Pekor, Arengo, Blair, Filardi, Landrigan & *Porzecanski*, 2017). This presented a challenge as the plans and strategies prepared by the government were not necessarily sensitive to the realities encountered by the local residents and were not responsive to local needs. The local beneficiaries, therefore, would either take part for the duration of a project while they received support from the government; after which they would resort to a “business as usual” approach to environmental resource management and use. As a result, impacts of environmental management projects were often not sustained and did not engender the desired transformation. Such situations resulted in perpetuation of the original social and environmental challenges when project cycles were completed (Gebremedhin, 2004). This gave rise to exploration of alternative multi-stakeholder approaches that place local level buy-in and participation at the heart of sustainable environmental management as a key ingredient to ensure success in project implementation (Reed, 2008; Spires & Shackleton, 2017; Reed, Vella, Challies, De Vente, Frewer, Hohenwallner-Ries, Huber, Neumann, Oughton, Del Ceno, & Van Delden, 2017).

Socio-economic and environmental benefits realised through applying a participatory approach in project implementation include empowerment and capacity building of stakeholders through sharing of knowledge and information; coherent definition of needs that consider the local context versus the broad prescription of generalised solutions, and optimum and effective resource use that brings together technical, financial and cultural resources

available in communities for environmental and resource management (Maina & Muia, 2007; Eastwood, Fischer and Byg, 2017; Reed *et al.*, 2017). Specific benefits realised as a result of implementing participatory approaches in environmental management across the continuum of aspects of the environment include, *inter alia*, promoting biodiversity, unlocking viable ecosystem-dependent livelihood options, as well as contributing towards improved water security, with the latter as a key subject of focus for this study (Mebratu, 1998; Reed, 2008; Knowles & Bragg, 2012; Nastran, 2015; Carpentier, 2016).

In addition to the aforementioned benefits, authentic participatory approaches allow for reflective, flexible and iterative engagement methods when implementing a project. Participants can continuously adapt their approaches and have the liberty to experiment in trying out new methods and learning from mistakes, while working towards finding solutions to the challenges encountered (Cornwall & Jewkes, 1995). Water and water resource management, especially in strategic water source areas and watersheds, presents opportunities for engaging a multisectoral and multi-stakeholder participatory approach, drawing actors from both the public and private sector and even private land owners to participate in sustainable environmental management (Sommarstrom, 2000).

Water is considered a key resource in supporting the sustenance of the Earth's ecosystem, survival of biotic organisms as well as support of socio-economic development (Van Wilgen & Breen, 2003; Gebremedhin, 2004; Brown, 2014; Vaidya & Mayer, 2014). As a result, management of water needs to involve different stakeholders at various levels starting from the international level, cascading down to national and local levels. The importance of sustainable water and water resource management is reinforced through its consideration in international decisions and resolutions as well as development of instruments to guide the processes. Examples of these include Goal 6 of *Transforming our World: The 2030 Agenda for Sustainable Development* (United Nations, 2012), *The Africa We Want* document which alludes to the need for Africa to have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation and the environment (African Union Commission, 2015).

In South Africa, there is legislation and strategic documents and action plans that provide guidance on sustainable use of the resource. These include the *National Environmental Management Act* (NEMA): Act 107 of 1998, the *National Climate Change Response Strategy*, *National Water Management Act* (NWA): Act 36 of 1998 and the *National Water Resource Strategy* that outline water management in South Africa. The latter further informs allocation and management of water at catchment scales within the country (DWAF, 2004; Colvin,

Cartwright, McKenzie, Dent, Maherry & Mhlongo, 2015; Ncube, 2018). A key tenet in all the aforementioned documents is the need for collaboration and active participation by citizens in managing natural resources, including water (African Union Commission, 2015), given that water is viewed as a transversal resource with profound symbolic significance in many cultures. Water also serves as a source of productive opportunities in agriculture, industry, energy, and transport. Water is also vital for the health of both people and ecosystems.

While water is recognised as a shared resource essential for well-being, enterprise and prosperity, its scarcity poses a shared risk. Population growth, expansion of the agricultural sector and industries all increase pressure on the demand for water (Machingura & Lally, 2017: 144). Uncertainties of weather patterns due to climate change and climate variability further compound the challenges of water security (Knowles & Bragg, 2012; Colvin *et al.*, 2015). This is further exacerbated by the growth of alien vegetation, particularly in mountain catchments and related strategic water source areas (SWSA) which contributes to a reduction in water that flows to rivers (Morokong, Blignaut, Nkambule, Mudhavanhu, & Vundla, 2016). Invasive alien plants are known as consumptive water users and from a study conducted in 2002 in South Africa, it was estimated that invasive alien plants reduced water flowing to rivers by an estimated 6.7% (Le Maitre, Van Wilgen, Gelderblom, Bailey, Chapman, & Nel., 2002), a figure that could have increased with the increase in the spread of alien vegetation since 2002.

Clearing of alien vegetation in strategic water catchment areas has socio-economic benefits. According to the Working for Water Programme, which spearheads initiatives on management and clearing of alien vegetation in South Africa, it has cleared more than one million hectares of invasive alien plants and provided jobs and training to approximately 20 000 people from among the most marginalised sectors of society per annum since its inception in 1995 (DEA, 2018). This contributes towards the social upliftment of those benefiting from the employment opportunities created. In terms of economic benefits, a report released by the South Africa National Biodiversity Institute (SANBI) in 2017, estimated a high cost to benefit ratios associated with clearing of alien vegetation, showing that, “for every one rand invested into biological control, economic losses due to invasive alien plant invasions of between R8 and R3 000 have been avoided” (Van Wilgen & Wilson, 2017).

Several initiatives have been established in South Africa to control and manage alien vegetation within a context of land and water management; drawing on the inextricable link between them and human communities. Examples of these include the “Working for” Programmes implemented through the Department of Environmental Affairs: Natural

Resource Management (DEA: NRM), and the water steward initiatives as initiated by WWF South Africa in partnership with the private sector. Examples at the provincial and local scale include the *Invasive Alien Species Strategy: Greater Cape Floristic Region* funded by the Global Environmental Facility (GEF) and implemented by CapeNature in the Western Cape Province, the *Umngeni Ecological Infrastructure Project*, which was successful in drawing the private sector and researchers to engage with government departments in contributing towards enhanced water security in the uMngeni Catchment in KwaZulu Natal Province (Colvin *et al.*, 2015), formation of the Ceres-Karoo Catchment Management Forum to inform access and management of water within the Ceres-Karoo Catchment area (DWAF, 2004), development of the Ecological Infrastructure Investment Framework (EIIF) and Alien Invasive Species Strategy (AISS) by the Western Cape Government (DEA&DP, 2018), the Upper Breede Collaborative Extension Environmental Group (UBCEG) active in the Cape Winelands District Municipality with a focus on promoting collaborative governance in alien vegetation clearing (Knowles & Bragg, 2012; Schachtschneider, 2016). Flowing from UBCEG is the collective action on clearing of alien vegetation in the Wolseley area (Knowles & Bragg, 2012; Schachtschneider, 2016). The initiative was referred to in this study as the Wolseley Water Stewardship Initiative (WWSI). Water stewardship refers to a process of mobilising and getting the interest of stakeholders who do not necessarily hold a government mandate to manage water resources or water infrastructure to contribute positively to water management. This can ensure that the use of water is socially equitable, environmentally sustainable and that it contributes to the economic development of an area (Colvin *et al.*, 2015).

Research indicates that there are key principles and factors that underpin and support participation of stakeholders in projects that require a participatory approach to implement (Kapoor, 2001; Sirivongs & Tsuchiya, 2012; Wachi, 2016: 150; Eastwood *et al.*, 2017). Some of these are:

- an inclusive process that considers all relevant perspectives at relevant stages of the project cycle,
- empowerment of the people's engagement so that stakeholders feel the impact of their diverse contribution in the outcome of the project;
- harnessing multiple forms of knowing including tapping into community wisdom or local knowledge;
- aiming for dialogue that delivers practical solutions to real challenges;
- good leadership;
- facilitation and the handling of workshops and meetings to ensure value for both time and money; as well as

- creating an environment that help stakeholders feel fully included and heard (Maina & Muia, 2007; Warburton, Wilson & Rainbow, 2012).

These principles inform the perceptions that stakeholders form about an intervention, perceptions of which will affect the attitudes and interests that stakeholders will invest in an intervention (Gebremedhin, 2004; Warburton *et al.*, 2012).

The WWSI provided a relevant case of an intervention that has been considered successful in mobilising buy-in from government departments, the private sector, local land owners and civil society groups to collaborate in alien clearing, rehabilitation and restoration of the riparian areas along sections of the Upper Breede Catchment area. However, limited research has been carried out to understand the perceptions of various stakeholders involved in environmental management indicatives (World Bank cited in Brown, 2014); and in the process assess the views stakeholders hold regarding the role of participatory approaches in contributing to environmental management within the context of sustainable development.

1.2 Problem statement

South Africa is endowed with an exceptional environment, inherent with biodiversity, and a suite of environment and biodiversity goods and services on offer, that could be seen to contribute towards inclusive economic growth, food security, health and nutrition (Sukhdev, Wittmer, Schröter-Schlaack, Nesshöver, Bishop, Ten Brink, Gudimeda, Kumar & Simmons, 2010). These goods and services could also be viewed as contributing towards sustainable delivery of basic services, promotion of service industries such as tourism while also increasing viable livelihood options and creating employment for the people. As multiple groups of stakeholders, including the local people provide the agency towards use of environmental resources, it is important that a participatory approach considers input from diverse groups of stakeholders is employed to ensure that an efficient and responsive management plan is in place. A case that is most pertinent is to encourage involvement of local people as key stakeholders in decision making and project implementation in dealing with environmental resources such as water and the landscape within which people live. Two aspects of the environment that will be referred to in this study are biodiversity and water.

In South Africa, environmental management is conducted by various government departments across the national, provincial and local government spheres. Each of these government departments has a mandate to manage specific aspects of the environment. Departments that deal with at least one aspect of the environment in South Africa include the Department of Water and Sanitation, Department of Environmental Affairs (DEA), and the Department of

Agriculture, Forestry and Fisheries (DAFF), while researchers, academia, private organisations, non-governmental organisations as well as land owners also operate alongside the government departments in managing aspects of the environment. As a result of the multiplicity of stakeholders in environmental management, there is potential for competing interests or conflicts to arise among the various stakeholders. Examples of such conflicts, applicable to the context of this study could be between land owners who wish to develop their land for agricultural purposes versus conservation authorities with a mandate to conserve the environment, biodiversity and water included.

Other external factors such as climate change and droughts, which neither the government nor land owners have control over, could further complicate efforts for managing the environment sustainably. A participatory approach could, therefore, provide the preferred option through which the multiple stakeholders could work together around addressing challenges to a shared issue of concern. This approach has been applied with success in an initiative in Wolseley, located in the Cape Winelands District Municipality in the Western Cape, South Africa.

1.2.1 Significance of study

Despite examples of projects that embrace participatory approaches, the researcher noted that there is limited literature focusing on aspects that consider perceptions and attitudes of stakeholders involved in implementing a project. Some of the aspects for consideration include factors that triggered the interest of stakeholders to participate, methods of engagement, successes, challenges and the manner in which an initiative was implemented. This research sought to understand the process followed in setting up a seemingly successful network active in the restoration and rehabilitation of the landscape towards improving water security in the Upper Breede Catchment, the dynamics of the engagement processes between government departments, the private sector, private contractors involved in clearing of alien vegetation, their employees and the land owners. The researcher envisaged that lessons learnt from the study could contribute towards improving designing and implementation of environmental management initiatives that rely on collaboration and participation of diverse stakeholders and stakeholder groups.

1.3 Research aim and objectives

The aim of the study was to explore and seek understanding on the perceptions, attitudes and levels of participation by a diverse range of stakeholders in collaborative participation in environmental management. This was achieved through use of a case study methodology that

had a specific focus on the clearing of alien vegetation and promoting water stewardship in the Wolseley area in the Western Cape Province of South Africa, within the broad context of sustainable environmental management. The study drew insights from the reflections of stakeholders and stakeholder groups, on what had (or perhaps had not) proven effective.

This research aim was accomplished through addressing the following research objectives and accompanying research questions:

1. Reviewing the literature for concepts and theories of participatory approaches within the context of implementing sustainable environmental management initiatives.
 - What is the understanding around stakeholder engagement and participation in the literature?
 - What are the different typologies of participation?
 - What are the perceived factors that make up an ideal participatory model?
 - What are the benefits and challenges/barriers of employing a participatory approach in implementing a project?
2. Identifying and discussing relevant key environmental policies, regulatory frameworks and legislation with regard to water resource management and alien vegetation management in South Africa, and especially how participatory approaches have been embraced.
 - What are the laws, policies and regulatory frameworks in South Africa focusing on water and environmental management, with a key focus on biodiversity and alien vegetation?
 - What provision, if any, is made for promoting a participatory approach in environmental management?
 - Is there any relationship between the policy and legislative framework and implementation of the WWSI?
3. Research, document and discuss the participatory approach as applied in the WWSI; this within the context of literature reviewed under Objective 1 and the policy, regulatory and legislative framework presented in addressing Objectives 1 and 2 .
 - How was the WWSI initiated and what factors and elements have supported collaboration in alien clearing, rehabilitation and restoration on the Upper Breede Catchment area?
 - Who are the different stakeholders and stakeholder groups involved in the WWSI?

- What are the stakeholders and stakeholder groups' perceptions, attitudes and levels of participation; and how do these compare and contrast with what is presented in the literature?

4. Making recommendations based on lessons learned from the initiative to inform continuous improvement of the initiative, as well as inform replication of the approach elsewhere.

1.4 Research design, methodologies and methods

1.4.1 Overview

The literature review focused on themes such as perceptions and attitudes about participation, rules of engagement in participation, principles of engagement, and participation in alien clearing and water security in South Africa.

A case study of the Wolseley Water Stewardship Initiative: The case-study approach is often applied in researching complex, multi-factorial and process-based interventions with the intention of improving models or decision-making processes focused on evidence-based practices (Fisher & Ziviani, 2004). Yin (2009:14) also pointed out that the approach is used in explaining causal relationships and in this research, it was useful in explaining the relationship between the perceptions and attitudes and the manner in which participation takes place among the various stakeholders involved in the WWSI. The case study design has been widely used by social scientists as it enables examination of contemporary real-life issues and provides the basis for applying concepts and theories and the extension of methodologies (De Vaus, 2001). De Vaus identified the limitations of this approach to include: firstly, the small sample size investigated may not be sufficient to conclusively establish the reality that can be generalised to a large population, intense exposure to the study of a case could potentially bias the researcher's interpretation of the findings and vital information could be overlooked in data collection, hence making the case hard to interpret. Secondly, there could have been biases in the analysis as research questions posed were not easily analysed using quantitative means, thus drawing of conclusions from the analysis becomes the subjective perception of the analyst (Fisher & Ziviani, 2004).

The exploratory research design was applied as a sub-element of the case study. This was done to better understand the different elements that have contributed to the seeming success of the participatory approach employed in the WWSI. An exploratory research design was carried out to help give a better insight of a given situation (De Vaus, 2001; Reiter, 2017). This was achieved through identifying some key elements in the literature, including principles and factors that prime a participatory initiative for success and long-term sustainability. The study

also assessed how the different elements influenced the perceptions of stakeholders involved with the initiative.

According to De Vaus (2001), an advantage of exploratory research is that it allows for flexibility and adaptability to change. While the researcher had a questionnaire to guide engagement with the stakeholders in data collection, there was flexibility and adaptability within the methodology that resulted in some changes to interviewing the participants based on their level of understanding and role played in the initiative. In addition, the flexibility allowed for the researcher to spend more time with some of the participants, especially the land owners who were very keen to drive the researcher around their property, showing the visible changes in the landscape as a result of participating in the initiative. All the data gathered served to provide a better context for understanding the case study.

Disadvantages associated with using the exploratory research design include: the qualitative nature of the information generated which could be very subjective and subject to the bias of the researcher; and the sample size may not be adequate to represent the target population. As such, the findings cannot be generalised to wider populations (De Vaus, 2001). Lastly, the research process underpinning exploratory studies is flexible, but often unstructured, leading to only tentative results that could have limited value to decision makers.

1.4.2 Data collection methods

1.4.2.1 Target population and study sample

To identify the stakeholders, an initial list of target organisations was compiled through an internet search of preliminary reports on the engagement in Wolseley. The following institutions are involved in the initiative: local land owners resident along the Upper Breede Catchment, WWF South Africa, CapeNature, Western Cape Department of Agriculture (WC DoA): LandCare, Western Cape Department of Environmental Affairs and Development and Planning (DEA&DP), the Upper Breede Collaboration Extension Group (UBCEG), Wolseley Water User Association (WWUA), Breede Gouritz Catchment Management Agency (BGCMA) and the Table Mountain Fund (TMF). The researcher also approached and introduced the intention to undertake the study to one practitioner who had shared on the initiative at a workshop, having identified him as a potential key participant.

1.4.2.2 Sampling technique

The study used the snowball sampling technique. Atkinson and Flint (2011: 329 – 333) defined it as a technique for gathering research subjects through identifying the initial subject who will

then be able to provide names and details of other actors. The identified actors will then open possibilities for expanding the web of contact and inquiry. This approach was used as the investigator was aware of the WWSI from attending workshops where the approach was presented as a successful case study. The snowball sampling also broadened reach to the network of people active in the initiative as the researcher was able to tap into the social networks of identified respondents, who were able to provide the researcher with an escalating set of potential contacts. Deliberate efforts were made to ensure that women were also interviewed, particularly from the groups in Wolseley. The researcher managed to engage a total of 18 respondents.

1.4.2.3 Data collection and collection instruments

Data for the study was collected from multiple sources, including StatsSA, direct observations, a questionnaire and discussions with a number of stakeholders involved in the initiative. Anecdotal data noted throughout the research also provided a context for the social perceptions and attitudes that have sustained stakeholders through the intervention.

A questionnaire with 61 questions (Appendix A) was the main instrument for data collection purposes. The questionnaire comprised five sections. Section A focused on the demographics, Section B focused on general knowledge on environmental management and sustainable development, Section C focused on views on participation, Section D focused on participation in the WWSI – collective action on alien clearing initiative, Section E focused on outcomes of the WWSI and Section F focused on a more in-depth understanding on the roles and responsibilities for the various institutions. The researcher realised that there were different levels of comprehension among the respondents. This was also the same for the types and levels of engagement in the WWSI. As such, the investigator decided to split the respondents into three categories, which is represented in Table 1.1.

Table 1.1: Categories of respondents and the sections addressed

Category	Classification	Sections addressed
1	Respondents from institutions who addressed all sections of the report	Section A; Section B; Section C; Section D; and Section E
2	Individuals, landowners who participate in one form or another in the WWSI	Section A; Section B; (unless they indicated lack of interest); Section C; and Section D
3	Individuals who participated in the WWSI in one form or another but had challenges in engaging technical questions	Section A; Section B; Adaptation of questions made for Section F

The time for administering the questionnaire varied from 30 to 45 minutes for those in categories 2 and 3 and 1.5 hours for stakeholders who responded to questions in all six the sections.

1.4.2.4 Ethical approvals and data collection process

The researcher obtained ethical clearance from Stellenbosch University in July 2018 and proceeded with contacting possible respondents in the first week of August 2018, seeking their interest and availability to participate in the study. The initial point of contact was the person known to the researcher from delivery of presentations on the initiative. The person recommended some people whom the researcher subsequently contacted. Respondents were contacted and the researcher personally or telephonically informed them of the recommendation without necessarily divulging the name of the recommender. This was done to protect the anonymity of other participants. In the discussion, the researcher explained the purpose of the study, foreseeable potential benefits to the individual or others as well as potential discomforts or risks of the study. All respondents were informed of their freedom to withdraw from responding to the questionnaire at no cost or penalties on their part. Upon securing interest, the researcher confirmed a date and a venue for a meeting. The researcher invited the respondent to make recommendations on whom else to contact. Some made the recommendations while others declined.

On arrival at the agreed venue, the study was described to the respondents, who were requested to sign the informed consent form (Appendix B) of which a copy was provided to them. This was followed by the discussion and engagement guided by the questionnaire. The researcher wrote down the responses. Where possible, the researcher offered soft drinks to

the respondents although in some instances, the landowners made the offer instead. All interviews and questionnaires were treated with anonymity, with no records of names kept to maintain confidentiality at all times.

All gathered data and information was kept strictly confidential and was only accessed by the researcher. All collected questionnaires were safely locked up in a cupboard and a back-up system was set up off site.

1.4.2.5 Data analysis

Data was subjected to both quantitative and qualitative analysis. Quantitative data was analysed using the statistical package Statistica 13. Qualitative data was analysed using thematic content analysis and exploratory data analysis. Thematic content analysis is the method of identifying patterns or themes in qualitative data. In using this method, the researcher identifies patterns in the data that are interesting or important and uses these to make sense of the data within a context of the research. Braun and Clarke (2006: 77 - 101) outlined the sequence of steps a researcher needs to follow when using thematic content analysis as follows: becoming familiar with the data, generating codes, searching for themes, reviewing of the themes and defining the themes. Similarly, in applying the exploratory data analysis, the researcher is required to make observations and examine records as they collect data. The researcher is then required to closely examine these records to establish common properties or issues and then merge these into concepts and generalisations about the area of phenomenon of study

To increase the credibility and trustworthiness of data for the qualitative data collection and analysis, Smith (2006) encouraged researchers to position themselves in relation to the qualitative research process through a process referred to as reflexivity. Reflexivity is a method that embraces the sensitivity to the relationship between the researcher and the research, as well as understanding how the relationship may shape the data collected, including the role of prior assumptions and experience (Smith, 2006). The study also employed reflexivity in collection and analysis of the qualitative data.

1.4.2.6 Reporting of results

The Western Cape Government is committed to promoting inclusive growth and good governance in delivery of service. It intends to achieve this working in partnership with active citizens and business partners. This is echoed in the Provincial Strategic Goals four and five, which make reference to creating a resilient, sustainable, quality and inclusive living environment through enhanced management of land, an enhanced climate change plan, and

better living conditions for all and embedding good governance and integrated service delivery through partnerships and spatial alignment respectively. Both of these goals are echoed in the design and implementation of the WWSI, with the Western Cape Government actively involved through the Department of Agriculture: Land Care Programme and the Department of Environmental Affairs and Development Planning. It is in this context that the results from the study will be made available to the Western Cape Government for consideration in informing the continuous improvement in designing resource management projects for which stakeholder engagement and participation are key elements. Results will also be shared with the WWUA and other institutions implementing development initiatives that have stakeholder engagement and participation engendered in implementation methodology.

1.4.2.7 Limitations

Projects to assess perceptions and attitude require a longer period of time for observation and data collection, to be able to capture and pick up trends. There was, however, limited time during which the project had to be completed. This could have resulted in the project making assumptions and premature conclusions that could have otherwise turned out differently, had the project been assessed over a longer period of time. To minimise errors, the research design made provision for interviews and data collection to be made from a diverse range of stakeholders who were involved in the project. Scheduling of interviews with the respondents accommodated respondents with appointments being set up at a time that was convenient for both the researcher, but more so for the respondents. The researcher also decided to travel to the project site for a week to engage with the various stakeholders in Wolseley and in the process note observations on the manner in which the respective stakeholders engage with their surrounding environment and how they participate in scheduled alien clearing activities. Despite having confirmed prior interest and availability, some of the potential respondents indicated that they had emergency situations that they had to attend to and hence, were not available to meet with the researcher during the time that she was in the area.

1.5 Chapter outline

Chapter 1: This chapter introduces and sets the scene for the research. It gives an overview of public participation and stakeholder engagements in environmental management within a context of promoting sustainable development. It also presents an overview of the global, national and regional instruments and resolutions that echo the need for stakeholder engagement and public participation in managing the environment. It then identified some of the principles that characterise participatory approaches in environmental management project implementation. It also provides an overview on the Wolseley Water Stewardship

Initiative which has been noted as a good example for collaborative action on alien clearing, bringing input from the public and private sectors, including active participation of residents in the study area in the Breede Catchment. The chapter then spells out the research aim, objectives and methodology used in undertaking the research.

Chapter 2: The chapter expands on all the points that were raised in Chapter 1. It sets out a review of the literature focused on stakeholder perceptions, stakeholder attitudes, stakeholder participation engagement and participation and stakeholder engagements in environmental management. Literature relating to principles and factors that influence and determine success when implementing a participatory approach in projects, focusing on the wise use and management of natural resources is reviewed. Key focus is on understanding the relationship between stakeholder perceptions as presented in available literature and how these influence stakeholder attitudes and participation in environmental management initiatives. Literature on the environmental challenge of alien clearing, restoration and rehabilitation of the landscape is also presented and unpacked.

Chapter 3: This chapter presents international and regional commitments, decisions focusing on sustainable environmental management paying attention to reference made to stakeholder engagement and the participatory approach as important enablers for implementation. The Chapter further presents the South African legal and policy framework relevant to water, water resource management and environmental management – with particular focus on alien clearing. These were at both the national and sub-national spheres of government. There is reference made, where appropriate, between the participatory approach in implementing projects focused on environmental management and the aforementioned policies and legislation.

Chapter 4: This chapter presents the case study. Background information relating to the geography, socio-economic status and environmental management of the study site is presented. The chapter delves into the history of activities linked to alien vegetation clearing to give the context of the “current and structured” participatory approach employed for alien vegetation clearing, rehabilitation and restoration of the Upper Breede River system. Feedback from the field work and data collection exercise is presented in the chapter as well. Information presented includes a narrative of the “current and structured” stakeholder engagement process in the WWSI and results from the data collection and engagement with stakeholders.

Chapter 5: An analysis and discussion of the results and participatory approach are presented in Chapter 5. Recommendations to improve participatory approaches in implementing environmental management related projects are also presented.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature reviewed focusing on participation and stakeholder engagement within the context of project implementation towards achieving sustainable development. Key terms such as stakeholder engagement, participation, types and levels of participation, stakeholder perceptions and attitudes as presented in the literature are also discussed. Reference is made to principles and factors considered to underpin stakeholder engagement and participatory approaches within a context of how all these elements need to come together in order to contribute towards successful outcomes. Challenges encountered in implementing the participatory approach are identified and discussed. Also reviewed in the chapter is literature relating to clearing of alien vegetation, restoration and rehabilitation of the landscape, noting how such a process contributes towards water security, addressing fire risk and social upliftment through provision of jobs and other economic opportunities in the alien vegetation clearing value chain.

2.2 Sustainable development

Sustainable development, as defined by the World Commission on Environment and Development (WCED) in 1987, is the ability of development to meet the needs of the present generation without compromising the ability of future generations to meet their own development need (WCED, 1987: XV). This could be interpreted to mean promotion of production systems with solutions that can simultaneously address economic, environmental and social challenges through contributing towards poverty alleviation, environmental improvement and social equity for the present time while also ensuring that these solutions cater for the needs of posterity (Mebratu, 1998: 501). The WCED outcome, therefore, argues for an approach to development that takes into account the relationship between environmental, economic, social and technological issues both for the current state and in the future.

The understanding of sustainable development is subject to societal interpretation, as noted by Blewitt (2008), and sustainable development and sustainability can be viewed as a dialogue of values in which different people, communities, pressure groups, institutions and government will have varied perceptions and understanding. In his book, Blewitt (2008) raised several perspectives through which sustainable development can be interpreted, one of which

applicable for this research is the perspective on systems thinking and complexity. In simple terms, systems thinking and complexity is an approach that can be used in addressing “chaotic situations” in which their processes and systems are related, yet it is difficult to delineate spatial and temporal boundaries. It is difficult to define the systems and there are numerous interconnections and dependencies among the various aspects under discussion, such that it is easy to overcome or even ignore addressing some aspects of the challenge (Richardson, 2007). Examples of issues that fit within this scope include community engagement with agricultural, financial issues or even community relationship with ecological problems. There are no conventional scientific, economic and political tools and educational programmes that can easily address these issues. Within such a context, Blewitt (2008) proposes a need to allow space for flexibility, intellectual and cultural expression when implementing initiatives in order for people to openly engage on the subject and contribute to meaningful outcomes in the way sustainability fashions their development. Sustainability could be considered as a vehicle through which the ideals of sustainable development will be realised. Sustainability could therefore be defined as the quest to improve the quality of peoples’ lives and their surroundings to prosperity without destroying the life-supporting systems on which current and future generations of humans depend (Mebratu, 1998: 139).

2.3 Sustainable development and stakeholder engagement

Stakeholder engagement and public participation are important elements to inform designing and implementation of environmental management interventions aimed at achieving sustainable development (Du Plessis, 2008; Durham, Baker, Smith, Moore & Morgan, 2014; Gupta, 2014). This, given the symbiotic relationship that exists between people and the environment (i.e. people need goods and services from the environment to survive and the existence of a functional environment is dependent on implementing good environmental management practices on the part of the people). Effective stakeholder engagements and participation in informing development that is sensitive to the planetary thresholds has become very urgent, given that the 21st Century is being recognised as the Anthropocene – an era in which human activities are increasingly modifying the environment resulting in immense pressure on the environment and its diverse ecosystems (Cilliers, 2015:1).

Stakeholders are defined as people and/or organisations with a vested interest and are involved in or are affected by an action or policy. The definition could also be expanded to incorporate those whose actions could directly or indirectly influence the decision-making processes (Reed, 2008; Brown, De Bie and Weber, 2015). Stakeholders provide information on the natural environment, and on political, economic and social context of potential impacts

likely to occur because of an intervention. A broader definition of stakeholders includes policy makers, planners, managers, representatives from the different spheres of government, private sector, academia, non-governmental organisations, civil society, community members and private landowners (Mendoza & Prabhu, 2009).

On the one hand, Mendoza and Prabhu (2009) qualified primary stakeholders as those directly affected whether positively or negatively by the issue or intervention. In environmental management, local residents could be placed in the category of primary stakeholders as their actions have a direct bearing on the state of environmental resources and goods and services around them. On the other hand, a secondary stakeholder refers to those who have some intermediary role, directly or indirectly, in an issue at hand (Mendoza & Prabhu, 2009). Government departments, the private sector based outside the target geographic site could, therefore, be identified as secondary stakeholders. While community members and private landowners have been acknowledged as primary stakeholders, they have not always received adequate attention from the government in implementing initiatives. Reasons that could be attributed to limited engagement with these stakeholders or stakeholder groups include one or a combination of the following: lack of funds, lack of time, and lack of interest or limited knowledge in the subject (Nastran, 2015).

Stakeholder engagement refers to active involvement and participation of others in some or all aspects of the project through being requested to voice their opinions or views; hence a process that takes into account concerns and issues raised by these people (stakeholders) (Durham *et al.*, 2014; European MSP, 2018). Participation also has been defined as human engagement and a process of getting people's input in implementing projects or programmes (Gupta, 2014; European MSP, 2018). From these definitions, one could infer that stakeholder engagement may not necessarily translate to primary stakeholders influencing decision making and ways of implementation, while participation could imply stakeholders actively contributing to decision making and taking part in project implementation. This view is further supported by Piccolotti and Jorge (2008) who provided a more holistic definition of participation as the "real involvement of all social actors in social and political decision-making processes that potentially affect the communities in which they live and work.

Despite the lack of convergence in the definitions for participation and stakeholder engagement, "it has been unanimously accepted that people's participation is essential to the sustainability of developmental initiatives" (Sibanda, 2005; Aregbeshola, 2009; Rode & Burdett, 2011). As a result of the close relation between the two terms, this study used participatory approaches as a term encompassing both stakeholder engagement and

participation. An underlying tenet in both definitions is the concept of people, either interested or affected, actively taking part in various stages of project implementation in order to promote sustainability. Examples of other terms that have been used in the discourse closely related to the two phrases include polycentric governance, collaboration, cooperative governance, landscape network platforms, partnerships and community-based approach.

In recent years, there has been a shift towards more inclusive and bottom-up engagement that acknowledges the important contributions made by local stakeholders towards inclusive and sustainable decision making processes that present locally responsive solutions (Alvares, 2014). Projects that embrace such a participatory approach driven from the bottom upwards have registered success in terms of implementation and achieving set goals in comparison to those administered by government – adopting a top-down, legislative-bound manner. In a report by the Asian Development Bank in 2004, it was presented that top-down government interventions often standardise project interventions, ignoring the fact that locally produced services and requirements are discretionary by nature and effective delivery requires decisions to be made by the local people on the basis of imperfect information, which is not always available at the government level (Asian Development Bank, 2005:1). Such findings motivate for a participatory approach led from the bottom up. In addition, an inclusive stakeholder engagement and participatory approach enables ownership of the process and contributes towards empowerment of various stakeholders, as well as building equity or ownership of the outcome. The combination of all these elements serve as a foundation for promoting sustainability, effectiveness and efficiency in project implementation (DEA&DP, 2017). Freeman and Soete (2009) highlighted the strength of the participatory approach in environmental management initiatives as being able to draw insights from the local stakeholders and bringing them along on the journey to develop solutions that promote and engender innovation and sustained transformation in environmental management.

In terms of implementation, Berkes (2009) and Patterson (2016) state that a participatory approach involves power-sharing whereby certain competencies of environmental management are devolved from the central government departments to sub-national government levels as well as promoting private sector and local residents' involvement in decision making. This approach therefore contributes to institutional building as there is horizontal and vertical interaction among stakeholders, often supported with knowledge sharing on the subject at hand. The beauty in this arrangement is the empowerment of community members and society with regard to processes of engaging government and government agencies while through social learning, the government is able to earn insights

into the challenges or issues of priority from the people whom they lead (Berkes, 2009; Patterson, 2016). In addition, an institution is in a state of constant revitalisation, hence open lines and effective communication ensures that it remains relevant in addressing issues that may arise.

Success has also been noted for participatory approaches that were sensitive, considerate to the values and opinions of the people in a group, as this was viewed to have nurtured an environment for safe communication, and was able to harness input from the diversity of stakeholders (Sommarstrom, 2000). This is so as stakeholders, including the local people feel that their views are valid and influence decision making. The Lotus Gyroscope (see Figure 2.1) illustrates the manner in which an ideal participatory process is seen to promote both informal and formal communication, hence contributing to incremental innovation and change with positive impacts (DEA&DP, 2017). Moreover, in its draft Position Paper on Innovation, DEA&DP (2017) further presented that, when it comes to mobilising the multisectoral and multidisciplinary approach to project implementation, a lot of informal communication and information sharing is required with just a little formal communication according to mandate, authority or qualified competence in order to achieve optimal inclusive development, with local stakeholders spearheading the process. All these forms of engagement contribute towards building the strength of an established network.

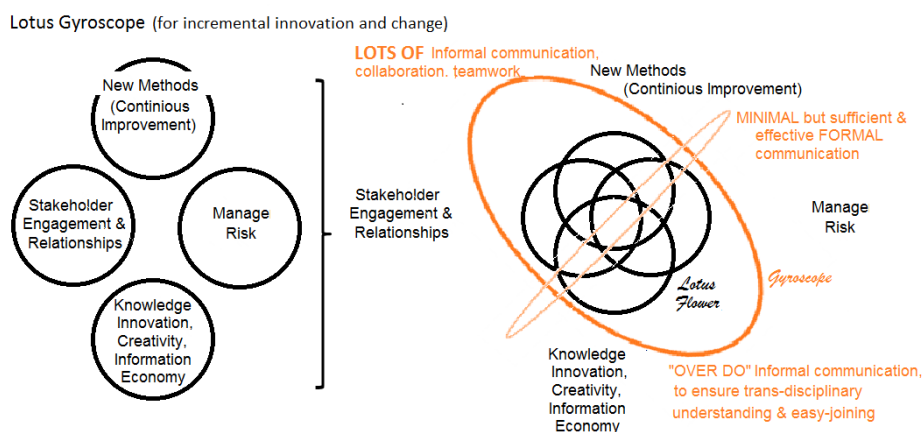



Figure 2.1: Lotus Gyroscope: Illustrating the mode through which a lot of informal and minimal formal communication in a participatory and inclusive approach contributes towards innovation


(DEA&DP, 2017)

2.4 Typologies of participation

While the participatory approach encompasses communication and inclusive stakeholder engagement processes, it is important to point out that there are different types and levels of participation that stakeholders get exposed to. The type and level of participation for an individual could also vary, depending on the phases or stages a project goes through. These different ranges will be referred to as typologies of participation. Examples could include taking a leadership position, contribution to the project either in cash or in kind, working with other stakeholders towards achieving a set goal or even attending and participating in workshops and meetings for a project. One attempt at presenting these various forms of participation was made by Arnstein in 1969, a process that was revisited by Pimbert and Pretty who presented a ladder depicting levels of activity for a project at various rungs on a ladder (Pimbert & Pretty, 1997). Juxtaposed in Table 2.1 below, it is shown that there is an increase in the levels of engagement from the lower levels upwards. Although the two studies refer to the levels of participation in different terms, one is inclined to draw a conclusion that the lower levels in the table represent a non-desirable form of participation given that there is limited empowerment of those in positions of less authority. As a result, there may be limited levels of interest and buy-in to participate with detrimental effects of the practice over time on sustainability. The levels in the top rungs of the table suggest that there are more deliberative and co-productive modes of engagement, which could lead one to conclude that impacts of such approaches engender higher levels of participation, buy-in to the project and thus promote transformation as the participants get empowered in the process.

Table 2.1: Typologies of participation

8 Typologies of Participation as presented by Pimbert and Pretty		Empowerment and level of participation in project implementation	Rungs on a Ladder of Citizen Participation as proposed by Sherry Arnstein		
Self-mobilisation/ active participation	People participate by taking initiative independent of external institutions to change systems. Such self-initiated mobilisation and collective action may or may not challenge existing distribution of power and wealth.		Citizen control	Demonstrates a situation in which there is no one with absolute control. All participants are in charge of policy and managerial aspects	Degrees of citizen power
Interactive participation	People participate in joint analysis, which informs action plans and formation "of new local groups or the strengthening of existing ones. (As such, the people are empowered to take control over local decisions, as the people have a stake in maintaining structure)".		Delegated power	This level also entails a degree of negotiated entitlements in which all participants have dominant decision making authority. Powers delegated could include policy making, hiring and firing, issuing of sub contracts for buying or leasing	
Functional participation	People participate by forming groups to meet pre-determined objectives related to the project. (there is an internal drive among the participants to mobilise resources internally so that		Partnership	This level represents a redistribution of power and often entails negotiations and deliberations between the diverse range of participants. They usually agree to share decision making responsibilities often through structures that include joint policy boards, planning committees.	

	the initiative becomes independent of external support with time).			Power dynamics are neutralised with all participants considering each other as equals.	
Participation for material incentives	Through providing resources, for example labour, in return for food, cash, or other material incentives- often without taking part in the process of learning or receiving training or competence building from knowledgeable experts in environmental management.		Placation	At this level, participants have some degree of influence to the decision making process and or outcome of the intervention. An example would be placing a few handpicked participants representing those with less power while the elite hold the majority. As a result, those less powerful can be easily out voted in the decision making process.	Degree of tokenism
Participation by consultation	People participate by being consulted, and the admin listens to their views. However, the admin defines both problems and solutions, and may modify these in the light of people's responses. (There is also exclusion of engaging stakeholders who are deemed not to possess relevant information being asked for. The admin and other professionals are not obliged to take on board people's views in making decisions for the initiative).		Consultation	Arnstein refers this as a window dressing ritual especially when consultation is carried out without assurance that participants' concerns and ideas will influence the decision making processes and outcome of the intervention.	
	People participate by giving answers to questions posed by extractive			There is usually a one way flow of information - from those in power to	

Participation in information giving	project managers using questionnaire surveys or similar approaches. (There is exclusion of engaging stakeholders who are deemed not to possess relevant information being asked for. People do not have the opportunity to influence proceedings of the initiative).		Informing	purported beneficiaries. Those with less authority have little opportunity to influence the programme/project design.	Non participation
Passive participation	People participate by being told what is going to happen or has happened. (This is an announcement by an administration or project management without listening to peoples' responses).		Therapy	Assumption made is that participants are not knowledgeable hence participant engagement takes place in order to "educate participants" instead of addressing the key underlying issues of the proposed intervention.	
			Manipulation	Participants are placed top rubber stamp ideas and proposals by those in positions of power. There is no asking of the important question on their role in project implementation or the impact of the initiative to their lives	

Adapted from Pimbert & Pretty (1997) & Arnstein (1969)

However, there are limitations in assigning names and categories to the different types/levels of participation as presented in Table 2.1. Such a classification method assumes a simplified view and yet in reality there are a lot of complexities. The stakeholders are not homogenous. Each group has a number of variations in perceptions, overlaps, as well as competing vested interests for a given project (Arnstein, 1969). Secondly, in reality, it is difficult to place people in discreet categories as an individual could find over a hundred ranges of gradation that be applied to them for a given project. Factors that could affect the spot at which a stakeholder or stakeholder group finds themselves at a given time, among others include sex, age, level of education, season of the year, or even level of superiority within the ranks of employment.

Reed *et al.* (2017) produced a more recent rendition of typologies, building on the two mentioned above. Results from the study identified and presented a theory that can be generalised across the gradation of the types of engagement in contrast to presenting how one type of engagement operates vs. another. The 2017 study makes use of the metaphor two wheels, one inside the other, as presented in Figure 2.2 below. These two wheels can be spun in either direction to create different combinations of types of participation that may occur at a given time, depending on the group dynamics for those involved in a project (i.e. who is leading or initiating and who are the beneficiaries of the intervention).

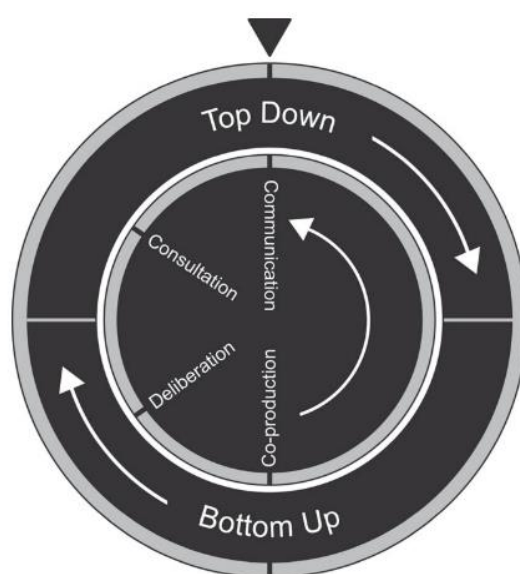


Figure 2.2: The Wheel of Participation

Source: Reed *et al.* (2017:7)

The “Wheel of participation” defines different types of stakeholder and public engagements. It combines four modes of engagement namely co-production, deliberation, consultation and

communication, depending on which one is applicable at the given point of project implementation (Reed *et al.*, 2017: 6). These four are combined with either the top-down or bottom-up agency, again depending on who is initiating or driving a process. It consists of an inner and outer wheel that can be spun in different directions to create different combinations of agency (who initiates and leads the process) and mode of participation (from one-way communication to co-production). Results from the different combinations identify four types of engagement: top-down one-way communication and/or consultation; top-down deliberation and/or coproduction; bottom-up one-way communication and/or consultation; and bottom-up deliberation and/or coproduction. Rather than always aiming for bottom-up and co-productive types of engagement, “the wheel of participation can be used to match the appropriate type of engagement to the purpose and context in which engagement is needed” (Reed *et al.*, 2017: 7).

In a context of inclusive stakeholder engagement and participation, the “Wheel of participation” presents the flexibility of various combinations hence offering a more comprehensive, and useful alternative to the “typologies as listed in Table 2.1. The non-fixed typologies help in assigning a more correct type of engagement within a project in line with a given context and purpose. One is able to infer what happens in each type of engagement without necessarily assigning reasons that may not be appropriate for the given context (Reed *et al.*, 2017).

Possible options of the type and level of participation as proposed by Reed *et al.* (2017) based on spinning the wheel of participation are explained in the section below:

1. **Top-down one-way communication and/or consultation:** In this instance those in position of authority initiate and lead the engagement processes without necessarily relinquishing authority to other participants in positions of lower authority. This form of participation is ideal when it is critical for communicating a decision that would have already been made to those likely to be affected by the decision (affected parties). This could be a decision made by government during emergency situations, which if not urgently addressed could negatively affect the people and as relevant for the case study is implementation of an emergency drought mitigation plan.
2. **Top-down deliberation and/or coproduction:** There is engagement between those in a position of authority and other participants in efforts to ensure that those in positions of authority get a better understanding of the perceptions of the other participants. This could be referred to as a type of co-production engagement. It is important to note that this type of engagement ensures that a decision and how it should be implemented is jointly developed and owned by teams, those in position of

authority and the participants. However, the responsibility for implementation still rests with the person with the mandate to do so. An example relevant for this study is around decisions on scheduling of when to clear alien vegetation as well as the follow up processes. Responsible government departments would have to liaise with the contractors and the land owners in preparing such a schedule. The departments still retain the responsibility of reporting on the area of land cleared of alien vegetation through the relevant national reporting platform.

3. **Bottom-up one-way communication and/or consultation:** This refers to a situation in which the people at the local/grassroots level initiate an engagement and drives the engagement process; usually under the guise of community groups and/or support from civil society. Alternatively, this type takes place in cases where the public mass mobilises public opinion to overrule previous top-down decisions. The individuals driving such a process usually consult with the other participants to better understand and represent their views, thus increasing their capacity to influence decision-makers or overturn decisions. An example would be local residents mobilising to indicate an amount that they are comfortable paying to access services delivered by either the government or another responsible private institution.
4. **Bottom-up deliberation and/or coproduction:** In this case, engagement is initiated and led by stakeholders and/or the public. There is usually a two-way discussion regarding the direction that the planning or decision-making process needs to take. To this end, implementation may be by a single or a small group of stakeholders based on knowledge gained through the engagement process, or the “decision may be co-produced, owned, and implemented by the whole group” (Reed *et al.*, 2017: 5). An example would be identifying finance as a limiting resource to effective clearing of the alien vegetation in an identified catchment area. The various stakeholders, both from the public and private sector including the land owners, explore ways through which they could leverage available financial resources and being open to exploring innovative finance mechanisms or stakeholders volunteering resources in order to meet the financial target as agreed upon for effective clearing processes.

These four categories also support research on the “invited and invented space of participation”, where Brock, Cornwall and Gaventa (2001) differentiated between top-down participation in “invited spaces”; where governments “allow” people to participate, requiring them to follow set processes to reach a predetermined goal, versus bottom-up participation in “invented spaces”, where the local stakeholders and communities claim their own opportunities and spaces to be part of the engagement process towards developing and

implementing a solution to an identified challenge. There is similarity that can be drawn between co-production and the “invented spaces” as there are attempts at promoting authentic participation from all stakeholders in the decision-making and implementation process. This approach has been noted to promote stakeholder and stakeholder group buy-in in projects and associated processes compared to the options where stakeholders are simply drawn in to follow predetermined processes to endorse pre-set goals.

Having identified the various typologies associated with participation in an intervention, the following section identifies and discusses other circumstances that influence the views that stakeholders form on an initiative.

2.5 Stakeholder perceptions and attitudes

People’s perceptions and attitudes, particularly of local residents involved with the intervention, play a critical role in contributing to the long-term viability of the engagement processes and reaching the end goal. Perceptions on the one hand are defined as people’s values and beliefs as informed by their past experiences and culture; often with the perception influencing how one engages and makes decisions as well as determining the levels of interaction with an entity (Xu, Chen, Lu & Fu, 2006; Vanclay & Da Fonte, 2011). According to Xu *et al.* (2006), there are several factors contributing to the manner in which people form perceptions. This could be influenced by views one may have on an intervention, the manner in which one gets an awareness or information regarding an initiative, the institutional setup and existence of a certain legal and policy framework within a given area, costs and benefits that the intervention will likely have for the individual or the collective, or their current or prospective livelihood reliance on a proposed intervention. Attitudes, on the other hand, are the positive or negative evaluation one makes towards a certain entity or intervention at hand (Dhanda, 2015). As such, attitudes could be viewed as the outward expression of the perception formed by an individual towards an intervention. Positive perceptions and attitudes do not necessarily translate to positive behaviour by the local residents, according to Dhanda (2015) citing Ajzen and Fishbein (1980). However, they can lead to a propensity to adopt alternatives for a sustainable and desired long-term impact.

2.6 Engagement processes

In the participatory approach, participation and the processes of stakeholder engagement are usually carried out and governed by the laws for the given states or countries. The approach could take the form of representation of the public by selected or elected people in public meetings, public commenting following press notices with all these options requiring some

form of institutional arrangement or enabling tools in place to ensure engagement, surveys, interviews and even through participating in citizen science projects that are aimed at involving lay stakeholders to contribute towards generating scientific information relevant for decision-making (Danielson, 2015: 141).

Interventions that have prioritised transparent participatory processes encompass views from diverse stakeholders in implementing development projects (Sommarstrom, 2000). This is so as the planning and implementation benefit from the wisdom of local or indigenous knowledge and history of place that filter through the project design (Vanclay & Da Fonte, 2011). Such an inclusive stakeholder engagement and participation approach deepens social capital through promoting social learning as different stakeholders bring different knowledge, varied expertise and experiences to the project (Reed, 2008). Social capital is a term used to denote those relationships by which groups and individuals communicate, network, build trust, enter into dialogue, resolve conflicts, identify and solve problems and realise collective and individual potential as agents of sustainable development (Blewitt, 2008: 78). The less restrictive nature of engagement could also benefit from stakeholders volunteering their services and/or resources into project implementation. According to Vanclay and Da Fonte (2011), a project that employs the participatory approach is primed for better performance and impacts responsive to the given context, given that:

- Local people/communities have more say in decisions, they become energised to contribute, the project leverages and benefits from the social capital provided by the community and overall, the project benefits are maximised;
- The private sector improves relationships with the local communities. Good relations help the private sector to avoid making costly mistakes in their operations;
- Government as a competent authority gets better informed regarding issues on the ground and is better equipped to make decisions.

Employing a participatory approach also promotes accountability of those in power in addition to providing space for creating shared understanding and clarifying concepts for an intervention (Gupta, 2014). This notion is supported by O’Riordan through his research carried out in 1991, which concluded that “successful environmental policy has been linked to the notion of concerned citizens, coupling individual action to institutional change in the name of environmental protection” (O’Riordan as cited in Kapoor, 2001). In addition, it has been argued that an open engagement process to addressing environmental challenges can lead to reduced conflict among the stakeholders, contribute towards building trust as well as promote knowledge sharing and learning among stakeholders and the public sector, who in turn are

inclined to support project goals and implement decisions in the long term (Reed *et al.*, 2017). This could be attributed to having a situation through which different stakeholders are able to converge around a common understanding, interest or threat; and in using their perceptions and “sense of place”, inform or co-development a solution that is responsive to the collective issue of concern (Reed, 2008, Vaidya & Mayer, 2014; Virapongse, Brooks, Metcalf, Zedalis, Gosz, Kliskey & Alessa, 2016).

Borrini-Feyerabend, Pimbert, Farvar, Kothari and Renard (2004: 348) raised a principle that could complement and give authority and legitimacy to the initiatives driven from the bottom-up. The authors make reference to applying the principle of “subsidiarity”, i.e. allowing the devolution of natural resource management authority and responsibilities at the lowest effective level. This requires constitutions and basic laws that recognise as active participants with a stake in the development process those people conventionally recognised as beneficiaries or recipients or end users of the policies and programmes.

For people to be able to engage meaningfully in a subject, elements of empowerment and capacity building need to be embedded within the participatory engagement process (Fish, Burgess, Chilvers, Footitt, Haines-Young, Russel & Russel, 2011). In other words, an inclusive stakeholder engagement needs to consider and have relevant actors including some with the requisite expertise and experience to facilitate learning and build the capacity of those with less knowledge and understanding of the issue at hand; thus reducing the marginalisation of the minority and vulnerable groups within the formation (Reed, 2008). Through capacity building in project implementation, the less knowledgeable and vulnerable members feel empowered to contribute to the discussion and decision making process in a manner most likely to result in realising solutions that will improve the adaptive capacity of the community to the challenge at hand (Fish *et al.*, 2011). Adaptive capacity has been used mainly within the climate change context to mean the general ability of institutions, systems, and individuals to adjust to potential damage, to take advantage of opportunities, or to cope with the consequences (Millennium Ecosystem Assessment, 2005).

Power dynamics, the values of participants, and their epistemologies; the way in which they construct knowledge and which types of knowledge they consider valid also play an important role in influencing success or lack of engagement in a project. According to Reed *et al.* (2017), poor management of power dynamics is one of the major reasons for engagement failing to deliver outcomes. Professional facilitation and mediation can significantly reduce the likelihood of conflict and, where conflicts have already started, can help reduce or resolve conflicts. It is necessary to consider “that the engagement process ensures power dynamics are effectively

managed, so that the value of every participant's contribution is recognized and everyone is given an equal opportunity to contribute" (Reed *et al.*, 2017: 13).

2.7 Reasons for participation

As with the challenge of the lack of universally recognised definitions for participation and stakeholder engagement, there are no silver bullets or one-size-fits-all approaches with regard to stakeholder composition and implementing through participatory approaches (Enserink & Monnikhof, 2003). Acknowledging these complexities, there are several reasons for stakeholders to form groups and work together. Some of these reasons include:

- Stakeholders converging around a defined situation with an intention to address an identified pre-defined project objectives; a decision made through a participatory process stands a better chance of mobilising and getting public support and thus raises chances of being implemented with limited risk of controversy and conflicts taking place (Danielson, 2015).
- Stakeholders coming together to respond to a specific problem that could have arisen (such as to address weather or climate-related threats such as drought, flooding, sea storm surges) (Sterling *et al.*, 2017).

From an environmental management viewpoint, there are additional factors that trigger an interest from various stakeholders to participate in managing various aspects of the environment. In the research focusing on communities as institutions for natural resource management, Murphree (1991) mentioned some reasons for stakeholders opting to collaborate in an intervention on managing the environment which could be informed by one or more of the following:

1. Self-development value: Through participation, one can build connections to the community and improve one's understanding of the world through discussions with others. Related to self-development are prospects of self-development for communities (Danielson, 2015). The people's improvement of livelihood options or prospects for economic security could be directly linked to certain conditions prevailing in the environment. As a result, the local people with the support from other secondary stakeholders will mobilise and put in place systems to ensure the environment continues to provide the necessary goods and services. As relevant in this study, most land owners in the case study area are farmers, hence the issue of water security for their agricultural production is fundamental to supporting farming.
2. Alternatively, people could be deriving indirect benefits from maintaining and managing the environment for example through being employed to manage and/or enhance

some aspects of the environment. This could be applicable to contractors involved in clearing of alien vegetation and their employees. Alternatively, the government or the private sector could consider collaborating on an initiative in order that they can discharge and report on a mandate. As such, they may not necessarily be direct recipients of the improved landscape or environment being managed.

3. Because environmental degradation is perceived to be threatening, either to life-sustaining processes (e.g. pollution, soil erosion) or to peoples' aesthetic values. People would therefore mobilise to address the common challenge that threatens their healthy survival and discharging of day to day duties.

Murphree (1991) further introduced the notion of cost when he proposed that “people seek to manage the environment when the benefits of management are perceived to exceed its costs” (Murphree, 1991: 2). The notion was supported in a research study by Sibanda (2005) who argued that collaborative management happens when the stakeholders perceive the benefit of engaging in an environmental management initiative to be worth the costs especially if they have to meet the expenses and that “resource management without the resource use is likely to be futile”.

2.8 Principles and rules of engagement

There are a number of principles, at times referred to as “rules of engagement” that underpin stakeholder engagement processes and the participatory approach. These are important to ensure that the group remains focused on the envisaged goal. The section below discusses some of these principles.

To begin with, it is important that interests of potential stakeholders, benefits that they may receive, and contributions to be made to an intervention, be put on the table upfront to ensure that relevant interested and affected stakeholders are part of the engagement (Sterling *et al.*, 2017). Equally important is to agree and decide upfront on the desired outcome of the engagement, and the duration of the engagement, as some groups may need to be in place much longer while others will need disbanding when the solution to the shared threat or challenge have been implemented (Durham *et al.*, 2014:11). This way, it becomes easier to manage expectations of the participatory process as stakeholders with views that are not aligned with the goal of the intervention can be identified and advised of the goal early in the engagement process, thus mitigating chances of stakeholder conflict as the project unfolds (Volger, Macey & Sigouin, 2017). Volger *et al.*, (2017) also pointed out the importance of stakeholders understanding before the start of the project of how their engagement process fits into the existing governance landscape in line with the identified needs or themes to be

addressed in order to manage and minimise instances of conflict among the stakeholders when a project is implemented.

Additional principles that need to be considered for participation and carrying out stakeholder engagements include credibility, relevance and legitimacy (sometimes referred to as CRELE) (Durham *et al.*, 2014), including all relevant perspectives at relevant stages of the project cycle, harnessing the multiple forms of knowing including tapping into community wisdom or local knowledge, good leadership, facilitation and the presentation of workshops and meetings to ensure value for both time and money, creating an environment that helps stakeholders feel fully heard (Durham *et al.*, 2014). Warburton *et al.* (2012), in support of Durham *et al.* (2014), also added the following to the list of aforementioned principles: integrity of people facilitating the intervention, inclusion and involvement of a diverse range of stakeholders, clear purpose and visible positive impact of the intervention as well as open consultation and deliberation on the project. These underlying principles inform the perceptions that stakeholders form of an intervention, perceptions of which will affect the attitudes and level of interest that stakeholders will invest in project implementation (Gebremedhin, 2004; Warburton *et al.*, 2012). Table 2.2 identifies some principles identified from the literature that are important to support stakeholder engagement processes.

Table 2.2: Principles important to underpin stakeholder engagement processes

Principle	Explanation and supporting factors	Source
Credibility	<p>Refers to the perceived quality and validity of the stakeholder engagement process as well as that of people involved in facilitating the process.</p> <p>A credible stakeholder engagement process would be expected to have clear objectives, use the most appropriate people with the relevant knowledge and expertise in the subject at hand.</p> <p>Longevity is also a key consideration thus making sure an institutional memory base is maintained as the project is being implemented.</p>	(Durham <i>et al.</i> , 2014)
Relevance	<p>Refers to the usefulness of the engagement process and its outcomes and how closely it relates to stakeholders and researchers' needs, in responding to the identified need. Relevance also considers appropriateness of language used to address stakeholders across the board as well as the timely scheduling of engagement activities.</p> <p>Furthermore, it also speaks to either the process of engagement – convening a group of people driven by a belief in looking for solutions to a common challenge – or the outcomes of the engagement, and the ability of the process being adaptable to changing circumstances, all of which can enhance relevance.</p>	(Durham <i>et al.</i> , 2014)
Legitimacy	<p>Refers to the perceived fairness and balance of the stakeholder engagement process as well as addressing a real need on the ground. Legitimacy is important in cases where conflict may occur. A clearly stated, appropriate and agreed stakeholder engagement process, along with appropriate methods and defined goal can help manage conflict and dissent. In addition, stakeholders need to feel confident that their interests have been taken into account appropriately. Employing unbiased facilitators to help run engagement activities can also help in this regard.</p>	(Durham <i>et al.</i> , 2014)
Integrity	<p>Refers to openness and honesty about the scope and purpose of engagement with a well-articulated outcome to all involved stakeholders.</p>	Derived from Brisbane Declaration cited by (Volger <i>et al.</i> , 2017)
Inclusion and involvement	<p>Refers to the opportunity for a diverse range of values and perspectives to be freely and fairly expressed and heard as well as the ability of the project to work directly with interested third parties throughout the project lifecycle to ensure that concerns and aspirations are understood, considered and, where appropriate, incorporated into decision making.</p>	Derived from Brisbane Declaration cited by (Volger <i>et al.</i> , 2017)
Purpose and impact	<p>Refers to having sufficient and credible information for dialogue, choice, and decisions; and when there is space to weigh options, develop common understandings, and to appreciate respective roles and responsibilities of the other stakeholders.</p>	Derived from Brisbane Declaration cited by (Volger <i>et al.</i> , 2017)

Influence	Refers to presenting an opportunity for stakeholders to give input in designing how and when they participate, resulting in policies and services reflecting the stakeholders' involvement, hence the stakeholders' impact is apparent when evaluating project impact.	Derived from Brisbane Declaration cited by (Volger <i>et al.</i> , 2017)
Consultation/ Deliberation	Refers to a process of obtaining feedback from and providing adequate information to interested third parties on relevant aspects of the design, methodologies. It also provides space for, analysis, suggestion of alternative options to influence the process, decision making, and of attaining the desired outcomes of a project. However, project implementers should take note not to overwhelm stakeholders with information outside of their area of interest.	Derived from Brisbane Declaration cited by (Volger <i>et al.</i> , 2017)

The resulting interactions between the principles, human interaction and the environment result in dynamic spatial interventions that inform perceptions – the thinking influencing the way in which stakeholders experience their physical environment (Jacobs & Buijs, 2011).

2.9 Challenges of the participatory approach

While the previous section dwelled on the positive aspects associated with using a participatory approach in implementing environmental management initiatives, the practice has potential pitfalls that have been noted. The main pitfall is that the process hardly follows a linear pathway given that it occurs in a complex social and political environment (Baker & Chapin, 2018). Where communities or grassroots stakeholders need to drive implementation, control of an intervention is seldom devolved completely to their levels given the myriad of national, provincial and local legislative instruments that inform sectorial and spatial developments that take place. In addition, there is a fallacy that there are shared needs, values and sentiments by the various stakeholders. This is not correct as stakeholders in a stakeholder group or community are quite heterogeneous attributed to differences such as in wealth, gender, age, religion, ethnicity and levels of authority (Cornwall & Jewkes, 1995). In real life, stakeholders are often associated through multiple, overlapping networks. These differences result in differences in the interpretation of the agendas and options to pursue in implementing initiatives.

In addition, some stakeholders required for implementing a project, particularly the local people, could be very sceptical as to the value of investing their time and financial resources into the intervention. This challenge is further exacerbated if the initiative does not provide immediate and direct benefits to the participants. Cornwall and Jewkes (1995) expressed similar sentiments through mentioning that sometimes communities are uninterested in the

initiatives being driven, more so when they are driven by external stakeholders including government departments that lack local relevance. The authors further qualify that the disinterest by the locals when implementation seems to be driven by externals through presenting an argument that participation ideals are rather viewed as western cultural imperialism that hold more significance for outsiders than it does for the “intended beneficiaries”.

Another challenge worth mentioning is fatigue in participating in an intervention (Reed, 2008; Knowles & Bragg, 2012). Often, stakeholders are keen to drive the ideals of the intervention in the beginning of a project, but enthusiasm may fade with time. This challenge usually arises in instances where there is lack of management of expectations from inception. Once stakeholders identify that the preconceived ideas of the desirable outcomes that they held at the beginning of the project are not feasible, their interest wanes. This situation could be averted through investing time in understanding the needs of the stakeholders and through open engagement in defining a goal that addresses the common challenges for the group (Reed, 2008). Equally important is the need to indicate limitations during the inception phase; and again this contributes to building trust among participants.

With stakeholder engagements it often takes time to establish relationships as well as build trust between the people. However, due to the timeframes written in a project, it has been noted that some projects may not always allow enough time for building trust as participation may be an obligation enforced by law (Meissner, Funke and Nortje, 2016). This may result in premature decisions being made, decisions of which may be viewed to compromise the sustainability and credibility of the collaboration.

The participatory approach also presents a risk to sustainability of the resources especially when introduced when the resources have already started to decline (Hara & Nielsen 2003: 30). Resource scarcity could complicate efforts for encouraging cooperation and a participatory approach as people do not see the incentive to manage the resource wisely. To address the problem, Hara and Nielsen (2003) proposed for the approach to rather be introduced before the resources decline through exploring alternatives in order to avoid overexploitation. In addition, market and economic forces could also foster unsustainable use and management of the resources as the two forces may favour commercialisation of natural resources at the expense of resource conservation. This creates another problem that stakeholders may eventually have to deal with.

Lack of access to reliable and consistent funding is another factor that could jeopardise efforts for collaboration and participation in environmental management initiatives. There is often no incentive for people to perpetuate the practice as soon as the donor funds run out or a project comes to an end (Hara & Nielsen, 2003). This lack of consistency disrupts the momentum gained, in particular for those whose direct livelihood is derived from their active participation in the project. As a result, some participants are forced to withdraw and invest their efforts in initiatives where there may be more reliability of an income regardless of the cost to the environment.

The principles and challenges, as described in the section above, served as a basis for interrogating and understanding how these influenced engagements within the WWSI.

2.10 Stakeholder perceptions, attitudes and levels of participation

Nastran (2015) explained perception as “man’s primary form of cognitive contact with the world” in which he lives, hence forming his primary form of awareness. He described attitude as the negative or positive evaluation of an object or quality based on the perceptions formed by an individual. A combination of the perceptions and the stakeholders’ past experience and their beliefs about the likely consequences of the intervention (Jacobs & Buijs, 2011; Dhanda, 2015) will likely inform the attitudes that stakeholders develop towards engaging and being part of an intervention. Understanding and embracing stakeholders’ perceptions and attitudes in decision-making at relevant and successive stages of an intervention contributes to sustainable development as the engagement goes beyond the instrumental value of compliance with procedural processes (Dhanda 2015:1 citing Stoll-Kleemann, 2001).

There is need to assess initiatives to determine their impact both to the environment and socio-economic contribution to society. Assessment does not necessarily prove the success or failure of a project (Mendoza & Prabhu, 2009). Instead, assessments could be used either to examine whether there has been a noticeable change in perceptions or perspectives by the various stakeholders as well to determine whether the changes in perception have led to a propensity to make land use decisions that are more ecologically or environmentally sensitive and thus learning from the experience for the future (Mendoza & Prabhu, 2009; Warburton *et al.*, 2012). Assessments of the impact of initiatives through engaging participating stakeholders may also be key to providing

- evidence of value for money to the research funders, particularly those who have a key focus on promoting an inclusive approach in project implementation,

- equally, such an evaluation could also be used to demonstrate to stakeholders how their participation has been used and incorporated towards achieving the short-term and long-term objectives of an intervention,
- assessments could also be a way of determining whether any new capabilities gained through project implementation in fact changed perception and enhanced propensity of stakeholders to make land use decisions that are environmentally sensitive or ecologically sound (Mendoza & Prabhu, 2009) and hence, ensure that the voice of various stakeholders has been instrumental in decision-making; therefore shaping the long-term impact of the intervention (World Bank cited in Brown, 2014).

Such assessments could involve facilitating a process of reflection from all the stakeholders and stakeholder groups on what has (or perhaps has not) proven effective, culminating in a report or feedback process to the project cycle to ensure continuous improvement in the engagement process (Volger *et al.*, 2017).

In 2005, the World Bank acknowledged a severe lack of research that assessed the impact of its participatory programmes, looking at the perceptions and feedback from participating stakeholders (World Bank cited in Brown, 2014). The report is noted to have indicated that less than 25% of its total portfolio had had such an assessment (World Bank cited in Brown, 2014). Assessment in the context of this study was viewed as a process through which one got to understand the perceptions that respective stakeholders had on participating in the alien vegetation clearing initiative for an improved water security profile within the Upper Breede Catchment area. Through the interviews and responding to the questionnaires, the participants reflected on several aspects of the engagement process and from responses given, the researcher was able to deduce what and how, if any of their perceptions, values and approaches to environmental management had shifted, as well as identify their accompanying actions to show for it.

The following section provides an overview on the challenge of selected environmental aspects namely management of alien vegetation within a context of water security. Reference is made to literature on the challenges posed by alien vegetation, more information on the environmental impacts recorded in South Africa as well as an overview of initiatives that adopted a participatory approach and were implemented to address the challenge of alien vegetation in South Africa towards addressing water security issues.

2.11 Alien clearing, landscape restoration and rehabilitation as an environmental issue

Alien vegetation can be described as plant species introduced to a host country from another country, or continent (Davies, Day & King, 1986). Alien vegetation tends to thrive in the host countries that have similar climate and soil conditions to their country of origin. As a result of the lack of predation, the alien vegetation often out-competes native species in both growth and reproduction (Le Maitre *et al.*, 2002). As such, invasive alien vegetation places stress on limited fresh water resources. The same report estimates that the rate of water consumption by alien vegetation is doubling every 20 years. The presence of alien vegetation also contributes towards a significant transformation of an ecosystem due to high levels of infestation and considerable reduction in the population of native species, resulting in the ecological integrity of an ecosystem being compromised and potentially resulting in collapse of the original native system if not addressed (Van Wilgen & Moran, 2007).

Studies carried out for the landscape in South Africa indicate that alien vegetation is a consumptive water user with significant effects on the abstraction of surface and groundwater, resulting in reduced river flows in the country. This reduction has been recorded to be around 6.7% according to a broad-scale study (Le Maitre *et al.*, 2002). Le Maitre *et al.* carried out another study in 2016 which indicated that total reduction in surface flows as a result of the alien vegetation in the country is estimated to be 1 444 million m³ per year or 2.9% of the mean annual runoff (MAR) (Le Maitre *et al.*, 2016). The study produced the two maps as shown below: Figure 2.3 shows the estimated total percentage cover of invasive alien plant species for the area considered for the landscape invasions in the study. Areas shown in grey were not included in the mapping.

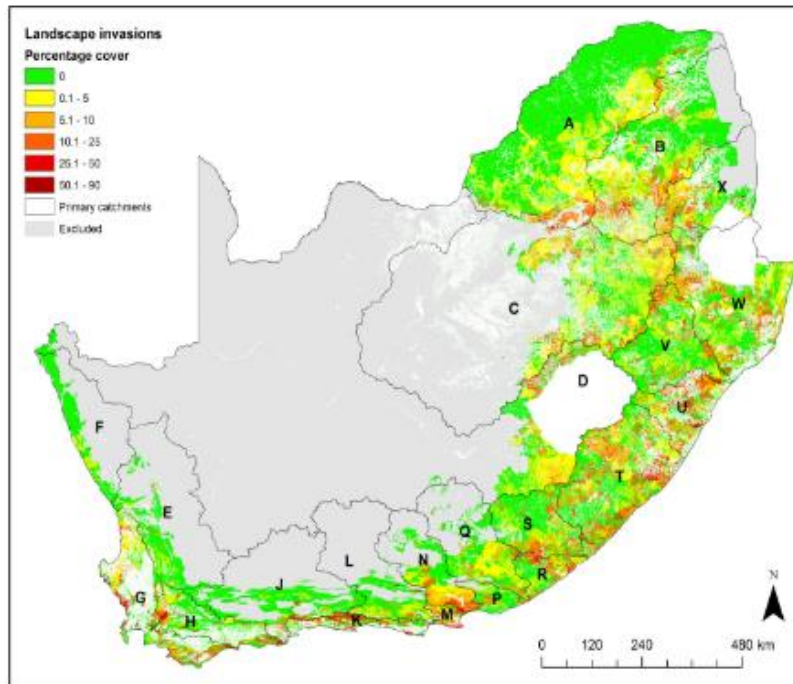


Figure 2.3: Estimated total percentage cover of invasive alien plant species

(Le Maitre et al., 2016)

On the other hand, figure 2.4 below is a map showing the calculated percentage reductions in the MAR as a result of the presence of alien vegetation in selected catchments in South Africa. As can be inferred from the map, the areas with the marked decline in the mean annual runoff coincide with landscapes where the greatest density of alien vegetation has been recorded.

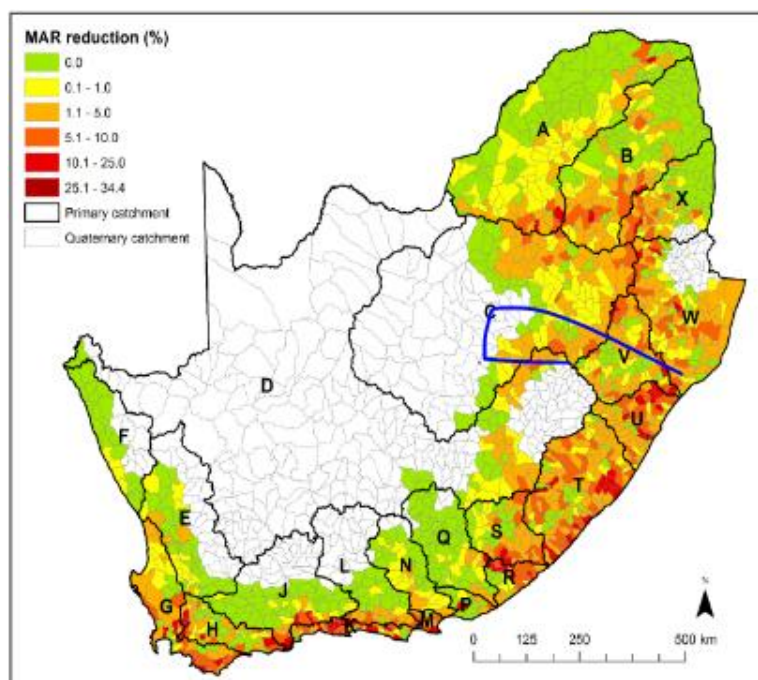


Figure 2.4: Map showing the calculated percentage reductions in the MAR as a result of the presence of alien vegetation

(Le Maitre *et al.*, 2016)

Negative impacts associated with alien vegetation can be summed up as follows:

- Threat to ecological integrity of the natural systems by reducing runoff from watersheds through water uptake from soil and subsequent transpiration, resulting in a transformed landscape (Le Maitre *et al.*, 2002; Van Wilgen & Moran, 2007)
- Threat of intense fires as the vegetation is thick and dense in comparison to the natural vegetation and the wood is more resinous (Colvin *et al.*, 2015; Le Maitre *et al.*, 2016; BGCMA, 2017). Costs of fire protection and damage in wildfires are high.
- Loss of livelihood opportunities due to the impact of alien vegetation on water quality. For example, fishing opportunities may be affected as would be the opportunity to harvest reeds and other riverine vegetation, due to heavy colonisation of habitats by alien vegetation.

Other problems that have been noted to be linked to alien vegetation on the landscape include sedimentation, siltation of dams and estuaries, clogging of waterways and depletion of oxygen in the water (Le Maitre *et al.*, 2002; Knowles & Bragg, 2012). To this end and within the context of sustainability, one needs to note that sustainable management not only entails alien clearing but a complex approach towards maintenance of ecological functions such as soil quality,

hydrological cycles, climate and weather, river flow and water quality; all of which are essential to support the livelihoods and livelihood systems of residents in a given area.

In South Africa, the challenge of managing the spread of the alien vegetation served as the primary motivation for setting up of the Working for Water (WfW) Programme in 1995 (Le Maitre, Forsyth, Dzikiti & Gush, 2016). The WfW Programme contributes to socio-economic development of the community through addressing unemployment, offering poverty relief, addressing gender imbalances, providing opportunities for re-integration to society for offenders as well as promoting development of entrepreneurial skills. The WfW programme introduced a contractor scheme that encouraged workers to earn a wage for a longer period of time for a pre-defined piece of work to growing the individuals to operate on their own as independent contractors (Magadlela & Mdzeke, 2004). The programme serves a dual purpose of simultaneously protecting biodiversity and improving water security while promoting social upliftment especially of individuals from previously disadvantaged backgrounds, as the programme has been successful and registered high employment rates (Peter & Swilling, 2011). However, these benefits and achievements are not always acknowledged or well-presented given the manner in which environmental management initiatives are managed (or not managed).

2.11.1 The challenge of alien vegetation in the Western Cape Water Supply System (WCWSS)

The Western Cape Province has six strategic water source areas namely Boland Complex – from which the Breede River flows, Groot Winterhoek, Table Mountain, Outeniqua, Langeberg and Swartberg (Le Maitre, 2017) as shown in Figure 2.5 below.

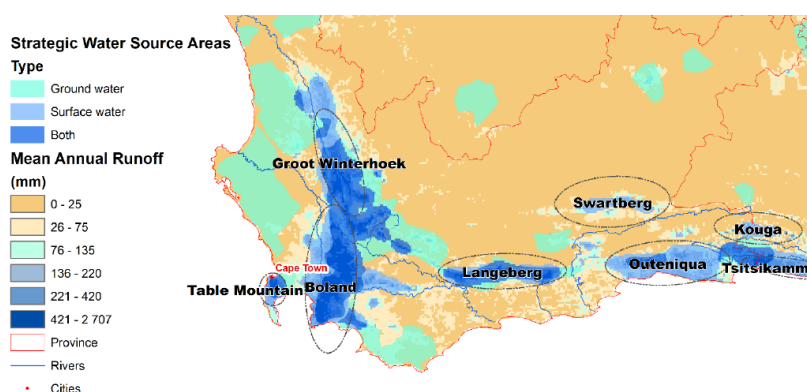


Figure 2.5: Strategic Water Source Areas and Catchments in the Western Cape Province

(Le Maitre, 2017)

Research for the Western Cape Province showed that water security among other negative socio-economic impacts is increasingly under threat from the growth of invasive alien vegetation (Van Wilgen & Moran, 2007: 3). To note, alien vegetation on the catchments that form the WCWSS reduced the flow by 38 million m³ per annum which equates to losing the entire Wemmershoek Dam annually (Kraaij, Cousins & Singels, 2018; Slingsby & Botha, 2018). If not managed, the losses would triple by 2050 (Le Maitre *et al.*, 2016; Kraaij, Cousins & Singels, 2018; Slingsby & Botha, 2018).

The threat of water security is further compounded by effects of climate change and under the worst case scenario regarding climate change; the prediction is a further 10% decline in water supply in the province by 2050. According to the Western Cape Government Annual Performance Plan of 2017 (DEA&DP, 2018), the lowest recorded rainfall for the province in the last 100 years were recorded for 2016 and 2017. The report further indicated that, population growth in the province of 47% between 1996 and 2011 (according to census figures) has brought the issue of water resilience and scenario planning into the spotlight.

Water availability has knock-on effects on the sectors driving socio-economic development. These could include impacts on human settlements, transport, water and sanitation and agriculture. Regarding agriculture, a report by Western Cape Agriculture in collaboration with the Bureau for Food and Agricultural Policy (BFAP) on the impact of the 2017/2018 drought in the Western Cape, estimated the impact of the drought on the province's Gross Value Add (GVA) to be R5.9 billion, a figure representing an average production decline in the agriculture sector of around 20% (Pienaar & Boonzaaier, 2018:12). This, as the agriculture sector on average had to cut its water use by at least 60% or more (Pienaar & Boonzaaier, 2018). GVA is a measure of all the goods and services produced by a sector. The report further estimated the job losses in the agricultural sector within the province as a result of the drought to be 30 000.

A concerted effort in the management of alien vegetation provides a viable alternative towards improving the water security profile for the province. Slingsby and Botha (2018) noted that the importance of alien clearing as part of good catchment management has long been recognised and the severe three-year drought experienced in the Western Cape from 2015 to 2018 elevated the importance of prioritising and fully addressing the issue. The drought experienced in the Western Cape gave impetus to the need to prioritise and manage alien vegetation in the province (Wolski, 2018). There is an economic value that also comes with clearing of alien

invasive vegetation. Figure 2.6 below presents an average unit reference value (URV) of water generated through various water supply options in the Western Cape (EnviroSolutions, 2018)¹.

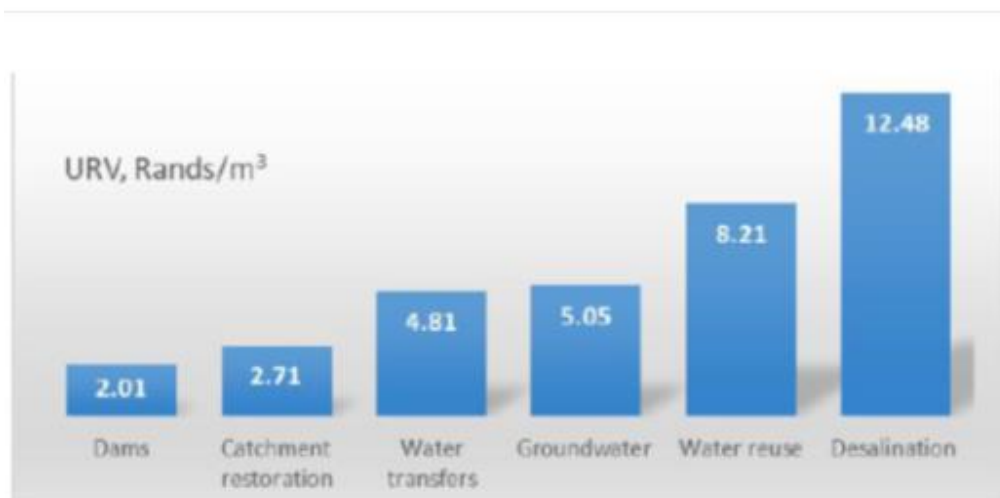


Figure 2.6: Average unit reference value (URV) of water generated through various water supply options in the Western Cape

(EnviroSolutions, 2018)

2.11.2 The imperative for collective action on alien clearing for water security

The WfW Programme in South Africa was established in 1995 and was administered through the Department of Water Affairs and Forestry. Currently, the administration has been shifted to the Department of Environmental Affairs. The purpose of the programme has been to spearhead the control and management of invasive alien plants and rehabilitation of affected ecosystems in order to contribute towards improving water security profiles in the targeted catchments (DEA, 2018). The programme was also designed with objectives of advancing the government's empowerment, transformation and poverty eradication agenda (Van Wilgen & Moran, 2007; Le Maitre *et al.*, 2016). To this end, authentic participatory approach by all key stakeholders is viewed as being fundamental to achieving the objectives of the programme.

¹¹Unit Reference Value (URV) is a common measure in South Africa to assess the economic efficiency of proposed water projects. To determine the URV of a particular scheme, the water supplied (i.e. the primary benefit derived from it) is projected over the same period and 'discounted' at the same rate to derive a 'present value' in cubic meters.

It is important to also note that the process of clearing alien invasive vegetation is considered as an ecosystem-based adaptation response to climate change within the broad context of sustainable development. The Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change (2009) defined ecosystem-based adaptation (EbA) as:

“...the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change”.

Participation is an important element driving implementation of EbA as the people; in particular stakeholders with a high risk of being affected by the impacts of climate change, play a central role in the decision-making process and implementation of activities to reduce the risk. EbA aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people to adverse effects of climate change (Roberts, Boon, Diederichs, Douwes, Govender, Mcinnes, Mclean, O'Donoghue & Spires, 2012). EbA approaches are, therefore, appropriately integrated into broader adaptation and development strategies.

2.12 Summary

The chapter focused on reviewing the available literature on stakeholder engagement and participation within the context of attaining sustainable development. Key terms including stakeholders, participation, stakeholder engagement and the participatory process were defined.

This was followed by a section that discussed the various typologies of participation and the level of influence that comes with each type or class of participation. The section argued for the value of the wheel of participation, which acknowledges that typologies are not static but rather will vary for a stakeholder or stakeholder group, depending on the phase of project implementation. The typology is also influenced by given factors and principles underpinning project implementation. These were also discussed within a context of their influence on the perceptions and attitudes that stakeholders form and which thus affect their interests and level of participation in a project. There was also a review of principles, factors and elements from literature that have been identified to prime a project for success when considered in the project cycle. Challenges to effective implementation of participatory approaches to given initiatives were also discussed. The WfW and in particular, the process of clearing alien invasive vegetation were presented as examples of initiatives that require collaboration and authentic participation by the various stakeholders in order to implement successfully.

CHAPTER 3

AGREEMENTS, DECISIONS, POLICY AND REGULATORY FRAMEWORK

3.1 Introduction

The importance of stakeholder engagement and participation in the various environmental management initiatives addressing aspects such as water, air quality, climate change, landscape and biodiversity management, have been noted in the ways the two concepts have been sought and embedded in international and national policies and implementation plans, as well as being prioritised in the decision making processes (Reed, 2008; Armitage Plummer, Berkes, Robert & Charles, 2009; Gupta, 2014). Chapter 3 provides examples of and discusses strategic decisions, resolutions and policy frameworks as relevant for the key topics of sustainable development, water resource management and environmental management, in particular the management of alien invasive species, while also considering the tenet of participation and stakeholder engagement.

3.2 Relevant international agreements and policies

3.2.1 Overview

Decisions, policies and resolutions that highlight stakeholder engagement and participatory approaches as key elements to inform decision making processes for environmental management have been made at various levels. It is important to note that participation and stakeholder engagement have been key features in these outcomes at the international, regional, national and local level. One can easily see the common thread emphasising the importance of the participatory approach among these outcomes, despite the differences in the level of adoption, as the subsequent statements and decision build on the previous ones (NGO Committee on Education, 2018). Each subsequent decision and outcome also reaffirmed commitments and decisions in the preceding ones.

3.2.2 Aarhus Convention of 1998

The *Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters* was adopted during 1998 in Aarhus, Denmark by the United Nations Economic Commission for Europe (UN/ECE), consisting of 55 countries of Northern America, Western, Central and Eastern Europe, and Central Asia, which gives legal backing for public

participation in environmental decision-making (UNECE, 2012: 149). Article 7 of the Aarhus Convention clearly states that

Each Party shall make appropriate practical and/or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public.

The Convention also sets out obligations that the central government needs to meet regarding stakeholder engagement and participation during the preparation of plans and programmes relating to the environment. Some of these include firstly, the setting of appropriate and other practical provisions to ensure that there is engagement with the various stakeholders including local people in the planning and implementation of projects and/or programmes, and secondly, provision of transparent and fair frameworks to enable participation both for decision making itself as well as affording affected members of the public the opportunity to uphold the standards of decision making processes by challenging procedures and decisions. The third and final point is on the need for the public to have access to the necessary information in order to effectively contribute and participate in the processes (UNECE, 2012).

3.2.3 Rio Conference and Agenda 21 of 1992

Agenda 21 (or Agenda for the 21st Century) is the comprehensive plan of action that was taken globally, nationally and locally at the 1992 Rio Conference by organizations of the United Nations System, governments, and major groups in every area on which humans impact the environment. The preamble of Chapter 23 acknowledges the important role for stakeholder engagement and broad public participation in decision making towards achievement of sustainable development. There is specific mention of the need for individuals, groups and organizations to participate in environmental impact assessment procedures for development taking place around their areas and the need for the stakeholders to know about and participate in decisions, particularly in development activities that could potentially affect the areas in which they live and work. Furthermore, it highlights the need for the public to have access to information on which environmental protection measures to put in place (NGO Committee on Education, S.a.). This plan was adopted at the end of the UNCED summit held in 1992 in Rio.

Alongside and complementary to Agenda 21 was the Rio Declaration on Environment and Development, adopted by more than 178 governments. Principle 10 of the Rio Declaration unequivocally states that environmental issues are best handled with the participation of all concerned citizens and goes further to state the need for each individual to be given

appropriate access to information concerning the environment, as well as an opportunity to participate in the decision making process (United Nations, 1992). The Rio Declaration also acknowledges the participatory approach and processes of stakeholder engagement as important sources of innovation and implementation of locally driven action with a proven ability to promote sustainable livelihoods. To this end, the outcome called on governments, in cooperation with appropriate international and non-governmental organizations, to support community-driven approaches to sustainability through, inter alia:

- *“respecting the cultural integrity and the rights of indigenous people and their communities;*
- *promoting or establishing grass-roots mechanisms to allow for the sharing of experience and knowledge between communities; and*
- *giving communities a large measure of participation in the sustainable management and protection of the local natural resources in order to enhance their productive capacity“(UNCED, 1992).*

3.2.4 WSSD in Johannesburg of 2002

The *World Summit on Sustainable Development* (WSSD) was convened in Johannesburg, South Africa in 2002. The purpose of the summit was to hold a ten-year review of the 1992 *UN Conference on Environment and Development* (UNCED), while also reinvigorating global commitment to sustainable development. The WSSD negotiated and adopted two main documents:

- i. The *Johannesburg Plan of Implementation* which reiterated the intent of pursuing sustainable development outcomes from the engagement in 1992. The *Johannesburg Plan of Implementation* was designed as a framework for action to implement the commitments originally agreed at UNCED and included eleven chapters, namely an introduction; poverty eradication; consumption and production; the natural resource base; health; small island developing states (SIDS); Africa; other regional initiatives; means of implementation; and institutional framework.
- ii. The *Johannesburg Declaration on Sustainable Development*, which outlined the path taken from UNCED to the WSSD, highlighted the challenges encountered, expressed a commitment to sustainable development, and reaffirmed the importance of promoting an active and transparent multi-stakeholder engagement in the pursuit of achieving sustainable development.

3.2.5 Rio +20: “The Future We Want” of 2012

The Future We Want was the main outcome of the Rio+20 Summit which was held in 2012 in Rio de Janeiro, Brazil. Building on the outcomes from the WSSD in Johannesburg, the Rio+20 outcome focused on promoting efforts towards a sustainable future for the planet and being sensitive to the needs of the present and future generations. The outcome acknowledged that poverty eradication, changing unsustainable patterns of consumption and production and promoting sustainable ones, and protecting and managing the natural resource base of economic and social development were the overarching objectives of sustainable development and essential for its success. The heads of state who endorsed the outcome flagged the important role of meaningful involvement and active participation of the diverse range of stakeholders. These stakeholder groups include regional, national and subnational legislatures and judiciaries, and all major groups, such as local communities, volunteer groups and foundations that contribute to planning and implementation of policies and programmes for sustainable development at all levels. *The Future We Want* was considered as an output to reinvigorate global partnership in pursuit of a collaborative approach towards the:

“need to achieve sustainable development by promoting sustained, inclusive and equitable economic growth, creating greater opportunities for all, reducing inequalities, raising basic standards of living, fostering equitable social development and inclusion, and promoting the integrated and sustainable management of natural resources and ecosystems that supports, inter alia, economic, social and human development while facilitating ecosystem conservation, regeneration and restoration and resilience in the face of new and emerging challenges” (United Nations, 2012).

3.2.6 Transforming our world: The Agenda 2030 for Sustainable Development and the Sustainable Development Goals of 2015

Building on the Rio+20 Outcomes, *Transforming Our World: The 2030 Agenda for Sustainable Development* was adopted by the United Nations’ General Assembly in 2015. The *Sustainable Development Goals* (SDGs) (Figure 3.1), which are embedded within this Agenda, express that its implementation has to be inclusive, participatory and implemented from the bottom-up in efforts to eradicate poverty and promote prosperity for all (United Nations, 2015). As highlighted in the UNEP Post-2015 Discussion Paper, *Agenda 2030* highlights the close relationship between the goals for human development and successful environmental management, through making a case that development does not necessarily need to result in a sacrifice of the environment (UNEP, 2013).



Figure 3.1: The 17 Sustainable Development Goals from Agenda 2030 Source

(United Nations, 2015)

In addition, of the 17 Sustainable Development Goals (SDGs) adopted as shown in Figure 3.1, six speak directly to the environment (SDG 6 – Clean Water and Sanitation, SDG 7 – Affordable and Clean Energy, SDG 12- Responsible Consumption and Production, SDG 13 – Climate and Action, SDG 14 – Life below water, SDG 15 – Life on land), while two specifically focus on the value of institutions and the participatory approach of leaving no one behind in decision making and implementation (SDG 16 – Peace, justice and strong institutions, SDG 17 – Partnerships for the Goal).

3.2.7 UNCBD: Aichi Targets on Biodiversity

The *Aichi Targets* were a culmination of the tenth meeting of the Conference of the Parties of the Convention on Biological Diversity that was held from 18 to 29 October 2010 in Nagoya, Aichi Prefecture, Japan. The *Aichi Biodiversity Targets* were adopted in decision X/2 of the updated *Strategic Plan for Biodiversity* from the meeting and the targets apply for the period 2011 to 2020. The Plan provides an overarching framework of biodiversity for the entire United Nations system and includes the partners engaged in biodiversity management and policy development.

The Plan identifies five strategic goals, which collectively seek to

- address the underlying causes of biodiversity loss by mainstreaming sustainable biodiversity management across government and society,
- reduce the direct socio-economic and environmental pressures on biodiversity and promote sustainable use,

- improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity,
- enhance the benefits to all communities of people from biodiversity and ecosystem services, and
- enhance implementation of biodiversity management and biodiversity mainstreaming through promoting participatory planning, knowledge management and capacity building.

Furthermore, the Plan has 14 specific targets of which Target 9 is relevant for this study. *Aichi Biodiversity Target No 9* states that:

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment (CBD, 2010).

As echoed in the Strategic Goal 5, successful implementation will entail engagements and dialogue contributing to participatory planning, knowledge management and capacity building.

3.2.8 The African Union Agenda 2063: The Africa We Want of 2015

In 2013, the African Union adopted *Agenda 2063: The Africa We Want* as a strategic framework and roadmap to inform the socio-economic, political and environmental continental development towards 2063. The Agenda through one of the goals under “Aspiration 1”, acknowledges that Africa’s economy is driven largely by environmental assets, goods and services and outlines aspirations for an inclusive and participatory approach in the decision making process towards a sustainable Africa (African Union Commission, 2015). The continent seeks to achieve the sustainability through a commitment from citizens, leadership, governments and institutions at national, regional and continental levels to act, coordinate, and cooperate for the realisation of this vision (Brand South Africa Research, 2015). Its plan of implementation builds on, and seeks to accelerate implementation of previous and current international and continental initiatives for growth and sustainable development.

3.2.9 Paris Agreement

The *Paris Agreement of 2015* flowed from the 21st Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC). The Agreement has the long-term goal to keep “the increase in global average temperature to well below 2°C above pre-industrial levels”. It does not set emission-reduction obligations like the previous Kyoto Agreement, but allows each country to determine and plan their own contributions and report

thereon. Developed countries should undertake economy-wide absolute emission reduction targets, while developing countries are encouraged to improve their mitigation targets, and over time move towards economy-wide emission reduction targets (Paris Agreement Article 4(4)) (UNFCCC, 2015). The Agreement also has the global goal of providing support for building resilience and adaptive capacity and reducing vulnerability to climate change, *inter alia* through adaptation planning (Paris Agreement Article 7). In terms of Article 5 of the Agreement, the conservation of sinks and reservoirs of greenhouse gases, such as forests, are also a requirement. Article 6 recognises voluntary cooperation for mitigation and adaptation actions while fostering sustainable development, protection of livelihoods and poverty reduction, and the role in participation by the public and the private sector in mitigation, adaptation, capacity-building and implementation (UNFCCC, 2015).

3.3 The South African environmental policy and legislative framework

3.3.1 Overview

South Africa is a signatory and party to the aforementioned conventions, treaties and decisions. To this end, the nation's policies, strategies and legislation are informed by and aligned to these international decisions. As relevant to this study, stakeholder engagement and the participatory approach have an important role of informing the environmental policy and legislative landscape towards meeting the development needs for a democratic South Africa. South Africa is going through a socio-economic, political and environmental transformation phase in attempts to recover from the effects of Apartheid. Apartheid has been characterised as an era in which the majority of South Africans were denied the right to participate in democratic decision making and access to the country's natural resources. As such, there is an array of social, economic, legal and environmental ills whose legacy needs to be addressed with examples ranging from hunger, poverty, disease, illiteracy, unemployment, powerlessness, inequity with regard to access to resources, lack of services, and environmental degradation (Ndhlovu, 2011; Meissner *et al.*, 2016). The democratic government has set a development vision to correct the previous injustices, setting the country on the path towards attaining sustainable development. As a signatory to international decisions and outcomes that promote sustainable development and the participatory processes towards achieving these outcomes as alluded to in section 3.2, South Africa has also established policies and legislative frameworks as a vehicle to reach sustainable development. This section will present and discuss some of the relevant policies and legislation that ensure that there is participation, equity and sustainable use of natural resources towards reaching the desired goal. The participation of every South African –

through all levels of government, business, industry, trade unions, community organisations and NGOs is central to the effective implementation of these policies.

Government policies are statements of the government's guiding principles and intentions with regards to dealing with important public issues (DEAT, 1996). These provide the means by which government prioritises problems needing addressing, sets objectives and allocates resources in order for these to be achieved. It is very important for government policies to reflect the wishes of the general public given that the taxpayers contribute towards maintenance and management of the country.

3.3.2 The Constitution of the RSA, 1996

The *Constitution*, which is the supreme law of the country, denotes the importance of prioritising stakeholder engagement in decision making processes. This is supported by the *Bill of Rights* that, *inter alia*, provides for an enforceable substantive environmental right.

Section 24 of the *Constitution* contains the environmental rights of South Africa's citizens and states that:

“Everyone has the right:

- to an environment that is not harmful to their health or well-being; and
- to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures.”

Section 24(b) requires the government to put in place reasonable legislative and other measures to ensure that citizens enjoy the right as this arguably implies a need for stakeholder engagement and participation in environmental decision making at all levels.

To give more emphasis to the role of stakeholder engagement and participation in decision making, section 152(1) (e) of the *Constitution* states that one of the objectives of local government, the lowest tier of government closest to the grassroots, is to encourage the involvement of communities and community organisations in the matters of local governance. Furthermore, sections 59(1), 72(1) and 118(1) of the *Constitution* oblige the Parliament of South Africa to “facilitate public involvement in the legislative and other processes” that impact on the various aspects of people's lives. This was argued and presented in a court case in 2018 between South African Veterinary Association (SAVA) and the Speaker of the National Assembly. The National Assembly, through Parliament, had not included SAVA in the participatory process that resulted in Parliament passing the *Medicines and Related Substances Amendment Bill* in 2015, despite SAVA being a stakeholder active in the medical

sphere that was seriously affected by the Bill (Sibanda, 2018). The amendment bill was found to be unconstitutional as the perspectives of all stakeholders had not been gathered and considered in the decision making process.

3.3.3 Strategic planning in South Africa

All three spheres of government are responsible for carrying out integrated and spatial planning, but legislation at present only exists for spatial planning and for local governments to develop Integrated Development Plans (IDPs) in terms of the Local Government: Municipal Systems Act 32 of 2000. Integrated planning at the national level is informed by, and is required to be aligned with the *National Development Plan* (NDP) while each province is expected to also develop a Provincial Strategic Plan, previously referred to as Growth and Development Strategies. The development process of these aforementioned strategic documents needs to be inclusive and promote participation of citizens within South Africa to contribute to the process.

3.3.4 National Development Plan

The *National Development Plan* (NDP) was preceded by a *Green Paper on National Strategic Planning* in 2009 and a revised (and narrowed down) *Green Paper on a National Planning Commission* in 2010, which set out the purpose of the NDP. In 2018 an *Integrated Planning Framework Bill* was introduced in the National Assembly, which would for the first time provide a legal framework for the Department of Planning, Monitoring and Evaluation, the National Planning Commission (NPC) and the NDP.

The South African NPC developed the NDP as an enabling vehicle for realising enactment of the strategic legislative tools for the country towards 2030. Leading to the NDP, South Africa employed a participatory approach and went through a stakeholder engagement and consultative process of identifying the key areas to prioritise for development and investment. The process culminated in the Diagnostic Report, which was released in June 2011. The Diagnostic Report showed a lack of engagement between the public sector and the residents in the country, resulting in the government designing interventions that were not responsive to the need on the ground (NPC, 2012). The disparity resulted in several negative impacts that included, among others that the country was not using the natural resources endowed in it such as water and the land well, despite the country being located in a water scarce area. In addition, parts of the country were still locked in poverty, entrenching the division between the rich and poor in the country. A key recommendation from the report was the need for coordinated and focused efforts to addressing the challenges impeding the country attaining development objectives which include, *inter alia*, reducing poverty, minimising exclusion,

nurturing economic growth while also involving communities to actively participate in their own development.

The Report culminated in the *National Development Plan 2030 of 2012* which had the key objective of eliminating poverty and reducing inequality by 2030. The Plan was set up to achieve the objectives through drawing on the energies of its people to support growth of an inclusive economy, building capabilities, enhancing the capacity of the State, and promoting leadership and partnerships throughout society (NPC, 2012). Two objectives that speak to inclusion and a participatory approach from the identified approaches were:

- Encouraging citizens to be active in their own development, in strengthening democracy and in holding their government accountable;
- Strong leadership throughout society that work together to solve our problems.

According to the NDP, communication, public participation, leadership and engagement with citizens of South Africa are the golden thread interwoven throughout the plan and that if effectively carried out, should result in the country nudging towards an environmentally sustainable, climate change resilient, low-carbon economy, and just society by 2030. All these targets are aligned with the global goals of *Agenda 2030*. Plans feeding into the NDP include the *Spatial Planning and Land Use Management Act (SPLUMA)* and some of the sector specific plans in the country. These are discussed in the sections below.

3.3.5 Spatial Planning and Land Use Management Act (SPLUMA) No 6 of 2013

SPLUMA is the framework legislation regulating land use planning in South Africa. National, provincial and local governments need to plan and grant land use approval in accordance with it. *SPLUMA* sets out a number of development principles such as the need to promote sustainable and efficient land use and the development of principles, norms and standards guiding development. These are all geared towards redressing the imbalance of the past and to ensure that there is equity in the application of spatial development planning and land use management systems. The framework also echoes the need to promote a participatory approach in decision making processes with an emphasis on promoting cooperative governance and intergovernmental relations among the national provincial and local spheres of government – all within a context of promoting sustainable development.

3.3.6 Medium-Term Strategic Framework (MTSF) 2014–2019 and national outcomes

The *MTSF* is the vehicle designed to ensure that South Africa achieves the vision as set out in the NDP. The *MTSF* for the period 2014 to 2019 is focused on planning, piloting and investing in the creation of a framework for implementing the transition. As a result, the phase

has been characterised by efforts seeking to unblocking regulatory constraints, collection and curation of data, establishing baseline information, as well as prototyping key strategies for change, and exploring ways through which these could be scaled up. A key focus is on addressing natural resource degradation, depletion of ecological infrastructure and nurturing a conducive environment for stakeholder engagement and participation.

In order to be able to monitor and report on progress, the government of South Africa has agreed on 14 outcomes as a key focus of work between 2014 and 2019. The outcomes have a certain number of measurable outputs with measurable targets. Specific activities have also been outlined to help achieve the targets. Each of the 14 outcomes has a delivery agreement entered into by various spheres of government, the private sector and civil society. The delivery agreement can be viewed as a negotiated charter reflecting the commitment of the key partners involved in the direct delivery process to working together to undertake activities effectively and on time to produce the mutually agreed-upon outputs; setting a good precedence for implementing a participatory approach in project implementation. Outcome 10 focuses on supporting efforts to protect and enhance environmental assets and natural resources.

3.3.7 Outcome 10: Protected and enhanced environmental assets and natural resources

Outcome 10 of the *MTSF* acknowledges that South Africa is faced with the challenge of deteriorating environmental quality due to pollution and natural resources degradation, destruction and/or depletion and that information management system for environmental issues are still inadequate. Furthermore, competing land use exacerbates the exploitation and subsequent degradation of natural resources.

The Outcome also acknowledges the need for integrated and innovative approaches to address the challenges. This will be achieved through implementing several actions identified towards achieving sub outcome 1: Ecosystems are sustained and natural resources are used efficiently. Actions listed as relevant for this study include, *inter alia*, implementing strategies for water conservation and demand management, integration of ecological infrastructure considerations into land use planning and decision making, and on the participatory aspect, promoting coherent and aligned multi-sector regulatory system and decision support across government.

3.4 Sector-specific legislation, frameworks and plans

The sector-specific legislation, frameworks and plans have a basis in both the *Constitution* and *National Development Plan*. These are discussed in the following sections, making the necessary links on how provision is made for participation and collaboration in environmental management within the country.

3.4.1 Environmental management

3.4.1.1 National Environmental Management Act (NEMA)

The environment is the cornerstone supporting economic development and the well-being of South Africa, and as provided for in the *Constitution*, “everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected for the benefit of present and future generations”. The *Constitution* places a positive obligation on the State to take reasonable legislative and other measures to realise the right. This is realised through the *National Environmental Management Act (NEMA)* 107 of 1998. Environmental principles in *NEMA* are closely aligned with internationally accepted principles governing environmental management such as those adopted in the SDGs. Principles espoused in *NEMA* encourage environmental management at the local government sphere that is pro-poor, human-centred with equity as an underlying tenet. *NEMA* also has the principle of relevance, which highlights the importance of an integrated approach in development and undertaking an assessment that looks at the impacts of both people and environment simultaneously. This principle states that “environmental management must be integrated and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option”. This approach then begs organs of state to engage a participatory approach in deciding on the best development option.

In support of stakeholder engagement and participation, *NEMA* clearly outlines that

(t)he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

Important to note is that *NEMA* promotes the direct citizen participation in the decision making process; including embracing traditional and ordinary knowledge as well as taking cognisance of gender sensitivity and considering the voice of the vulnerable and youth in environmental management.

There are several parts of specific legislation that have been established to give effect to *NEMA* and these include the *National Environmental Management Biodiversity Act (NEMBA)*, which provides for the management and conservation of South Africa's biodiversity, protection of species and ecosystems that warrant national protection as well as the sustainable use of and equitable sharing of benefits resulting from the use of biological resources in the country.

Part 2 of the Administration of the *NEMBA* focuses exclusively on the need for consultation and public participation initiated from the ministerial level to inform decision making.

Pertinent to clearing of alien vegetation and hence, to this research, is also the technical process of managing alien vegetation in the section under *NEMBA* of 2004 (Act no. 10 of 2004) and the *Invasive species Regulations of 2014*. The Regulations require every land owner to exercise Duty of Care to manage, control and/or eradicate all listed invasive alien vegetation that occurs on their property and thus, prevent them from spreading. The landowner is also required to notify the DEA in writing of any listed alien vegetation that may be found on their property as well as the requirement for the land owner to take all required steps to prevent or minimise harm to biodiversity. In a way, this calls on the land owner to play a part and hence, participate in the management of the landscape towards a desired state that is free of alien vegetation.

Alongside *NEMBA* and developed to minimise human induced disturbances particularly in protected areas and to ensure that protected areas such as catchments are managed efficiently, there is the *National Environmental Management Protected Areas Act (NEMPA)*. *NEMPA* has been instrumental in the establishment of the Stewardship Programme. The Stewardship Programme is:

“a mechanism that promotes and supports the wise use and management of the environment – natural resources and biodiversity, and the ecosystem services they provide, through the form of voluntary legal agreements with private and communal landowners/users in South Africa”.

The programme seeks to explore the value that results in a win-win situation for both man and the environment. These legislative tools have been put in place to ensure that aspects of the environment are utilised sustainably in developing the economy of South Africa.

3.4.1.2 One Environmental System

Consistent with the emphasis on integration and alignment of legislation, one of the most significant changes in the environmental regulatory framework was establishing the *One Environmental System*, which came into effect on 8 December 2014. The *One Environmental*

System was established to ensure that all environment-related aspects are regulated through the *One Environmental System*, which is informed by the *National Environmental Management Act, 1998 (NEMA)*. The System gives authority for the Minister responsible for environmental affairs to set the regulatory framework and norms and standards while the Minister responsible for mineral resources is tasked with oversight regarding implementing the provisions of *NEMA* and the subordinate legislation as far as it relates to prospecting, exploration, mining or operations. It also calls on the minister responsible for environmental affairs, the minister responsible for mineral resources and the minister responsible for water affairs to agree on fixed timeframes for the consideration and issuing of the authorisations in their respective legislation and an agreement to synchronise time frames in commenting on development applications submitted to the respective departments.

3.4.1.3 Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA)

The *Conservation of Agricultural Resource Act (CARA)* (Act No. 43 of 1983) was originally enacted to regulate invasive alien plants that could negatively impact on agricultural resources. To date, there is no alternate relevant legislation leaving *CARA* regulations to be applied in the regulation of alien vegetation that could impact biodiversity, water resource management and fire management. The Act is administered by the National Department of Agriculture through its Directorate: Land Use and Soil Management (DLUSM).

CARA seeks to contribute to sustainable use and management of biodiversity through enhancing the productive potential of land, maintaining water resources, protecting the vegetation as well as combating weeds and alien vegetation.

3.5 Water management laws and policies

3.5.1 Water policy review

A participatory approach was employed in the review of the water policy in which the government held stakeholder engagement processes aimed at stimulating the debate on water rights and soliciting comments that were incorporated into a set of principles by a water law review panel (Seetal & Quibell, 2005). These principles were approved by the Cabinet in 1996 and then served as reference in drafting the *White Paper on a National Water policy for South Africa* in 1997. Key objectives of the White Paper included promoting equity in access to and benefit from the nation's water resources for all South Africans, as well as ensuring equitable access to water resources while ensuring that the needs and challenges of the country are addressed in line with the development goals. The White Paper emphasized the

role of the national government as custodian of water resources and was tasked with exercising the powers of a public trust (Ncube, 2018).

The White Paper also stated that water is a right to both human beings and the environment. It stated that only water required for meeting basic human needs and maintaining ecological sustainability would be guaranteed as a right. The water required to protect and sustain the ecosystems in order to secure ecologically sustainable development and water use is known as the ecological reserve (Van Wilgen & Breen, 2003). The White Paper also made provisions for allocations to promote equity and optimal use of the resource for the achievement of equitable economic and social development.

3.5.2 Water Service Act No 108 of 1997

The White Paper mentioned above was developed over two years of wide consultation with the product being a much summarised product of the water law review process, which culminated with the formulation of the *Water Service Act No 108 of 1997*. The Act is currently the governing legislation for Water Services and Sanitation and provides for, among others, rights of access to a basic water supply and basic sanitation, the establishment and disestablishment of water boards and water service committees and their powers and duties as well as the monitoring of water service interventions at the instruction of the Minister or by the relevant province.

3.5.3 National Water Act (NWA) No 36 of 1998

3.5.3.1 Main purpose

The *National Water Act Number 36* was adopted in 1998. The National Water Act of 1998 serves the dual purpose of:

Providing for fundamental reform of the law relating to water resources; to repeal certain laws; and to provide for matters connected therewith. Some of the issues that the Act takes into account include redressing of Apartheid legacy of racial and gender discrimination, promotion of equitable access to water and facilitation of social and economic development (Water Act, 1998), and

Ensuring that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that take into account, amongst other factors:

- meeting the basic human needs of present and future generations;
- promoting equitable access to water;
- promoting the efficient, sustainable and beneficial use of water in the public interest;
- facilitating social and economic development;

- providing for growing demand for water use;
- reducing and preventing pollution and degradation of water resources;
- meeting international obligations, and
- managing floods and droughts.

3.5.3.2 Catchment Management Agencies

In terms of defining and regulating the governance of water resources, the *National Water Act* established institutions called catchment management agencies (CMAs) that manage water resource use at a catchment level. According to the Act, CMAs are required to develop a catchment strategy for the area of jurisdiction that corresponds with the National Water Resource Strategy. The National Water Resource Strategy sets out ways in which water should be used in a sustainable manner to support economic development, eliminate poverty and inequality while contributing to job creation in South Africa. The first *National Water Resource Strategy for South Africa* was published in 2004 and the second edition, which is currently in place, was published in 2013.

Addressed in the Act is the importance of engaging various stakeholders and interested parties such as land owners, affected parties, local communities, and municipalities also need in the process of developing the strategy for managing the catchment area. The catchment strategy needs to include a water allocation plan, which sets out principles for the allocation of water to existing and prospective users and takes into account the protection, use, conservation, management, development and control of water resources (Ncube, 2018).

Once approved by the Minister and established, the CMA is vested with the following duties:

- To investigate and advise interested and affected persons on the protection, use, development, conservation, management and control of the water resources in its water management area;
- To develop a catchment management strategy;
- To co-ordinate management of water users and of the water management institutions within its water management area;
- To promote public participation in the protection of water resource and use development conservation management and control of the water resources in its water management area, among other duties. It is expected of the CMA to raise funds in order to support its functions (NWA, 1998).

CMAs established in South Africa include: The Inkomati-Usutu CMA, Breede-Gouritz (formerly Breede-Overberg) CMA, Magalies Water CMA, Mhlathuze Water CMA and Rand Water CMA.

3.5.3.3 Water User Association

Falling within the ambit of the catchment management agencies is the establishment of smaller water user associations (WUAs). WUAs were enacted in Chapter 8 - Sections 91–98 of the *Water Act* of 1998. The minister in charge of water issues oversees establishment of WUAs. Evidence of stakeholder engagement and public participation needs to be evident in the process of setting up a WUA. It is important to take note that water user associations operate at localised level and are, in effect, operative associations of individual water users who wish to undertake water-related activities for their mutual benefit.

The Act also enables individual water users who wish to undertake water-related activities for their own benefit to form cooperative associations (Masangu, 2009). The water users and other interested stakeholders would operate within the guidance of a memorandum of agreement or memorandum of understanding document, which is informed by the *Water Act* and is prepared with input from involved stakeholders. The WWUA which is relevant for this study, is one such water user association established under the guidance of and with line of prescripts of Chapter 8 of the *National Water Act* (Act 36 of 1998).

The *NWA* (1998) is founded on public participation, which allowed previously disadvantaged communities to not only directly influence the way in which water is allocated, but also allows for proactive interventions to provide previously disadvantaged groups with legal entitlements to use water (Seetal & Quibell, 2005). Stakeholders in water resource management include municipalities, major water users such as industry and commercial irrigation, established and emerging farmers and land owners. The *NWA* echoes that stakeholder participation is central to effective management of water and the water resource to ensure ownership and sustainability of the process; and to enable water users and managers to make decisions regarding their practices. As institutions that facilitate participation in water resource management, CMAs need to ensure that various catchment management functions are developed and implemented in a participative manner. CMAs are vested with developing catchment management strategies CMS that promote participation and representation on an equitable basis for all stakeholders in a given area (Van Wilgen & Breen, 2003: 150).

3.5.3.4 Resource Water Quality Objectives

Of relevance to this study is determining the water resource quality objectives. Part 2 of the *National Water Act* (Act 36 of 1998) requires the Minister of the department responsible for water affairs in South Africa to determine the class and resource quality objectives of all or part of water resources that are deemed to be of importance in a given area. Resource water quality objectives (RWQO) seek to inform clear goals relating to the quality of water resources

in a manner that seeks to obtain a balance between the need to protect and sustain water resources on the one hand, and the need to develop and use water resources on the other (DWAF, 2006). RWQOs for a water resource are determined on the basis of acceptable risk, i.e. the less risk that one is prepared to accept for damaging the water resource and possibly losing the goods and services provided by it, the more stringent the objectives would be. RWQOs are, however, determined at less stringent levels, but not to a level where the long-term sustainable use of the resource is compromised.

Although specific national departments are responsible for the implementation of sector-specific frameworks, i.e. management of water resources is the mandate of the Department of Water and Sanitation, environmental management is the responsibility of the Department of Environmental Affairs, there is a noticeable change in which emerging policy recognises that a joint approach between government departments, the private sector and civil society should form the basis of tackling environmental management challenges facing the country (Western Cape Government, 2017a: 60). Such a multisectoral and multidisciplinary approach speaks to the importance of participation and engagement beyond the conventional “silo approach” in managing “wicked problems” i.e. problems of organised complexity in which the more attempts are made to solve them, the more complicated they usually become (Muller, 2012, Muller, 2016 class lecture).

3.6 Programmes

3.6.1 Reconstruction and Development Programme (RDP)

The RDP was set up in 1994 as an integrated, coherent socio-economic policy framework to inform sustainable development in South Africa after Apartheid. Its aim was to address and redress the inherent socio-economic and spatial inequalities of Apartheid, (Reitzes, and 2009: 147).

The RDP objectives included addressing development and economic growth in the country under the key topics of housing, clean water, electrification, land reform, healthcare and public works. It was drawn up as a people-driven initiative through a process of consultation and joint policy formulation in a process led by the ruling African National Congress (ANC) in consultation with various stakeholders and stakeholder groups in the country.

The government of South Africa set up RDP funding as the purse to which all grants received by the government from various avenues, including donors to fund RDP programmes, was deposited (Reitzes, 2009). Economic policies of the RDP were replaced by macroeconomic

policies focusing on Growth, Employment and Redistribution (GEAR) in 1996. The GEAR programme was put in place to strengthen economic development, broaden employment prospects, and promote redistribution of income, socio-economic opportunities and participatory approaches in favour of the poor in South Africa.

3.6.2 DEA: Environmental programmes

In order to tackle South Africa's socio-economic challenges, the government adopted the outcomes-based approach to improve government performance and providing focus on service delivery. The main goal for EPWP is to alleviate poverty and uplift households, especially those headed by women through job creation, skills development, and use of Small Medium and Micro Enterprises (SMMEs), whilst at the time contributing to the achievement of the departmental mandate.

3.6.3 The Expanded Public Works Programme (EPWP)

The *Expanded Public Works Programme* (EPWP) was launched in South Africa in 2004 as a nationwide programme aimed at contributing to Government's Policy Priorities in terms of decent work and sustainable livelihoods, education, health, rural development, food security and land reform and the fight against crime and corruption. The programme provides an important avenue for labour absorption and income transfers to poor households in the short-to medium-term. It is also a deliberate attempt by public sector bodies to use expenditure on goods and services to create work opportunities for the unemployed. EPWP employs workers on a temporary or on-going basis either by government, by contractors, or by other non-governmental organisations under the Ministerial Conditions of Employment for the EPWP or learnership employment conditions. "Working for" programmes, with high environmental and economic returns on investment, were aligned to the *Expanded Public Works Programme*. Initiatives falling within the scope of work include:

- *Working for Water*: Removal of alien invasive plants.
- *Working for Land*: Removal of bush encroachment.
- *Value Added Industries*: Farleigh eco-furniture factory.
- *Wildlife Economy*: Rehabilitation – erosion control.
- *Environmental Monitors*: Support to conservation management.
- *Working for Wetlands*: Rehabilitation of Wetlands.
- *Working for the Coast*: Cleaning and rehabilitation of coast.
- *People and Parks*: Infrastructure development and rehabilitation of redundant infrastructure.
- *Working for Fire*: Fire prevention and control services.

Provincial and local government have a mandate to ensure implementation of the programmes within their jurisdiction and can apply and receive funding for implementation through the Integrated Grant Provincial Treasury Allocations. Opportunities realised through EPWP funding also catalyse and enable innovative partnership between the private and public sectors, all towards implementing projects driven towards attaining sustainability.

In the context of this study, it is important to point out that in 2008, the *Working for Water Programme* made a policy decision to phase out managing working directly on private land. Some of the reasons for this decision included to promote:

- Ownership and accountability in the management of alien vegetation by the land owners
- A structured approach in the control of priority species envisaged in *CARA* and *NEMBA Acts and Regulations*
- Building of relationships with land owners and the contract alien vegetation clearing teams in order to boost exit strategy opportunities for the contract team workers
- Sharing of cost for clearing of aliens between land owners and the government
- Facilitate a broader engagement with the land owners, including the use of incentives and disincentives to build on other programmes such as *LandCare* for the protection of threatened habitats, wetland conservation and wildlife management, and
- Facilitate development of payments for watershed and catchment services through the involvement of land owners, WfW contractors in the restoration and maintenance of the natural water capital of South Africa among others (DWAF, 2008).

While the policy meant sharing of responsibility between WfW and the land owner, WfW remained with the responsibility for research, monitoring and evaluation of the work and was obliged to allow WfW or its agents to assess work done on the private land. Land owners are required to contribute towards labour costs for the follow up processes in clearing of alien vegetation as well as the sourcing of herbicides.

3.7 Provincial laws and policies

3.7.1 Overview

The Western Cape Government, as a sub-national sphere of government in South Africa, is dealing with the “wicked problem” of rising water demand due to industrial, agricultural and urban expansion. The increasing climate uncertainty heightens the risk of water scarcity due to prolonged drought periods. Natural resource management underpins the long-term

resilience of the Province. Critical natural resources including priority biodiversity areas, ecological infrastructure (strategic water source areas, wetlands, catchments, rivers, etc.) and the coast and estuaries are provincial strategic interests.

To inform development that is sensitive to the negative impacts on the environment, the Provincial Government has developed a number of innovative frameworks with related implementation plans that promote stakeholder engagements and a participatory approach to addressing the “wicked problems”. The section below discusses some of these laws and policies.

3.7.2 Western Cape environmental laws and policies

3.7.2.1 Environmental laws and policies, legislative and other mandates

i) The Constitution of the Western Cape, 1998

The Western Cape Province established its *Constitution* in 1998 informed by the country's *Constitution* of 1996, which is regarded as the supreme law of the country. The *Provincial Constitution* provides the provincial policy directive principles aimed at achieving sustainable development through

- protection of the environment,
- protection and conservation of the natural historical, cultural historical, archaeological and architectural heritage,
- by legislative and other measures, supporting and strengthening the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions; and
- establishing measures for monitoring and supporting of local government in the Western Cape.

These directive principles of provincial policy guide the operations of the government departments in the manner in which they engage other stakeholders such as civil society, the private sector, local communities among others in discharging of the sphere of government's legislative mandate in pursuit of achieving sustainable development.

3.7.2.2 Western Cape Government policy on participation

The Western Cape Government acknowledges the importance of stakeholder engagement and the participatory approach to influence decisions made by government that impact on people's lives. However, it does not have a comprehensive policy framework on public participation. The Province has various legislative and related policy mechanisms that govern

and guide the engagement between the provincial governments, the public, other constituencies such as civil society as well as the other spheres of government.

3.7.2.3 Western Cape plans

i) Western Cape Provincial Strategic Plan

The *Provincial Strategic Plan (PSP) 2014–2019* translates the vision of an “open-opportunity society for all” (Western Cape Government, 2014) into an actionable, measurable policy agenda focused both on tackling the Province’s greatest challenges and on unlocking the full potential of its people. The *PSP* aligns with the *National Development Plan (NDP)*. The *PSP* is guided by the longer-term *OneCape 2040 vision*, which was adopted by the Western Cape Government and other key institutions in the Province in 2013. *OneCape 2040* envisages a transition towards a more inclusive and resilient economic future for the Western Cape region. It sets a common direction to guide planning, action and accountability (Western Cape Government, 2014).

Development and engagement in the Western Cape Government is guided by the five Provincial Strategic Goals (PSGs) to deliver on its vision; and to help realise the objectives of the NDP over its five-year term. The PSGs are set out in the Figure 3.2 below.



Figure 3.2: Provincial Strategic Plan

(Western Cape Government, 2014)

Although all five of the goals are interrelated and interdependent, particularly with Goal 5 as the cross-cutting and transversal across the other four goals, the most relevant goal for this

study is PSG4. PSG4 is committed to improving the resilience, sustainability, quality and inclusivity of the urban and rural settlements in the Province. It seeks to achieve this through

- facilitating improvements in the Province's settlement development and functionality;
- improving management and maintenance of the ecological and agricultural resource-base; and
- improving the climate change response (Western Cape Government, 2014).

The Western Cape Government, through the Department of Environmental Affairs and Development Planning (DEA&DP), has set up work groups to spearhead implementation. Priorities for implementation under PSG4 for the period 2017 to 2019, in line with key challenges that the Province faces, include drought management, water security, climate change response, and integrated human settlements. Several plans and plans of action have been established by the various units with the Provincial Government departments and directorates as vehicles for implementing relevant initiatives for each of the identified issues. Some of these are explained in the following sections.

ii) The Western Cape Provincial Biodiversity Strategy and Action Plan (WC PBSAP)

The *Provincial Biodiversity Strategy and Action Plan (WC PBSAP)* is a strategic mechanism of the Western Cape Provincial Government that aims to ensure that all stakeholders operating in the Province, including the national and provincial government entities, local authorities, NGOs, business and society as a whole, act in a coordinated and collaborative manner with regards to biodiversity conservation, its sustainable use, and the fair and equitable sharing of benefits arising from the use of genetic resources. PBSAP is a ten-year strategy that aligns with the National and Provincial Medium Term Strategic Frameworks 2014-2019 and it acts as the provincial policy driver to achieve the objectives of the National Biodiversity Strategies and Action Plans (NBSAP). It also integrates the delivery of all targets, including the MTSF and delivery of relevant Outcome10 targets.

Participatory and cooperative governance is one of the identified five guiding principles for implementing PBSAP (WCG, 2016). Within the lens of climate change, the PBSAP incorporates principles of EbA as pathways to promote resilience building to the environment and people against severe effects of climate change and variability-related events. The PBSAP also recognises the threat that alien vegetation poses to water security within the Province and has since commenced with a process of developing a Province-wide framework that will inform a coordinated approach in clearing of alien vegetation. The priority focus of the framework is on eliminating alien vegetation in the strategic catchment and water source areas

in the Western Cape. The framework is called the *Ecological Infrastructure Investment Framework* (EIIIF).

iii) *Western Cape Provincial Biodiversity Spatial Plan*

Flowing from WCPBSAP is the *Provincial Biodiversity Spatial Plan* (BSP). The BSP represents the state-of-the-art provincial systematic biodiversity planning product in the Province. It represents the priority biodiversity areas and ecological infrastructure that need to be secured in the long-term. The WCBSP identifies the priority biodiversity areas that are naturally functioning in the Province and thus, informing proactive protection as well as forward planning and decision making, which is fundamental to attaining Goal 4 of the WCG's PSP (2014–2019). The WCG is pursuing mainstreaming interventions to raise the awareness of various stakeholders such as land owners, the private sector, and other government departments of the BSP.

iv) *The Provincial Biodiversity Economy Strategy* (PBES)

Framed within PBSAP is *Provincial Biodiversity Economy Strategy* (PBES). PBES recognises the importance of natural resources and systems in driving the improvement of people's lives and the growth of the economy in the Western Cape. It provides for specific targets, indicators, and actions to set in motion key identified biodiversity economy value chains in a programmatic approach. This will be achieved through exploring and identifying opportunities to collaborate and promote socio-economic development in ways sensitive to the limits of the environment, natural resources within the province while contributing to improved livelihoods. Examples of these include exploring opportunities inherent in the alien vegetation clearing value chain, harvesting and processing of natural resources such as wild flowers and honeybush while also improving the livelihood systems particularly of individuals from previously disadvantaged backgrounds in the Province.

v) *Ecological Infrastructure Investment Framework* (EIIIF)

Informed by the PBSAP, the EIIIF is the Province's flagship initiative to promote management of ecological infrastructure and alien invasive species. It was deemed imperative to develop a provincial plan for alien threats, which recognises distribution and density patterns, key focal areas of concern in terms of threats to ecological infrastructure, and opportunities for alien biomass economies. The framework has also been set up to address and ameliorate the effects of drought as water security had been identified as an enterprise risk in the Province, this, given that the Province experienced severe drought, the impacts that were most felt in 2017/2018. EIIIF was established to facilitate the collaboration and coordination between all relevant sectors including the DEA (NRM), DEA&DP, DoA, DEDAT, the Agricultural Research

Council (ARC), the Council for Scientific and Industrial Research (CSIR), academic institutions, landscape initiatives, organised agriculture, land owners, and NGOs in as far as promoting water security, conservation, restoration and alien clearing in as far as delivering goods and services (e.g. water), jobs and safe living conditions. The framework was also set up to provide strategic guidance to financial investment towards better managed of water catchments and well-maintained ecological infrastructure in the Province.

vi) *Breede River Environmental Resource Protection Plans (BERPP)*

Closely linked to the EIIF, and informed by the WC SWMP and efforts to address the escalating demand for water through protecting and rehabilitating river systems and improving ground water recharge, the DEA&DP has developed the *Breede River Environmental Resource Protection Plan (ERPP)*. The *Breede ERPP* was developed aligned with the strategies that fall within the ambit of the broader Breede-Gouritz Catchment Management Agency (BGCMA) and in collaboration with key water users and other key stakeholders in 2017/2018. Objectives of the Programme that is in line with this research include:

- Promoting sustainable land-use practices across all sectors.
- Reducing the negative impact of agriculture on the Breede River's water quality to acceptable levels and to promote sustainable agriculture.
- Ensuring sustainable resource use efficiency and ecological integrity.
- Protecting water source areas in the upper Breede catchment area, contributing to water security through clearing of alien vegetation and rehabilitation of riparian areas and establishing of a water stewardship programme through collaboration with stakeholders (Western Cape Government, 2017b).

Through the Breede ERPP, DEA&DP is also involved in the operations and running of the Kluitjieskraal Nursery in Wolseley. Propagation of the indigenous plants takes place at the nursery and the plants are given to landowners and schools to plant in efforts to restore and rehabilitate the degraded landscape in the Upper Breede catchment.

vii) *Western Cape Climate Change Response Framework and Implementation Plan for the Agricultural Sector*

The WCG recognises the important role of the agricultural sector in the provincial economy and for food security. The sector has considerable potential to drive economic growth, create jobs and promote social development in rural areas. At the same time, the WCG has identified the agricultural sector as being particularly vulnerable to the effects of climate change. Climate projections for the region indicate continued warming of 1.5°C to 3°C across the whole

province by 2050, with some moderation of increases along coastal areas (SoEOR for WC, 2018: 1). As a result, the WCG (the Department of Agriculture and the Department of Environmental Affairs and Development Planning) partnered with the University of Cape Town's African Climate and Development Initiative. Together, they developed the *Western Cape Climate Change Response Framework and Implementation Plan for the Agricultural Sector*. The plan is widely known as the *SmartAgri Plan*. Smart Agriculture for climate resilience (SmartAgri) responds to the need for a practical and relevant climate change response plan specifically for the agricultural sector of the Western Cape Province. SmartAgri also aligns with the current five-year *Provincial Strategic Plan* and the *WCG: Agriculture Strategic Goals*. One of the seven Goals is "Optimise the sustainable utilisation of water and land resources to increase climate-smart agricultural production". Owing to its position as a highly vulnerable sector, the agricultural sector is the first sector in the Province to benefit from a sectoral climate change response framework and plan.

Participation and stakeholder engagement has been a key tenet driving implementation of the strategy. *SmartAgri* advocates for actors in the public and private sector, including land owners and farmers to work together towards a longer-term goal of sectoral strength and support for the vulnerable during times of extreme weather events and periods during which debilitating effects of climate change are experienced. Stakeholders that have collaborated with the Western Cape Government in implementing *SmartAgri* include LandCare, CapeNature, district municipalities, catchment management agencies and NGOs such as WWF-SA and Living Lands. There has also been active participation from the inception phase by farmers and other land owners, agri-workers and local communities.

viii) *Western Cape Provincial Spatial Development Framework (SDF)*

The Western Cape Provincial Government developed a spatial planning and land use management tool in 2014. The tool provides a transversal graphical representation of the Province's spatial long-term vision within the context of the Provincial plans and development strategies. The SDF provides the bridge between the plans, policies and strategies of local governments and district municipalities in the Western Cape and how they fit into the bigger picture of the national government's development strategies, plans and policies.

The SDF is premised within the *OneCape 2040's* vision. The ambitious *OneCape 2040* aspires to achieve "a highly skilled, innovation-driven, resource efficient, connected, high opportunity and collaborative society for the Western Cape" by 2040. Ideals, both for the *SDF* and the *OneCape2040* place strong emphasis on stakeholder engagement and a participatory

approach to inform short- to long-term development plans as well as the related implementation of initiatives in the Province.

ix) *Western Cape Sustainable Water Management Plan (WC SWMP)*

One of the strategic plans is the *Western Cape Sustainable Water Management Plan (WC SWMP)*, which seeks to enable improved water resilience in the Province within the context of development and climate change. The first edition of the SWMP was launched in 2012 and updated in 2017. The updated *WC SWMP 2017* defines a pathway towards good governance for water resilience in the Western Cape Province for the period 2017 to 2022. In the context of one of the worst droughts in the Western Cape, with three consecutive years of low rainfall since 2015, the revised *WC SWMP* emphasises the need for improved water resilience planning, including stronger integration of climate change predictions despite the associated uncertainties (DEA&DP, 2018).

The Plan, which has four strategic goals, focuses on communication, water quality, water quantity and finally, the goal that underpins the other three – governance. To enable attainment of the goals, each goal has four strategic objectives. Given prominence in the objectives is the issue of promoting good stewardship practice by both individuals and the collective society, ensuring that there is stakeholder engagement and working relationships throughout the Provincial Government and vertical alignment with other spheres of government, extending to also include research institutions, the private sector and communities. The Plan identifies 12 Focus Area, of which two that are relevant for this research will be discussed in detail. These are

- cooperative governance, which emphasises the importance of collaboration to work towards the common mandate of sustainable and equitable water security for the Province; and
- ecological infrastructure with a key focus on the protection and rehabilitation of the ecology and health of river catchment areas and ground water resources through effective management of alien vegetation and riparian restoration (WCG, 2017).

Figure 3.3 below is a representation of the four goals and how they relate to the 12 focus areas supporting them:

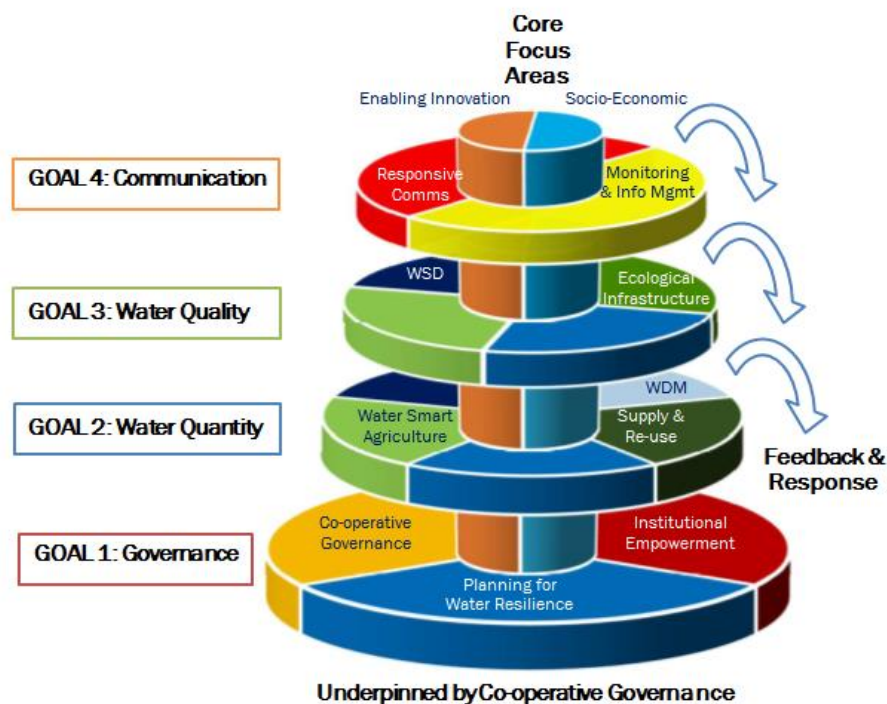


Figure 3.3: Four goals of the Western Cape Sustainable Water Management Plan and how they relate to the 12 support focus areas

(Western Cape Government, 2017a)

Cognisant of the role of engaging the diversity of stakeholders, including researchers, policy makers and local communities, the WCG has revised the *WC SWMP* to embrace a new institutional structure that embraces focus groups. These focus groups are tasked with identifying and proposing solutions to challenges facing the Province with regards to access and management of water and water resources. Examples of these groups include the Wetlands Forum, Fynbos Forum, and all of which are grounded in the provincial-wide Freshwater Forum. The purpose of having the Freshwater Forum as the fulcrum of other smaller focus groups was to ensure coordination and minimise duplication of efforts in planning for and implementing projects.

3.7.2.4 Programmes, projects and other relevant initiatives

i) Freshwater Forum

The Freshwater Forum plays the role of communication, planning, aligning through prioritising, facilitating and incentivising, which leads to the coordinated action of improving ecological infrastructure and the rehabilitation of priority catchment areas (strategic water source areas) within the Province. The Forum draws strength and information from partnerships between

Western Cape Provincial Departments and other spheres of Government, the private sector, research, academia, landowners and organised agriculture, to name but a few. In the light of promoting the participatory approach and formal and informal communication, the Forum advocates for a motivated and driven process, which is required to establish the trust and support upon which partnerships are based. This is achieved through convening regular face-to-face engagements that take the form of workshops, meetings or dialogues.

Due to the diversity in membership and voluntary nature of participation, it was also agreed that the Freshwater Forum be recognised as the vehicle for driving and achieving integration in delivery on the *WC SWMP*.

ii) *Biosphere Reserves*

In the context of participation in environmental management, it is important to mention the principles and management approach of biosphere reserves as they are relevant for the study. Biosphere reserves are classified as world recognised areas of terrestrial and coastal ecosystems that contribute towards reconciling conservation of biodiversity and the sustainable management and use of the environment by man. There are a number of international agreements and UN policies on biosphere reserves, such as the 1974 *UN Man in Biosphere Programme*, the 1976 *Biosphere Reserve Network*; the 1995 *Seville Strategy*; the 2006 *Madrid Declaration and Action Plan*; the 2016 *Lima Action Plan* and 2016 *New Roadmap for the Man in Biosphere (MAB) Programme* (in addition to the 1992 Agenda 21 and 1992 CBD, the 2011 Aichi Biodiversity Targets).

In South Africa, biosphere reserves have evolved as mechanisms that promote symbiotic relationships between man and the environment. Biosphere reserves provide a template for integrated development and management of all land uses in a manner that builds upon and provides comparative economic advantages for all stakeholders involved – ranging from National Government, local and district municipalities and communities. This is through a wide range of initiatives such as conservation expansion programmes, integrated development and planning initiatives, fostering stakeholder partnerships and eco-tourism opportunities. In coming up with the specific biosphere reserve framework, there is extensive stakeholder engagement, which includes discussions with the local governments and communities. Incorporating views from local government, farmers and community members in the process gives effect to the principle of subsidiarity. This organising principle emphasises the importance of involving and giving a mandate to the smallest, lowest or least centralised competent authority where the project will be run versus nesting the mandate within a central authority. This notion is also echoed by Vanclay and Da Fonte (2011) in their research on

social impact assessments when they mentioned that decision makers need to be willing to enter into a collaborative power-sharing partnership with other stakeholders, an arrangement which will, in turn, lead to better engagement and locally relevant solutions from the decision making processes (Vanclay & Da Fonte, 2011).

iii) The LandCare Conservation Agriculture Programme

LandCare is a national programme in South Africa with the aim of restoring and rehabilitating land in both the urban and rural areas towards achieving sustainable development. The National Department of Agriculture is responsible for providing oversight on the programme; deriving its mandate from the *Conservation of Agriculture Resources Act* No 43 of 1983. Its policies were developed and achieved through the formation of partnerships with a wide range of groups from within and outside Government in a process that brought together appropriate upper level policy processes with bottom-up feedback mechanisms.

LandCare adopted Area Wide Planning, which is a comprehensive problem solving process that integrates social, economic and ecological concerns over defined geographical areas. This contributes towards improved environmental health through a natural resource management approach that integrates locally driven initiatives over a wide area, also given that the approach considers the big picture and considers all of the factors that affect the resource issues at a given time. In addition, area-wide planning promotes a participatory approach as it provides stakeholders involved in project design and implementation an opportunity to assess their natural resource, raise concerns and determine what conditions they desire and help formulate pathways to achieve their goals.

The *LandCare* Chapter of the Western Cape is housed within the Western Cape Department of Agriculture and receives funding from both the Western Cape Government's budget and the National *LandCare* project. Projects implemented through *LandCare* in the Western Cape include alien vegetation clearing and area-wide planning. Through this alien vegetation clearing process, *LandCare* facilitates engagement between the alien vegetation clearing contractors and the landowners; while through area-wide planning, other smaller spatial scale focused initiatives are put in place, such as the maintenance management plans (MMPs), which look at the management of environmental impacts relating to a proposed landscape intervention. An MMP must be approved by the Department of Environmental Affairs and Development Planning (DEA&DP) prior to maintenance work being undertaken.

The *River Maintenance Management Plan* guides the process of river and riparian zone management and rehabilitation through various objectives and expected outcomes to ensure

that the river course is transformed and maintained. One challenge noted in implementing the LandCare approach is that it is time consuming due to the intensive extension required to plan and execute projects with previously disadvantaged communities. This raised the need to find and embed personnel to render agricultural extension services to the farmers in target areas.

iv) EPWP in the Western Cape

DEA&DP acts as the lead sector department, providing oversight of the WC EPWP Environment and Culture Sector. As such, it has a mandate to deliver specific targets within this sector working in concert with CapeNature, the public implementing entity. Through the EPWP, DEA&DP focuses on recruitment of the most vulnerable members of society. It has specific targets for women, youth and disabled persons. DEA&DP currently undertakes one dedicated EPWP project namely the *Berg River Improvement Plan*. The EPWP project is targeted to create 20 work opportunities. The drought experienced during the period 2017/2018 presented challenges regarding job creation and employment opportunities resulting in 30 local people working for contractors involved in alien vegetation clearing, having lost their jobs as a result.

v) Upper Breede Collaborative Extension Group (UBCEG)

The Upper Breede Collaborative Extension Group (UBCEG) is a landscape initiative in the Cape Winelands that brings partners in agriculture and conservation together. This informal group convenes local, public and private stakeholders in the upper Breede River Valley to discuss and address a variety of problems around land management in the Breede River Valley. UBCEG has a footprint of around 140 000 square kilometres, including pristine conservation land and some of the country's most productive land along the Upper Breede Catchment area. The group was established to address many challenges in the area in landscape management, mainly as a result of the lack of coordination "between different government departments and the absence of a collective vision between the spheres of government and the landowners in the Upper Breede area" (SANBI, 2018).

UBCEG not only provides the platform to inform framing of locally responsive solutions but also allows networking, dialogue and social learning among the various stakeholders and in the process allowing people to build trust amongst each other as well as building bridges between the respective offices represented in the Group (SANBI, 2018). The *Wolseley Water Stewardship Initiative* through the WWUA is nested within UBCEG. There are established lines of communication between the two institutions as well as a healthy relationship of knowledge sharing.

The Global Environmental Facility (GEF) launched a project entitled *Ecological Infrastructure for Water Security Project* in 2018. The project seeks to bring investment in the management, maintenance and restoration of ecosystems into the planning, financing and development in the water sector for improved water security. It is envisaged that such investments will contribute towards a just and inclusive development in South Africa. Project implementation is through a suite of partnerships involving several other public, private and civil society organisations, such as the DWS, the Water Research Commission and WWF-SA. Such collaboration is intended to create a platform to effect social transformation through provision of credible evidence and quality research that prioritises the integration of biodiversity and ecosystem services into the water value chain. The intended result is improvement in the quality and quantity of water, which is enhanced through maintenance of healthy wetlands, rivers and groundwater ecosystems in the landscape. The project is being piloted in the Berg-Breede catchments in the Western Cape Province and the Greater uMngeni catchment in KwaZulu Natal.

vi) *WWF- water stewardship*

WWF-South Africa is implementing water stewardship initiatives in South Africa. The Alliance for Water Stewardship (2012) defined water stewardship as “the use of water that is socially equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site and catchment-based actions” (Colvin *et al.*, 2015). Water stewardship focuses on engaging those who do not hold a government mandate to manage water resources or water infrastructure and enabling them to contribute positively to water security. For business, this means a progression of improved water use and reduced water-related impacts of internal and value chain operations. More importantly, it is a commitment to the sustainable management of shared water resources in the public interest through collective action with other businesses, governments, NGOs and communities (WWF 2013). WWF-SA spearheaded the implementation of a water stewardship initiative in Wolseley. The initiative complements Government efforts through supporting land owners to manage and control alien vegetation on their properties.

3.7.2.5 Private sector involvement

i) *Corporate Social Responsibility*

Corporate Social Responsibility (CSR) describes the broader solution to the triple-bottom-line matters of the 3Ps – profit, people and planet. The term refers to an organisation’s total responsibility towards the business environment in which it operates and contributes towards social upliftment and environmental transformation (Ndhlovu, 2011).

Corporate Social Investment (CSI) is one approach through which a company may realise its Corporate Social Responsibility. CSI refers to instances whereby businesses use money or resources for projects that improve the world around them, without there necessarily being a direct financial benefit to the company. This approach has relevance for this study as Woolworths, through WWF-SA, contributed resources towards addressing environmental challenges experienced in the Upper Breede Catchment area. Farmers in the Upper Breede area supplied the retail store with stone fruit and vegetables among other supplies.

ii) *Ceres Business Initiative*

The *Ceres Business Initiative* (CBI), which represents the major commercial farmers and businesses in Ceres and surrounding areas, signed a memorandum of understanding on 6 May 2014 with the Witzenberg Municipality (Witzenberg Municipality, 2018). The agreement denotes that CBI, as part of its CSR, will support environmental and social upliftment initiatives in the municipality. The business forum, in partnership with the municipality, is in the process of developing business plans to expand the economic base of Witzenberg, with particular emphasis being placed on empowering previously disadvantaged groups. This holds huge potential for the entire region and will also be implemented with the advisory and financial support of national departments and agencies, including the National Department of Land and Rural Development (NDLRD), Development Bank of South Africa (DBSA), Department of Water Affairs (DWA), etc. The NDLRD has already allocated R22 million towards projects in the Witzenberg Municipality.

3.8 Summary

The chapter presented and discussed decisions, resolutions, policies and strategies focusing either on aspects of environmental management such as biodiversity, alien vegetation clearing, and water management and/or the importance given to participations and stakeholder engagement towards achieving sustainable development. The focus started off at the international level, cascading down to regional, national and sub-national level; hence showing how these instruments are aligned towards addressing a common agenda. Also presented and outlined were various programmes addressing the issue of environmental sustainability as implemented by the private sector and voluntary stakeholders in order to complement mainstream efforts implemented by government departments.

CHAPTER 4

THE CASE STUDY: WOLSELEY WATER STEWARDSHIP INITIATIVE IN THE CAPE WINELANDS REGION

4.1 Introduction

Presented in this chapter is the case study of the WWSI. The historical, geographical and background information is provided to give the context within which the WWSI operates. The chapter further draws from the literature presented in Chapter 2 and the regulatory and policy framework as presented in Chapter 3 to further give a context of the WWSI and how the initiative embraces the participatory approach. The chapter delves into the data collection process and presentation of findings from the data collecting exercise. These include a narrative on the factors and elements that led to the formation of WWSI, a summary of the demographics of the stakeholders engaged in the study, progress and achievements noted to date, respondents' knowledge of sustainable development and environmental management, as well as an overview of the respondents' perceptions about the WWSI model and engagement thereof.

4.2 Description of the study area

Wolseley is located in the Breede Valley in Witzenberg Municipality. The municipality falls within the broader Cape Winelands District Municipality of the Western Cape Province of South Africa. Neighbouring towns and hamlets in Witzenberg include Tulbagh, Ceres, Nduli, Bella Vista, Prince Alfred Hamlet and Op-die-Berg. While Witzenberg Municipality is best known for its fruit and wine products, it is also well-known for producing other agriculture-linked products such as olives, grain, beef and pork products (Witzenberg Municipality, 2018). Refer to figure 4.1 below for the location of Wolseley in the Cape Winelands District Municipality.

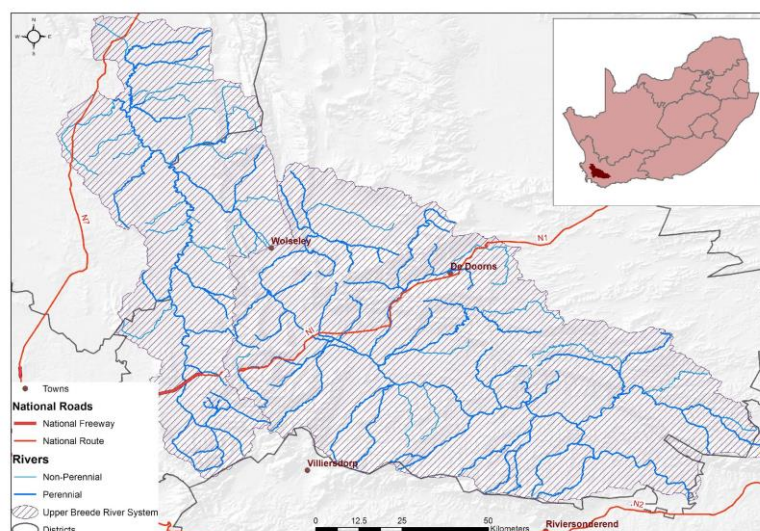


Figure 4.1: Location of Wolseley in the Cape Winelands District Municipality

Much of this productivity and livelihood systems in the region revolve around water-dependent agriculture. This water is drawn either from the surrounding tributaries or sections of the Upper Breede River. However, a key threat to the water availability, and hence sustainability of the agriculture, is invasion of alien vegetation, particularly in mountain catchment areas (Mucina, Jürgens, Le Roux, Schmiedel, Esler, Powrie, Desmet, Milton, Boucher, Ellis, Lambrechts, Ward, Manning, & Midgley, 2006; Rebelo, Boucher, Helme, Mucina, Rutherford, Smit, Powrie, Ellis, Jan, Scott, Radloff, Steven, Richardson, Ward, Procheş, Oliver, Manning, McDonald, Janssen, Walton, Roux, Skowno, & Simon, 2006; Pool-Stanvliet, Duffell-Canham, Pence & Smart, 2017).

4.2.1 Socio-economic analysis profile

Activities in the settlements within the municipality are essentially agriculture-based of which Wolseley, Tulbagh, Ceres and Prince Alfred Hamlet are recognised as “agricultural service centres”. Agri-processing related to wine, fruit, vegetables and other niche products takes place within the area. The principal socio-economic status for Witzenberg Municipality from the Draft IDP 2018-2019 for the municipality, were identified as follows:

- Seasonal labour and social grant dependency
- Unemployment: 5 339 people (with a low unemployment rate of 7% in 2016)
- People in poverty: 24 231 or 18.55% of the total population
- Skills shortage (illiteracy rate = 36%)
- Youthful population: 56,8% of the population is under 30 years of age
- Population concentration: 46, 9% rural; 53, 1% urban.

The population disaggregated by gender is presented in the Figure 4.2 and Table 4.1 below:

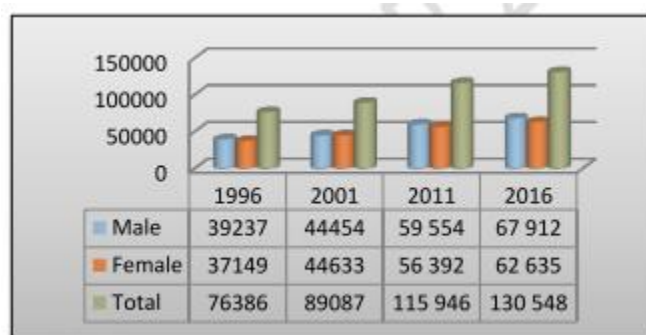


Figure 4.2: Records of population data in Witzenberg Municipality

Source: Statistics South Africa, 2018

Table 4.1: Records of population data in Witzenberg Municipality

	1996	2001	2011	2016
Male	39237	44454	59554	67912
Female	37149	44633	56392	62635
Total	76386	89087	115946	130548
Male %	51,4	49,9	51,4	52,0
Female %	48,6	50,1	48,6	48,0

Source: Statistics South Africa, 2018

Wolseley comprises two main locations: Montana and Pine Valley, whose combined population from the 2001 Census was estimated at 12 130 (StatsSA, 2018).

4.2.2 Weather and climate

Witzenberg Municipality experiences a Mediterranean climate characterised by hot and dry summer days. Winds are seasonal and generally north-westerly or south-easterly. The average annual rainfall is about 575 mm/annum and the average temperature range is 16.7°C to 29.7°C. Table 4.2 below presents the climatic conditions experienced within the municipality.

Table 4.2: Climatic conditions in Witzenberg Municipality

CLIMATIC CONDITIONS			
	<i>Average rainfall</i>	<i>Average Min Temp</i>	<i>Average Max Temp</i>
Ceres	<ul style="list-style-type: none"> • ± 599 mm/annum • Lowest: ± 9 mm in February • Highest: ± 117 mm in June 	Average minimum temperature drops to $\pm 3.8^{\circ}\text{C}$ in July.	Daily average maximum temperature ranges from $\pm 15.2^{\circ}\text{C}$ in July to $\pm 28.2^{\circ}\text{C}$ in February.
Prince Alfred's Hamlet	<ul style="list-style-type: none"> • ± 614 mm/annum • Lowest: ± 9 mm in February • Highest: ± 116 mm in June 	Average minimum temperature drops to $\pm 3.5^{\circ}\text{C}$ in July.	Daily average maximum temperature ranges from $\pm 14.7^{\circ}\text{C}$ in July to $\pm 27.9^{\circ}\text{C}$ in February.
Wolseley	<ul style="list-style-type: none"> • ± 575 mm/annum • Lowest: ± 10 mm in January • Highest: ± 107 mm in June 	Average minimum temperature drops to $\pm 4.7^{\circ}\text{C}$ in July.	Daily average maximum temperature ranges from $\pm 16.7^{\circ}\text{C}$ in July to $\pm 29.7^{\circ}\text{C}$ in February.
Tulbagh	<ul style="list-style-type: none"> • ± 567 mm/annum • Lowest: ± 11 mm in January • Highest: ± 105 mm in June 	Average minimum temperature drops to $\pm 5.2^{\circ}\text{C}$ in July.	Daily average maximum temperature ranges from $\pm 17.3^{\circ}\text{C}$ in July to $\pm 30.8^{\circ}\text{C}$ in February.

(Source: Witzenberg Municipality, 2018)

The area is well endowed with both public and private natural wealth, including wetlands, fynbos, and mountain ranges among others. Nevertheless, the municipality faces a number of significant threats to the biophysical environment. These include:

- Over consumption of water relative to available resources with parts of rivers often pumped dry during the dry mid-summer. Together with the pollution of water sources in some areas, this problem has a detrimental effect on the natural environment;
- Water quality is negatively affected by farming activities, informal settlements, leaching from landfill sites and unsuitable sewage removal systems that lead to river pollution; and
- Other problems include erosion, soil pollution loss of biodiversity and natural beauty, particularly on the lower mountain slopes through agriculture and infrastructural development (Witzenberg Municipality, 2018).

The municipality adopted the *2017–2022 IDP and Budget Process Plan* on 27 July 2016 and the elected Council adopted the review on 2 September 2016. The *IDP* acknowledges the important role of the participatory approach in decision making noting that “[p]ublic participation allows the municipality and the community to focus on itself and develop a future-orientated vision and mission, proactively positioning itself and adapting and learning from an ever-changing environment” (Witzenberg Municipality, 2018).

4.2.3 Environmental management in Witzenberg Municipality

Issues relating to environmental management are handled by the municipality’s Climate Change Advisory Board, which was set up in September 2016. The advisory board has prioritised the following points, among others, in the context of improving environmental management in the area:

- Developing a protection programme for indigenous vegetation, establish protected areas to protect the biological diversity and strengthen environmental planning. These programmes will complement the current *EPWP Invasive Alien Vegetation Management Programme*, which is focused on improving the environmental and socio-economic upliftment of the previously marginalised people in the area while controlling and managing the spread of alien vegetation.
- Creating job opportunities related to environmental management such as green/conservation tourism, waste management (youth in waste), storm water maintenance (EPWP), alien vegetation clearing and reed control in the Breede River and general cleaning and greening of towns.
- Aligning water supply strategies such as groundwater and threats to this resource from a drying and warming climate.

4.3 Research findings

4.3.1 Collaboration on alien clearing to enhance sustainable water security in the Upper Breede

4.3.1.1 Overview

The following section provides a narrative on the formation of the WWSI as gathered from the interviews with targeted stakeholders and institutions in the data collection process for the study. The latter section presents results from the data collection exercise for the study.

The narrative section was informed by insights collected from representatives of the following organisations:

- DEA&DP
- WWUA
- DoA: LandCare Programme
- WWF-SA

In addition to the three organisations listed above, the study drew insights from the following clusters as well;

- Land owners who are either active farmers or in the hospitality industry in the area
- Contractors involved in the clearing of alien vegetation
- Selected employees of the contractors mentioned above
- Representatives involved in the EPWP

4.3.1.2 Context of the Wolseley Water Stewardship Initiative (WWSI)

The Western Cape Department of Agriculture: LandCare has had a long history in implementing alien vegetation clearing initiatives in the Upper Breede River Catchment area dating back to before 2006, with support from the land owners and the BGCMA. Most of the efforts have been carried out on an ad-hoc basis depending on the availability of funding. In 2006, LandCare received funding from DEA towards the clearing process. The LandCare programme decided to expand its geographic reach to clearing of alien vegetation at higher altitudes on the mountain slopes of the Witzenberg Mountain range to the south of Wolseley. The mountain ranges were infested with pine trees, thus posing threats of high intensity fires due to the added biomass fuel load (Colvin *et al.*, 2015; Le Maitre *et al.*, 2016; BGCMA, 2017). This was of particular concern as fire is integral in the growth and survival of fynbos vegetation. Effects of the fire have a negative impact on the condition of the soil. The soil becomes exposed to erosion in the event of heavy rainfall. Growth of alien invasive vegetation such as pine trees close to the rivers or in the tributaries obstructed the free flow of water and at times forced the river to burst its banks during the rainy season.

DEA provided funding through the LandCare Programme that enabled clearing of the alien vegetation for a period of three consecutive years – 2006 until 2009 – where after no funding was provided. Lack of funding brought the alien vegetation clearing programme to a halt. Regrowth of the alien vegetation was notable in 2009. Effects of the regrowth were further compounded by the fire that broke out in the same year. Post-fire assessment showed that properties and land that had little or no alien vegetation encountered the least damage. The fire served as a trigger for land owners to engage and explore options for a coordinated and structured approach to a clearing initiative, but they lacked the capacity and resources. Land

owners approached LandCare for assistance. In her study, Sommarstrom (2000) mentioned that there needs to be an originating factor of a common challenge that triggers people to collaborate to address an identified common challenge. In this instance, the alien vegetation served as that common challenge that brought various stakeholders to collaborate and seek collective action.

Through facilitated engagement and a dialogue process between BGCMA, the LandCare Programme and the land owners who were actively involved in commercial agriculture in Wolseley, the WWUA was identified as the vehicle through which the collective could engage around alien clearing and landscape management. LandCare was tasked with provision of Secretariat Services. In support of what Danielson (2015: 370) highlighted in his research, people will mobilise and put systems in place to ensure that the environment continues to provide them with the necessary goods and services and the secretariat provided legitimacy (Durham *et al.*, 2014) in implementing the initiative.

4.3.1.3 Wolseley Water User Association (WWUA)

The WWUA had been registered as a Water User Association in terms of the Water Act, 1998 (Act 36 of 1998) but had been dormant. Founding stakeholders of the WWUA included LandCare, the then Breede-Overberg Catchment Management Agency (BOCMA), and the landowners who comprised the Breede River Farmers Association, Organised Agriculture and other land owners in the upper Breede Catchment. Through a collaborative and consultative process, LandCare as the secretariat facilitated a large-scale planning process, drawing insights from the landowners with the support from Witzenberg municipality. Establishing a collaborative platform relies on having good leadership and an institution to facilitate engagement as demonstrated from studies carried out by Maina and Muia (2007), and Warburton *et al.* (2012). Effective leadership also helps stakeholders in defining key issues to address as well as mapping a way to achieving the desired goal. Through the facilitation of LandCare, the stakeholders identified the need to improve and/or maintain the health of the surrounding environment, paying special attention to the riparian areas along the Breede catchment area as a priority.

The engagement entailed a comprehensive problem-solving process that integrated social, economic and ecological concerns raised by the various stakeholders and stakeholder groups. Such an approach is in following with principles identified by Sommarstrom (2000) who mentioned that an effective participatory approach needs to be sensitive, considerate to the values of the people and in the process harness knowledge and information from the diversity of stakeholders. One solution proposed was the need to sustain and improve environmental

health through a participatory natural resource management approach that integrated the existing locally-driven initiatives hence tapping into community wisdom and ensuring that local stakeholders have a sense of ownership in decision making (Durham *et al.*, 2014). The process of defining the solution was led by the land owners with vested interests in the health of their environment; hence implementation of the principle of subsidiarity (Borrini-Feyerabend *et al.*, 2004: 348) as the solutions integrated the concept of locally-led conservation. The engagement was formalised through the signing of the first MoA by the founding stakeholders of the WWUAs in 2013. It is this engagement process that is referred to in the study as the WWSI.

The overall aim for the collaborative network as informed by the stakeholders' identified needs was to ensure continued supply of water from the catchment system through clearing of alien vegetation, and creating employment opportunities especially for previously disadvantaged people within the area. Prioritised issues, as highlighted in the MoA (2013), were to:

- address loss of rare endemic species,
- manage and reduce displacement of indigenous vegetation,
- reduce fire intensity,
- address issues of soil erosion, and
- ensure reducing the interception of catchment runoff downstream and associated downstream impacts on biodiversity and functioning of the aquatic system.

The network was also tasked with addressing aspects of capacity building, sustainable resource management, forming external partnerships and improving awareness on the importance of healthy environment and the ecosystem goods and services offered. The aforementioned factors have all been identified in literature as important aspects to consider in the light of ensuring longevity when implementing initiatives that require participation especially of local stakeholders (Fish *et al.*, 2011). The then BOCMA (currently BGCMA) served as the vehicle through which funding from other partners and stakeholders would be channelled towards implementation of operational and administrative functions for the initiative/collaboration (Signed MoA, 2013). In order to ensure that there was funding to support the implementation; both the BOCMA and LandCare were required to contribute financially through allocating an annual budget towards the operations of the WWSI. LandCare was further assigned the responsibility of monitoring and evaluating the progress in implementing the project, building on the long-term experience in facilitating alien vegetation clearing in Wolseley. LandCare was also tasked with submitting quarterly progress reports to BOCMA, reporting on employment creation opportunities to the Department of Public Works

as per the requirements of the Expanded Public Works Programme as well as serve as the Secretariat for the initiative. Such an arrangement gave legitimacy to the initiative as indicated in the research by Durham *et al.* (2014).

As the coordinating entity for the WWSI, the WWUA operations, as noted in the initial MoA, included:

- ensuring minimum wastage of water in the area of jurisdiction
- exercising general supervision over water resources and waterworks
- providing of catchment management services to and on behalf of the BGCMA

The land owners, through the WWUA, participated through entering into alien vegetation clearing contracts as well as dedicating an annual budget towards the initiative. The contributions were viewed as a driver to promote ownership of the initiative by the land owners as they would be contributing financially. The funding was channelled towards payment of the team to carry out the clearing of alien vegetation on properties along the riparian zone of the Breede River. Since the MoA and entering into contracts had been a consultative process with input from the land owners, there was little resistance from the land owners to paying the required amount. This is supported by Vanclay and Da Fonte (2011) who indicated that local stakeholders are likely to volunteer their services and resources in project implementation when participatory approach is employed as they share a sense of ownership in the project. Communication between the landowners and the initiative was facilitated through the WWUA.

Since the WWUA would be the direct recipient of the funding for project implementation, it was requested to commit to effective, efficient and transparent financial arrangements and to put internal control systems in place regarding good governance and administering financial matters.

Figure 4.3 below shows the organogram of the initiative at the signing of the first MoA in 2013.

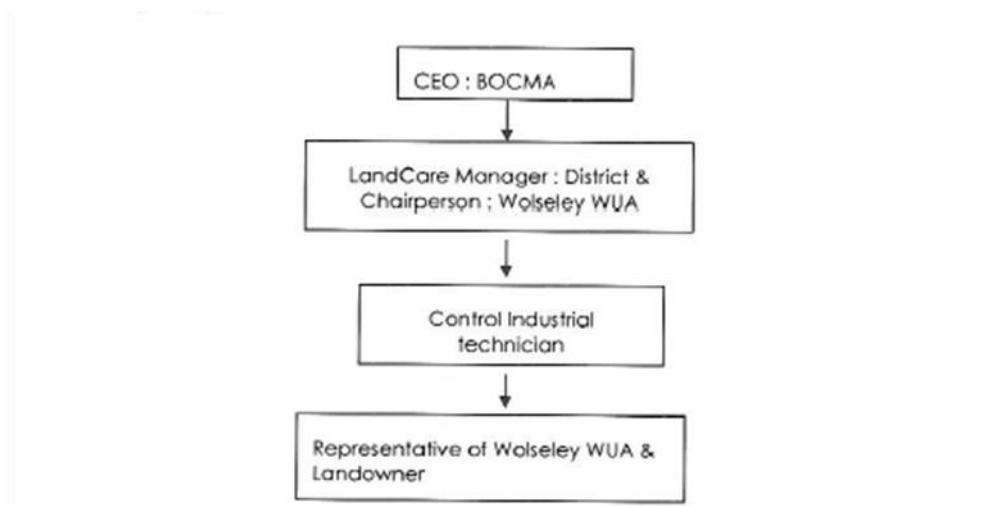


Figure 4.3: WWUA organisational structure

(Source Signed MoA, 2013)

Targets set out in the initial MoA signed in 2013 included:

Social: Creating employment for 40 people who would receive training on alien vegetation clearing prior to being enrolled.

Environmental: Officials from BOCMA and the Department of Agriculture Western Cape: LandCare jointly signed off on contracted areas after successful inspection of the cleared areas has been carried out with each landowner. Clearing agreements were signed with the individual landowners wherein land owners committed themselves to keeping the area clear of further infestation after the initial clearing.

Economic: Partnerships were created between landowners and existing wood contractors regarding the selling of firewood to the local communities in the neighbouring towns. Permanent jobs or business opportunities were created through skills development and training, creating secondary industries in the clearing of alien value chain. At least two permanent contractor teams were set to be established in Wolseley.

Agreeing upfront on roles and responsibilities, as carried out at the inception of the WWSI, was very crucial in ensuring transparency and accountability within a network (Sterling *et al.*, 2017; Durham *et al.*, 2014). In addition, such practices served as a basis to mitigate and manage conflicts within the initiative (Reed *et al.*, 2017).

To attain legitimacy, LandCare ensured that all the activities and set targets were strongly aligned with realising the Western Province Strategic Plans as well as meeting the national obligations. Through the MTSF, the initiative was seen as linking directly to the indicators of National Outcome 10: Environmental assets and natural resources that are well protected and continually enhanced, as well as National Outcome 7: Vibrant equitable and sustainable rural communities and food security. The open and transparent engagement further strengthened participation and commitments by the land owners, most of whom were farmers and hence would directly benefit from efforts to support sustained availability of water for their produce; hence speaking to the principle of relevance of an initiative in responding to identified needs (Durham *et al.*, 2014).

The authorised area of operation, as per the initial MoA, was delineated as the riparian zones from the east of Witbrug in Michell's Pass, through the Wolseley Valley abutting the Breede River, down to the south of the Romans River tributary. Some of the areas are shown in the map below.



Figure 4.4: Geographic area footprint of the WWSI at inception

The boundaries for the operating areas were not cast in stone as these could be extended to include any areas placed under the supervision of the WWUA by the responsible authority to implement directives and exercise functions on behalf of the responsible authority, which was the BOCMA at the time.

i) *Implementation phase of the WWSI*

The years following 2013 noted an increase and expansion of the network. The LandCare Programme managed to contact and expand the network through sending emails to farmers and encouraging them to share the vision and noted results from the initiative with their neighbours through the various avenues including the farmers' annual general meetings. Since the proposal had been raised with their fellow farmers it was not difficult to convince those who were not part of the initiative to join. However, upon joining, each farmer was requested to commit to setting aside an annual budget towards the follow-up process. The arrangement was for the provincial Department of Agriculture through LandCare to implement the initial clearing of alien vegetation on the identified property. The Department would also contribute 80% of the total cost for the follow-up processes of alien clearing while the farmer contributed the remaining 20% (WC DOA, personal communication, 22 August 2018).

As the initial interventions took off in 2013, the WWSI also managed to secure additional funding from the national Department of Agriculture. The funding was directed towards development of the River Maintenance Management Plans (MMPs). River MMP is a management tool designed to guide the way in which a river system would be maintained in order to promote better control and flow of the river system while lessening the negative ecological impacts the river may have on the surrounding systems (Schachtschneider, 2016). Implementing the RMMP and the alien vegetation clearing processes in parallel with each other benefitted the land owners as the processes provided good awareness on sustainable environmental management while they also ticked the boxes in NEMA legislation that requires the land owner to manage alien vegetation on their properties.

In addition to the River MMP, the Western Cape Department of Agriculture also managed to develop Aerial Ward Plans, which provided a more integrated picture on the spread of the aliens on the landscape. The tool was used for prioritising areas for alien vegetation clearing. Important to note was that alien clearing was carried out only with the willing farmers. If a farmer was not willing to contribute the 20% of the budget towards the follow-up processes, then they could not become part of the initiative. From the information provided in the sections above, availability of funding, access to information, effective communication (Schein, 2004), inclusion and involvement (Volger *et al.*, 2017) and coordination were important elements that gave the initiative a firm foundation.

Images in Figure 4.5 below show photos from two neighbouring land owners. To the left is part of the river system where clearing of alien vegetation took place. This was followed by planting of fynbos vegetation as part of the restoration process. To the right is a picture for the

neighbouring land owner who is not yet affiliated with the WWSI. As can be noted, there is in stream growth of alien vegetation, as well as visibility of alien vegetation on the river banks.



Figure 4.5: Landscapes from neighbouring properties

On the left is land that has been cleared of alien vegetation and to the right is a river system where clearing of alien vegetation has not taken place.

It is important to also note that the WWSI promotes engagement with land owners through the WWUA Programme Coordinator on the amount of alien vegetation to be cleared. This flexibility allowed farmers to remain with a few trees that they require for several reasons including serving as wind breaks or having shade for their water pumps or for any other reason that LandCare deems valid. This approach is in contrast to the prescriptive approach of DEA that states that landowners have to completely clear their property of alien vegetation. This open communication, sensitivity and flexibility of the LandCare Programme contributed to trust building between the land owners and other partners in the WWSI. The land owners are also encouraged to replace the cleared land with indigenous plant species sourced from the local Kluitjieskraal Nursery. Not only has this increased the interest of the landowners' knowledge on fynbos and the restoration process but they have even gone ahead and planted more of the local trees or plants than had been required because they feel it was the right thing to do.

As of August 2018, the time of data collection for the study, there had been six MoAs signed between the BGCMA, WWUA and LandCare since 2013. Each renewal of the MoA recommits

the founding stakeholders, BGCMA, WC DoA: LandCare and the WWUA to supporting the collective action on alien clearing of the Upper Breede River system (WC DOA, personal communication, 22 August 2018). It was explained that LandCare has since graduated from just being a signatory to the MoA and is being referred to in the MoA as playing a monitoring and evaluating role. The estimated value of the six MoAs signed to date is between ZAR 3 and 4 million, while the total amount that LandCare has contributed to development and updating of the River MMPs is estimated to be between ZAR 280 000 and ZAR 300 000 (WC DOA, personal communication, 22 August 2018). Figure 4.6 below presents a timeline of activities and engagement on alien vegetation clearing in Wolseley.

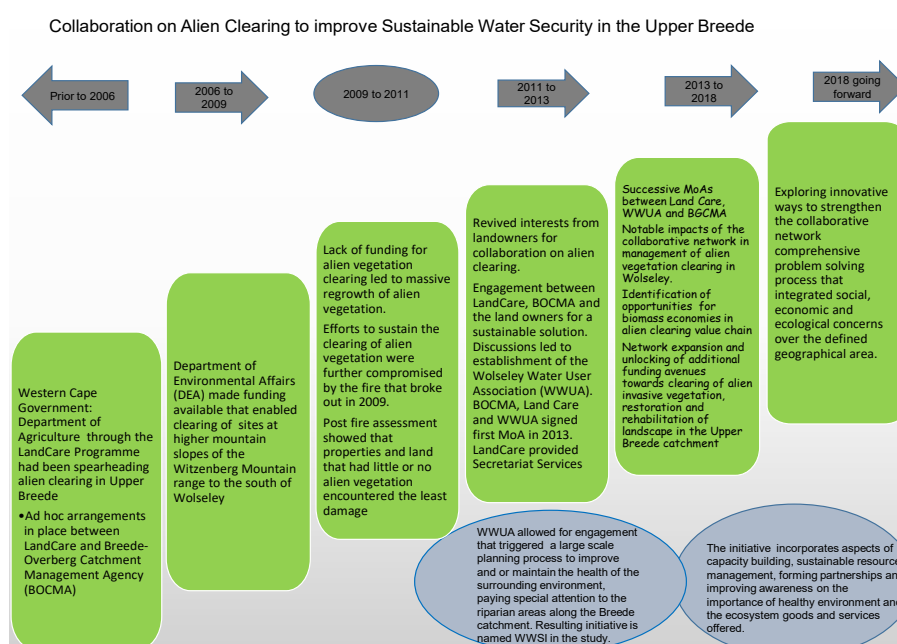


Figure 4.6: Timeline showing progress of events in establishing the WWSI

Building on the established track record, with a clearly defined purpose and positive impact on the landscape relating to success in managing alien vegetation in the catchment, the WWSI managed to also receive support from the Western Cape Government Department of Environmental Affairs and Development Planning (DEA&DP). The partnership between DEA&DP and the WWSI was established in 2016. The DEA&DP noted the important role the initiative played in coordinating communication and implementation of activities linked to alien vegetation clearing and the rehabilitation processes – which are encapsulated in the Western Cape’s Strategic Water Management Plan and the Western Cape Biodiversity Strategy and Action Plan. In 2016, the DEA&DP aligned their funding to the value of ZAR 3.5 million towards the initiative. The money was directed towards reinforcing rehabilitation and restoration of the

Upper Breede Catchment Area, one of DEA&DP's prioritised water source areas through the BERPP (DEA&DP, personal communication, 17 August 2018). Rehabilitation of the BERPP is also a key target output in implementing the Western Cape Sustainable Water Management Plan 2017 to 2022 and in part contributes towards meeting targets set in the Western Cape Government's *Climate Change Response Strategy* and the Provincial Biodiversity Strategy and Action Plan (PBSAP).

DEA&DP implemented the Riparian Zone Rehabilitation Programme which focused on propagation and planting of selected indigenous and appropriate plant species within the Breede river catchment. These plants were then given to landowners and schools for replanting. The programme was operated from the Kluitjieskraal Nursery. As of August 2018, around 500 000 indigenous plants had been introduced in areas along the Upper Breede Catchment Area, an area which also encompasses Wolseley (DEA&DP, personal communication, 17 August 2018). The DEA&DP continues to actively contribute towards project development, funding and exploration of opportunities for continuous improvement in the collective approach to the clearing of alien vegetation, restoration and rehabilitation of the catchment management.

The initiative also drew value from being a member of the network UBCEG. Several institutions on the WWSI and individuals in the network were also affiliated to UBCEG. As a network of networks, UBCEG has played a catalytic role in giving exposure of the initiative to other possible funding opportunities. Examples of these are explained below:

4.3.1.4 Programme coordinator as a key catalyst in WWSI engagement processes

WWF-SA is a member of UBCEG. WWF-South Africa, through the Water Stewardship Programme, works very closely through providing advice and support to the retail chain Woolworths' initiatives to reinvest back into the society. WWF-SA does not operate on landscape level, but rather provides technical support. Examples of the technical support it provides for landscape management include calculation of condensed hectares recovered through alien clearing, facilitating links between landowners and corporates interested in addressing environmental issues through their CSR portfolios. As a member of UBCEG and working with Woolworths on the Water Stewardship Programme, WWF-SA was able to link the opportunity presented by risk posed by alien vegetation and related water risk to agricultural producers and farmers in the Cape Winelands region. The farmers supplied Woolworth's retail store with fruit and other fresh produce.

WWF-SA negotiated with the retail store to initiate and create a position for a Programme Coordinator, with funding for the position drawn from Woolworth's CSR portfolio. The retail chain store confirmed funding for the Programme Coordinator's position through WWF-SA for four years commencing in 2017. In the Agreement of Service entered into between WWF SA and the Programme Coordinator, WWF-SA was noted as the funding partner while LandCare project of the Department of Agriculture Western Cape was recognised as the technical partners of the WWUA. As technical partners, LandCare is tasked with supporting the Programme Coordinator in implementing their job.

The Programme Coordinator's job entails, among others tasks, coordinating the alien vegetation clearing and restoration along the Upper Breede Catchment area, raising awareness on the importance of wise and sustainable use of natural resources in the area, attending network meetings and profiling the initiative as necessary during the engagements, preparing and submitting monthly performance summary reports to WWF-SA, establishing and maintaining good relations with land owners while providing them with the guidance regarding clearing of alien vegetation on their property, as the need arises. Please refer to Annexure C for the full outline of the terms of reference for the Programme Coordinator. WWF-SA then reports back to Woolworths.

The Programme Coordinator serves as the liaison between the land owners, BGCMA and LandCare, escalating issues raised by farmers to the respective institutions as well as providing feedback on any decisions or actions to note for the land owners. The Programme Coordinator also has the responsibility to coordinate clearing of alien vegetation on the property of land owners who are affiliated with the network. He has prepared an excel spread sheet that is used as a tool to track regrowth of the alien vegetation and then he reminds land owners when their properties are due for the follow-up. Through having funds to support the Programme Coordinator's position, the Secretariat and extension services regarding alien vegetation clearing within Wolseley area have been transferred from LandCare to the Programme Coordinator. This arrangement frees time for LandCare to focus on delivering on their mandate as well as monitoring and evaluating implementation on the initiative with objectivity.

4.3.2 Unlocking of complimentary supporting opportunities within WWSI

Through promoting stakeholder engagement and participation of diverse stakeholders, the WWSI managed to unlock opportunities to self-sustain and ensure sustainability of the initiative. Most of these were opportunities for funding to support various aspects associated with clearing of alien vegetation and harnessing the economic benefits in the alien clearing

value chain. Some of the examples as raised by the respondents during the data collecting process are stated in the section below.

4.3.2.1 Alien vegetation clearing contractors and emerging SMMEs

WWSI managed to unlock a stream of funding to support contractors and emerging SMMEs involved in the alien clearing value chain from the Table Mountain Fund² (TMF). At the time of data collection, discussions were in advanced stages for TMF to release funding that would be used by the contractors and emerging SMMEs towards supporting the operations and purchasing of operational equipment such as trailers, chain saws and other personal protective equipment including protective clothing for the contractors and their employees. All this will contribute towards empowering the contractors while also promoting safe employment conditions in the sector.

Contractors are involved in cutting the alien vegetation and they usually employ unskilled and semi-skilled labour from the surrounding low income households and informal settlements in Wolseley. There were emerging SMMEs led by the local community members in Wolseley venturing into trade of firewood, producing bio char or were in the business of chipping wood. Again, the SMMEs create employment opportunities for the unskilled and semi-skilled labour force from the surrounding low income households and informal settlements in Wolseley. The SMMEs and contractors receive support in the form of both funding and capacity building from the government, mainly through DEA to implement their projects. This mainstream funding and capacity building is complemented by funding and technical support provided by the private sector (e.g. Woolworth, CBI, and BWT). As a result of WWSI's track record and defined purpose, the network continues to attract interest and funding opportunities, thus strengthening the efforts and accelerating action on the ground.

4.3.2.2 Ceres Business Initiative (CBI)

CBI is the business chamber of Ceres. Members of CBI acknowledge the progress made on clearing of alien vegetation through the WWSI. To avoid re-infestation of the landscape, CBI has shown an interest to support the initiative through committing financial contributions towards follow-up clearing of alien vegetation on municipal land. Previously, provincial

² TMF is a capital conservation trust fund which aims to conserve the biodiversity of the Cape Floristic Region. TMF has been operational for two decades and supported over 300 projects and disbursed over R70 million in project grants – resulting in it being considered the premier fund for conserving fynbos.

government cleared the land of alien vegetation after which the land was handed over to the municipality. Due to budget constraints, the municipalities within Cape Winelands District Municipality do not always have a budget for the follow-up processes. CBI has committed to support the alien vegetation clearing processes through contributing financially as part of their CSI.

4.3.2.3 Bredekloof Wine Tourism (BWT)

BWT is a consortium of about 26 different cellars that have formed an NGO with the aim of promoting wine and tourism within the Cape Winelands District Municipality. The consortium has created a trust fund as part of their CSI that receives money from the different cellars. Through the trust fund they support contractors and farmers with the clearing of alien vegetation. As a result, the contractors have managed to buy protective clothing, chainsaws and machines to make firewood. Some of the money is being channelled towards early childhood development within Wolseley.

In summary the WWSI has resulted in:

- increasing the number of landowners in the initiative, hence promoting stewardship as the landowner does not want to see the land being re-infested with alien vegetation
- a culture of budgeting for alien clearing by landowners – currently farmers contribute ZAR 24 000 per annum vs. the ZAR 15 000 per annum that they contributed previously
- Building trust and relations between land owners and contractors hence promoting a sustainable income for the contractors. This is very important during the times when the government departments delay in disbursing funds for the clearing of alien invasive vegetation.

Being affiliated to the UBCEG network, WWSI has contributed to accelerating coordinated action on the following targets, plans and strategies

- **Landowners** are able to keep the alien vegetation at a minimum at their respective premises.
- **BGCMA** that has the Catchment Management Strategy.
- **DEA&DP** has the Breede River Environmental Resource Protection Plan, Ecological Infrastructure Investment Framework, Provincial Biodiversity Economy Strategy which is being realised through harnessing economic opportunities in the alien clearing value chain, and the Western Cape Climate Change Response framework which is also signed by the Department of Agriculture.

- **DWS** addresses the Resource Water Quality Objectives and using data from stakeholder engagement processes prepares the Resource Unit Prioritisation Report.
- **Woolworths through WWF-SA, CBI and the BWT** are able to report on their investment to sustainable environmental management through their CSR portfolios.

It is interesting to note that although the initiative seeks to address the issue of alien vegetation management and water security as identified and defined by the local land owners, all implementation is aligned to and informed by the strategic plans addressing the priority areas for the various institutions. As there is a definitive purpose and agenda, it has been easy for the institutions to align their strategic focus with that of the WWSI as well as direct their support both in terms of funding and otherwise towards achieving the goal of the initiative. The value in implementation of the various plans within the WWSI contributes towards achievement of targets as set in the *Western Cape Provincial Strategic Plan* and, by extension, contributes towards the *National Development Plan*, the *Africa Union Agenda 2063* and goals in the *Agenda 2030 for Sustainable Development* among others.

4.4 Perceptions and attitudes of the participants in the WWSI

4.4.1 Responses from the questionnaire

The questionnaire was not administered in a strict “survey style” but rather treated as a structured guide for the discussion, with the questions allowing deviation either by the respondent or by the interviewer. Huber, Huber and Clandinin (2004: 181-198) argued, for instance, that deviation from the questionnaire can have some positive spinoffs that include setting an atmosphere in which the participants feel relaxed and free to engage. It was noted that sometimes, respondents interrupted the interview with a query in order to better answer a particular question. Due to time constraints, and in order not to deviate too far away from the instrument, the respondents constantly had to be redirected to address the question asked.

The results from the questionnaire and engagement with the respondents are presented and discussed in the following categories:

- Demographics
- General knowledge on environmental management and sustainable development
- Views on participation
- Participation in the WWSI
- Outcomes of the engagement.

4.4.1.1 Demographics of questionnaire respondents

All 18 respondents were selected as they had been actively involved in either alien clearing, rehabilitation or restoration processes along the Upper Breede catchment area. Of the 18, 11 were male and seven were females, with the youngest participant in the age category 20 to 29 years, the oldest participant in the cohort 59 and 69 years. Most of the participants were in the age class 29 to 39 years. The age class spread is shown in Figure 4.7 below.

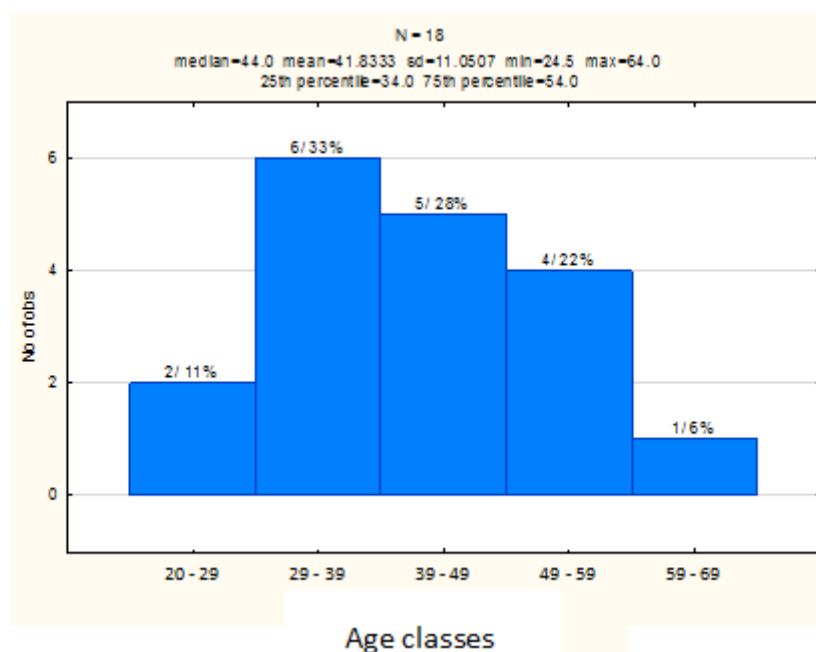


Figure 4.7: Age classes and age class distribution of participants

There was an equal split in the highest levels of education attained by the respondents, between those who attained a matric or equivalent, and those who possessed a tertiary qualification. The same applied for those who only attended primary school and those who did not necessarily attend any form of formal education, but have experience in landscape management. On the one hand, those with a tertiary education were formally employed in the government departments or occupied an influential position in their organisations of employment and two of them were land owners, who were also farmers. While on the other hand, those with a primary school education and who had below a matric or equivalent qualification were either contractors or employed by the contractors. The distribution showing the levels of education and experience among the participants is shown in figure 4.8 below. A level of education viewed on its own was insufficient to conclude how it influenced participants to be involved in the initiative but served as a guide for the researcher in deciding the questions to ask the respondents from the pre-set questionnaire.

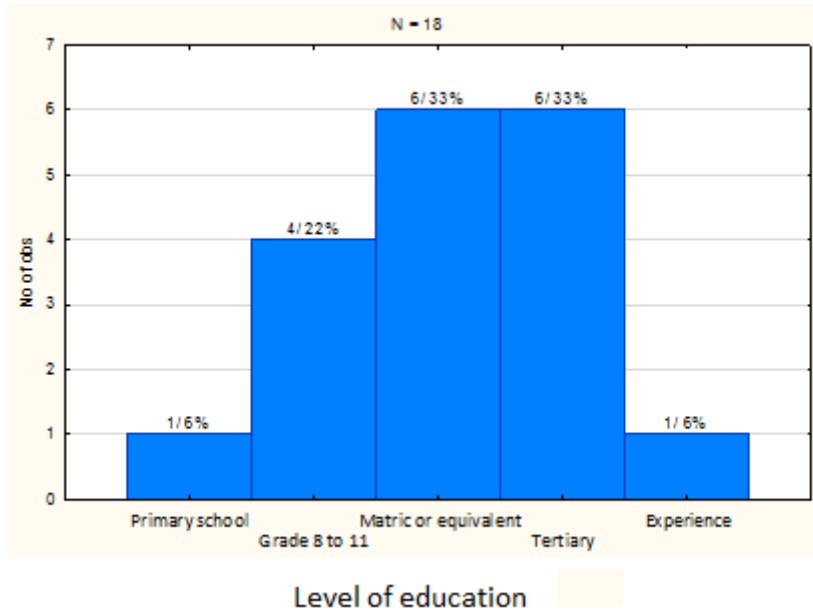


Figure 4.8: Level of education attained by the participants

4.4.1.2 Knowledge of other members in the WWSI

The list of stakeholders and stakeholder groups involved in the WWSI is presented in Table 4.3 below, as identified by the participants from the interviews. Highlighted in grey are the names of stakeholder groups not consulted during the study, but who have been noted as playing an important role in driving the WWSI. The roles and responsibilities of these stakeholders and stakeholder groups were however flagged and discussed during the study.

Table 4.3: Identified categories of stakeholders active in WWSI

Stakeholder category	Stakeholder	No of times mentioned by respondents
Government	DAFF	3
	DEA&DP	3
	DoA: LandCare	8
	DEA: NRM	
Institutions affiliated with the Government	DWS	
	Witzenberg Municipality	2
	EPWP	
	CapeNature	1
Independent institutions	BGCMA	3
	Contractors	2
	Land owners	
	UBCEG	2
	Ceres Business Initiative	2
	Home Owners Association	1
	Table Mountain Fund	1
	Schools	1
	Breedekloof Wine and Tourism	1
	Wolseley Water User Association (WWUA)	6
WWF-SA	4	

Of the 18 respondents, 14 indicated that they had knowledge of at least one other stakeholder group or office active in the initiative. The most common stakeholder groups mentioned were LandCare, which was mentioned eight times followed by the WWUA, which was mentioned six times. WWUA was also taken to include the landowners and the person facilitating engagement between land owners and the various institutions. Such results could be attributed to the fact that LandCare has been part of the collaborative work on clearing of alien vegetation in the area since before 2006. The popularity of the WWUA could be attributed to the Programme Coordinator being embedded within the WWUA. As the person offers extension services to the land owners as well as serving as a conduit between the land owners, contractors and the various stakeholders. It was likely that most of the respondents would have knowledge of the Programme Coordinator or make reference to the coordinating role that he plays. In some instances, the respondents knew the names of representatives of organisations and these were then placed on the list to add to the number of the times the

organisation was mentioned. The frequency with which other stakeholders were mentioned in response to the question is indicated in Table 4.3 above.

4.4.3 General knowledge of environmental management and sustainable development

All 18 respondents were able to identify the alien *Acacia* species by either using the generic popular Afrikaans or the Latin name. However, one participant requested not to go through the full question regarding identification of plant species due to time constraints. More than half of the respondents were able to identify the indigenous yellow wood and *Acacia karoo*. However, only one respondent was able to identify the *Widdiringtonia* species a plant species that is used mostly for rehabilitation at higher altitudes in the upper catchment areas.

In addition to identifying the names of plants, as depicted in the pictures, the participants were also requested to name alien vegetation plants that they were aware of. This set of questions served as an ice breaker and get the respondents comfortable to engage around the topic of the WWSI.

All respondents were able to name at least one alien invasive species. The most commonly referred to was the black wattle (13 times) and pine was selected four times.

There were various levels of understanding on the effects of alien vegetation on the environment. Each participant was able to explain the negative impacts alien vegetation has on the river system. In support of literature reviewed for this study, all the respondents made reference to the challenge posed by alien vegetation through competing for resources such as water, sunlight and space for growth in comparison to the indigenous vegetation. As a result, the growth of indigenous vegetation is compromised as they get suppressed by competing alien vegetation. Six of the participants raised the issue that alien vegetation poses a fire risk as the vegetation increases the fuel load, thus contributing to intense fires which would destroy other assets, particularly on the landowners' property. As one participant noted:

“High density of alien vegetation is problematic when we have fire burns. It is very difficult to contain the fire as the alien vegetation facilitate for the rapid spread of the flames. We have very little control over the fire than to proactively remove or keep the growth of the alien vegetation at a minimum, given that fire is a key characteristic in the growth of fynbos and the indigenous vegetation found in this area.” (Respondent K)

Other examples of negative effects mentioned were that alien vegetation has the potential to alter the design and flow of a river system as the in-stream growth could potentially choke the

river, leading to the river bursting and damaging its banks during the peak rainfall season. In-stream growth of alien vegetation was also given as a reason that could potentially slow down the speed of the flow of the river, hence increasing the sedimentation in the river that results in a reduction in the capacity of the river. Contrastingly, one respondent mentioned that the presence of alien vegetation actually increases sediment mobility, especially upstream, hence contributing to intense erosion of the river channel in some places. Another respondent presented a debatable point that growth of alien vegetation close to the river channel could reduce the amount of evaporation from the channel due to the broad canopy that covers the river (Respondent H); however, one could argue that the reduction is offset by the rate at which the alien vegetation draws up water from the soil. In line with controversial responses, one respondent was quick to mention that “a tree is better than no tree as it provides shade or even serves as a wind break “especially when the alien vegetation is in small populations” (Respondent W). The respondent was quick to qualify that, if left unchecked, invasive alien vegetation could easily outgrow the native vegetation, hence compromising on the biodiversity of the area.

It was noted that participants were able to identify other factors in addition to alien vegetation that affected the environment negatively. Most of the factors leaned towards inappropriate agricultural practices, which is not surprising given that Wolseley is predominantly an area where commercial agriculture is practiced. Some identified factors included: bad farming practices, uncontrolled fire particularly in the wild where there may be alien vegetation to increase fire intensity, poor planning and engineering, which could result in unsustainable land use and development, and illegal activities such as illegal ground water abstraction and livestock grazing in wetlands.

It was also noted that only 2 (or 14%) of the respondents that addressed the question focusing on sustainable development did not appear to have knowledge of the term as depicted in Figure 4.9 below.

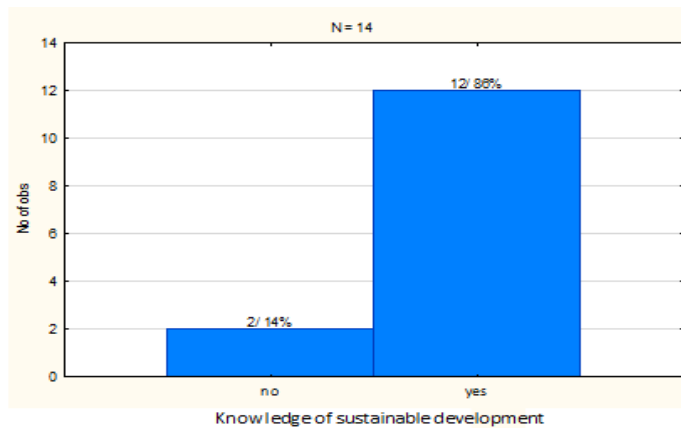


Figure 4.9: Knowledge of sustainable development among the respondents

After the researcher explained the term to those not familiar, all the respondents were able to identify at least one element of sustainable development that they deemed important. Some examples focused on economic growth and development; hence terms mentioned included: enough resources for everyone, moving from a linear to a closed loop economy driven system and promotion of a circular economy. Others gave process-oriented responses, such as promoting soil conservation, planning of resource use in advance, a holistic/area-wide planning of resource use. One respondent raised the issue of promoting intra- and intergenerational equity with regard to access and use of natural resources, considering that there is only one habitable planet. An interesting example was on innovation, where a respondent mentioned that waste should not necessarily be wasted but should rather serve as an input to another system. The respondent then gave an example of a prototype under development, where reeds were being tested as a growth medium for mushrooms.

The top two elements viewed as most important for sustainable development were “protection of the environment” and “long-term sustainability” i.e. implementing projects with a view that the impact will contribute towards better living conditions for both the people and the environment in future. The ranking obtained on the important elements that sustainable development seeks to achieve based on the perception of the respondents, is presented in Figure 4.10 below.

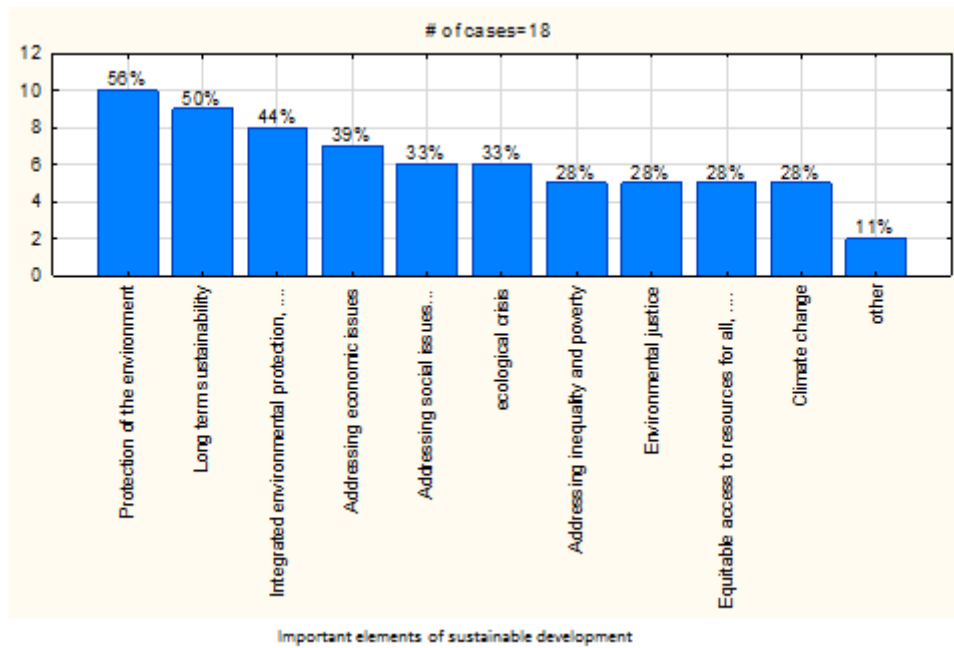


Figure 4.10: Ranking of important elements of sustainable development based on respondents' perception

Given that Wolseley is an area well-known for agriculture, it was also not surprising that water wise agriculture and industry sector was selected as the top element that respondents associated with sustainable water security. The second element identified was clearing of alien vegetation, which in one way points to the common purpose that convened all these stakeholders around the WWSI in the first place. Water reuse and finding alternative water sources, water sensitive design approaches and acknowledgement of water as a finite resource, all received 39% support occupying a third position in terms of ranking. It could be that the drought that was experienced in the Western Cape made water quite a topical issue and got people talking about options and alternative ways of ensuring the wise use of the resource.

It is also important to note how the respondents also relate their knowledge on environmental issues with their day to day actions and decision making. For example, one farmer mentioned that he had not planted fruit on the farm to full capacity since 2015. He mentioned that it was a coping mechanism in the drought period – through reducing demand on water required for irrigation as a result of the drought. Participants were able to also draw from their day-to-day experiences and mentioned additional elements such as the need for efficient communication on water use and consumption to other water users, planting of indigenous vegetation, as well as expanding the resources available to support contractors in the clearing of alien vegetation

as important issues that came to mind and that the respondents perceived could contribute towards sustainable water security. Refer to Figure 4.11 below for the rankings of the proposed options.

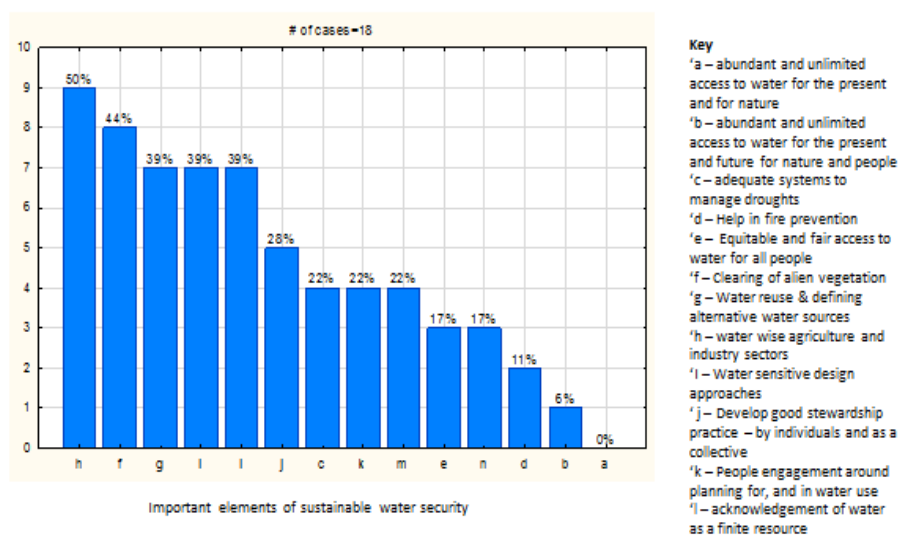


Figure 4.11: Participants' ranking of elements important for water security

The responses given on the questions focusing on general knowledge and sustainable development indicated that the respondents have a general appreciation of sustainable development and the way it needs to manifest in an ideal world. One could interpret this knowledge and understanding as a basis that also motivates and drives them to participate and play various roles in the WWSI.

4.4.3.1 Views on participation

The participants expressed varying and divergent views on their understanding of participation and the participatory approach in implementing projects. Some respondents were open to sharing images that they link “participation” with, while most preferred to explain and provide phrases to illustrate their understanding of the term. The researcher used the thematic content analysis in classifying the responses captured under the following categories: Processes towards achieving a desired goal, Compliance with set rules and regulations, Outcomes or long term desired state, Principles/Factors, or Structural. It was noted that without being prompted, some of the respondents also already indicated the challenges and reservations that they associated with participation and a participatory approach. Upon further probing, it

was found that these reservations were informed by the participants' previous experiences with projects that entailed a participatory approach. Table 4.4 below gives a summary of the findings under the various categories.

Table 4.4: Ideas, images that respondents linked to participation in environmental management projects

Category	Deduced explanation	Examples given
Process towards a desired goal	Managing the environment is not a destination or a point in time. Rather it is an on-going process that needs people to engage and manage it on a continuous basis.	Campaigns focusing on initiatives to clean the environment Citizens take part in picking up litter, cleaning up after themselves Clearing of aliens Dialogue (stakeholder engagement) Groups of people cleaning wetlands Input in contributing to a bigger goal Taking part Giving away trees to schools and to farmers Making a difference, no matter how small the input one makes People sitting in a room being presented to Plant correct trees species Protect fynbos and bees Tree sale event
Compliance	A task that people need to report on as having been accomplished in order to get required credit and move on to the next stage in the development process	Regulations (EIA section 24G) as provided by the law Tick box River front is the responsibility of farmers to keep from alien plants
Principles/Factors	Elements that make or break the engagement process of people with regard to management of their surrounding environment	Good and proper communication Involvement Openness Sharing (knowledge, tech skills, budget, time) Team work
Institutional/Structural	Having a structure in place to provide direction and guidance on the process of environmental management	Forum Partners Partnership between individuals and government UBCEG Working for Water Portfolio of a Programme/Project Coordinator
Outcome	An ideal that environmental management aspires to reach	Water security Clearing of alien vegetation Job creation/People get employed Long term sustainability of a project through improving the environment and people's lives
Challenges	Barriers that hinder people to engage and participate in environmental management initiatives	Chasms (difficult for someone to penetrate the closed groups) Hesitancy (all the closed groups, mandates feeling insecure and a little overwhelmed to break through into the structure) Lack of clarity on goals

A total of 11 out of the 12 respondents who answered this question indicated they had been involved in participatory projects in one form or another. Of the 11, nine used the term "definitely important" when asked for views on the necessity of employing a participatory approach and stakeholder engagement in implementing social and environmental projects.

They further qualified that participation entailed an iterative process of dialogue that helped clarify processes and set goals for the initiative. The quotes showed below attest to the sentiments on the value of communication in participation as groups implement projects that seek to contribute to sustainable development from the respondents:

“Extremely necessary yet getting a balance could also be extremely tricky. It is important to get people who are quite capable of acknowledging the sensitivity in group dynamics and sets of individual uniqueness and use these to steer the engagement towards achieving the desired goal.” (Respondent H)

“Participation and stakeholder engagement is fundamental for achieving set goals in the project objectives.” (Respondent N)

“I will give an example of UBCEG. We schedule and hold meetings, even if it is just a case of people meeting and sharing experiences as always two heads are better than one when it comes to planning.” (Respondent K)

Of the 15 prepopulated elements, principles and factors; “purpose and impact”, “trust between people”, “leadership” and “credibility” were ranked the most important elements in promoting engagement within an initiative such as WWSI. They had scores of 57%, 57%, 50% and 50% respectively. Next in the ranks were “consultation and deliberation” and “integrity”, which had scores of 43% each. Least ranked in importance were issues relating to logistics, namely “convenience” and “access to venues for meetings”, which each received a score of 14%. However, the participants also raised additional elements/factors that had not been included the prepopulated table. These were “a need for impact and visibility of results within a short space of time”, “simplified administrative processes”, especially when dealing with government offices and “committing a certain amount of money to the initiative”. These additional elements/factors pointed mainly to relevance, purpose and impact (Durham *et al.*, 2014, Volger *et al.*, 2017) of an intervention and were highlighted as critical since they triggered the interest especially of land owners who were the primary stakeholders as they had a direct benefit from the clearing of alien vegetation in the area.

4.4.3.2 Participation in the WWSI

Having heard of the initiative as one of good practice at a conference, the researcher was keen to delve deeper and understand the specific elements and design of the engagement process that premised it for the “success”. A section in the questionnaire focused on understanding the dynamics of engagement, such as the responsible authorities or responsibility for facilitating processes in the network, reasons why the participants chose to

be part of the initiative, their contribution to the initiative, level of participation and influence, as well as lessons learned from being affiliated with the initiative. Reiterating the point made by Mendoza and Prabhu (2009: 177 - 190), the questions posed were by no means designed to prove the success or failure of the initiative. Instead, they were designed to prompt reflection and to determine whether there had been a perceptible change in perceptions or perspectives of the participants, as well to determine whether the changes in perception influenced the way in which participants make land use decisions that are more ecologically or environmentally sensitive; and thus learning from the experience for the future (Volger *et al.*, 2017: 5 - 16).

Although the collective action on clearing of alien vegetation could be noted as having begun in 2013 when the first MoA was signed between LandCare, BGCMA (then BOCMA) and the WWUAs, participants indicated that they joined the initiative on different dates, and for some even different years. Landowners and organisations stated actual dates when their involvement was noted in the initiative or when they became part of the collaboration while contractors and their workers seemed to indicate a long-time engagement in the space of alien clearing in other geographic areas, some even outside of the Wolseley area, and for others starting as far back as 2000.

It is important to note, though, that institutions such as DEA&DP and WWF-SA joined fairly recently, when the MoA among founding partners had already been signed. This meant that these institutions were not present when the initial aims and goals of the initiative were set. However, one could deduce that there was an alignment between the impact noted from the initiative and the strategic plans and documents of the respective organisations, hence the affiliation. To this end, one could deduce that the initiative could have had a definitive goal with a flexible and accommodating methodology of achieving it (Blewitt, 2008), hence the recent entrants. All the respondents confirmed that they had not left the initiative since the time that they joined indicating growth and expansion in the membership of the initiative.

As noted from the responses, 13 respondents indicated that they had a clear understanding of the long-term goal(s) of the WWSI. They all indicated the goal as having a network that fosters dialogue and a collective action focused on the clearing of alien vegetation and the rehabilitation of the Upper Breede Catchment area. As precisely presented by one respondent, the purpose of the initiative was:

“To create ownership and involvement of land owners in alien clearing, rehabilitation and restoration of the Upper Breede catchment area.” (Respondent K)

The respondent further clarified that:

“The primary issue has always been on alien clearing with water security becoming an added dimension that became topical as a result of the drought being experienced in the Western Cape since 2015.” (Respondent K)

Three respondents were able to make the direct links with the legislation as they explained that alien clearing was in line with the NEMBA legislation. They explained that the legislation made it clear it was the land owner's responsibility to clear and manage alien vegetation on their property.

Three respondents who were also landowners acknowledged the assistance received through being part of the initiative. They mentioned that land owners received a great deal of support from government on the initial clearing of land infested with alien vegetation, and in the process bringing down the infestation levels to where the land owners would be able to manage and take care of it going forward, in order to avoid a state of reinfestation.

The land owners and contractors raised a concern relating to the costs involved in the process of removing the alien vegetation. They highlighted it as a limiting factor that could inhibit alien vegetation clearing on the properties. They welcomed the assistance from the government and the private sector, as it helped ease the expenses.

Another issue raised by the land owners was the importance of having the different government departments as part of the initiative, as that provided legitimacy and financial injection, while the personnel also shared in the invaluable technical assistance. All these factors combined further to provide an incentive for the land owners to collaborate and participate in the process.

In engagement with all the respondents, there was mention of “leadership” (Maina and Muia, 2007) and “coordination” (Warburton *et al.*, 2012) as important catalysts in driving the success of engagement. Sixteen of the 18 respondents acknowledged that WWUA, through the Programme Coordinator, had the role of providing leadership and coordinating engagement. The Programme Coordinator was referred to as the voice of the land owners to other external stakeholders. He was also identified as being central in coordinating activities relating to alien vegetation clearing within Wolseley. The Programme Coordinator keeps the records of activities and he keeps the spread sheets with the landowners' details and schedules for alien clearing, reminds the land owners when their land is due for follow-up treatment and updates it each time. Further, he is the key liaison between land owners and the contractors involved in alien clearing. Participants also attested that there is diverse engagement, consultation, exchange of knowledge and more importantly, appreciation and consideration for the local

knowledge in decision making processes within the network. To this end, the participants identified additional institutions that support the Programme Coordinator with the facilitation role. The names of the institutions and the perceived roles are listed in table 4.5 below

Table 4.5: Stakeholder groups and perceived roles in the WWSI

Stakeholder/stakeholder group	No of times mentioned	Perceived role
WWF-SA	2	Provides funding for the Programme Coordinator and provides technical support. Although noted to be a silent partner, the WWF-SA is furnished with progress on project implementation which it reports to Woolworths
WWUA	5	Coordinating alien clearing, restoration and rehabilitation activities
LandCare	4	It was identified for facilitating and elevating the WWSI's input to UBCEG as well as liaison with other government departments. It was also identified as profiling the collaborative network through the different platforms and avenues giving exposure to the engagement.
BGCMA	1	Water allocation to land owners and the ecosystem within the catchment
Witzenberg Municipality	1	Provides guidance on land use and land use development

Figure 4.12 indicates responses received from the respondents regarding the names of other stakeholders or offices that are part of the initiative. Absolute numbers are indicated based on the number of times a certain stakeholder or office was nominated. Awareness of other stakeholders and stakeholder groups could point towards the actors who are very active or play an influential role in the project implementation.

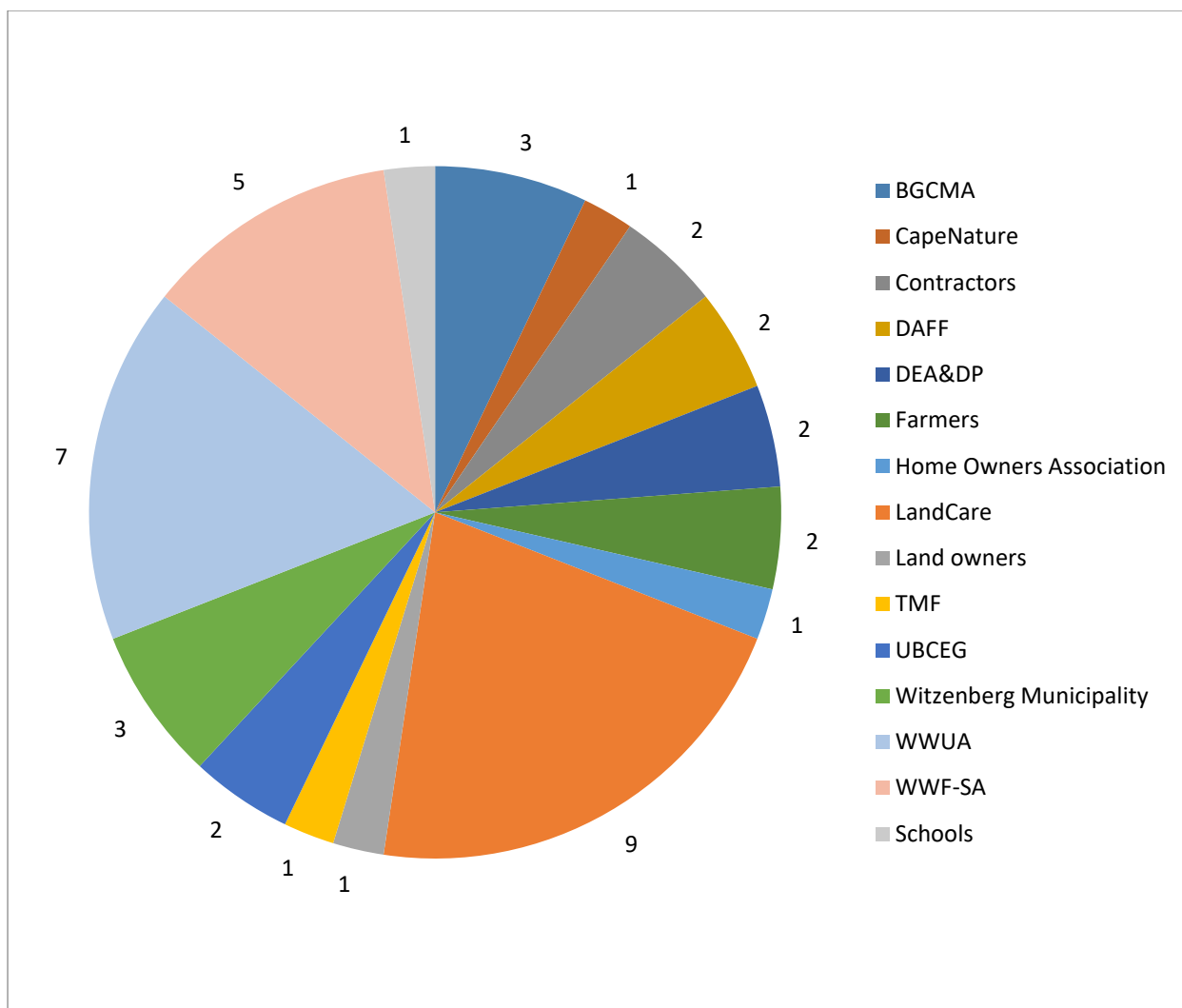


Figure 4.12: Identified stakeholder groups active in the WWSI

4.4.3.3 Stakeholder and stakeholder group contributions to the WWSI

Responses recorded indicate that all 18 participants invested their time in the initiative. This contribution transcended the stakeholder group i.e. time is a common element that land owners, contractors, representatives from the respective organisations and even the employees of the contractors contributed. Each person spent time on the initiative in line with their area of speciality.

- Contractors: recruiting and organising their teams, ensuring that equipment such as chainsaws are functional, their teams have the correct and adequate protective clothing, liaising with WWUA or LandCare regarding schedules for alien clearing, marketing their enterprises to unlock additional funding protective, overseeing the process of cutting in the field. Two of the contractors also indicated that they have started investing time to undertake market research around value addition to the cut

trees and harnessing the economic opportunities presented in the biomass economy value chain.

- Contractor employees: providing manual labour for the clearing and rehabilitation processes.
- Government institutions: attending meetings, brainstorming and contributing towards project development, networking and sharing lessons learnt from the initiatives through their networks.
- EPWP: propagation and tree planting demonstrations at the nursery, extension services and campaigns to land owners and schools, attending meetings.
- Private sector: providing oversight on project implementation, exploring options for business development and project expansion, attending meetings, networking and sharing lessons learnt from the initiatives through their networks.
- Landowners: needs to ensure that the following is available to facilitate clearing, a certain quantity of diesel for the chain saw operator, and R 24 000 as payment to the contractor. Most of their engagement is through the WWUA as they prefer to focus their time on agriculture production and the hospitality sector.
- Programme Coordinator: facilitates contact with the contractors who bring their team and operating equipment including the chainsaws and secateurs. Having a Programme Coordinator fluent in English and Afrikaans was also identified as an important factor as he is able to communicate with the land owners, contractors and their employees who in some cases were not very fluent in English.

The second most popular contributions were “skills and expertise” and “attendance of meetings and workshops”. From the latter, could the researcher deduced that face-to-face dialogue is a regular feature in the implementation of the initiative. This could be interpreted to mean that there is a lot of dialogue and engagement that contributes to knowledge sharing – with the workshops contributing towards the empowerment of the participants. In addition, the participants derived value from the engagements; hence they regularly attended the meetings. Further, the researcher also inferred that social learning and knowledge sharing played an important role in contributing to the sustainability of the initiative.

“Skills/expertise” and “provision of venue/facilities for meetings” were selected by the participants from government departments, NGOs and business categories, while the land owners, contractors and their employees mainly selected “provision of labour”. Land owners indicated that in addition to providing finance, time and attending meetings, they also provided

fuel for the operation of the chainsaws and related machinery when the alien clearing occurred on their property.

Additional contributions, which could also be used to infer the typology of participation for the respondents, included communication and marketing of the initiative as mentioned by the contractors and respondents from the government departments, job creation and youth empowerment as mentioned by the contractors. These elements all contributed towards inclusive growth and empowerment of the participants within Wolseley. Figure 4.13 below provides the distribution of the contributions made by the various participants:

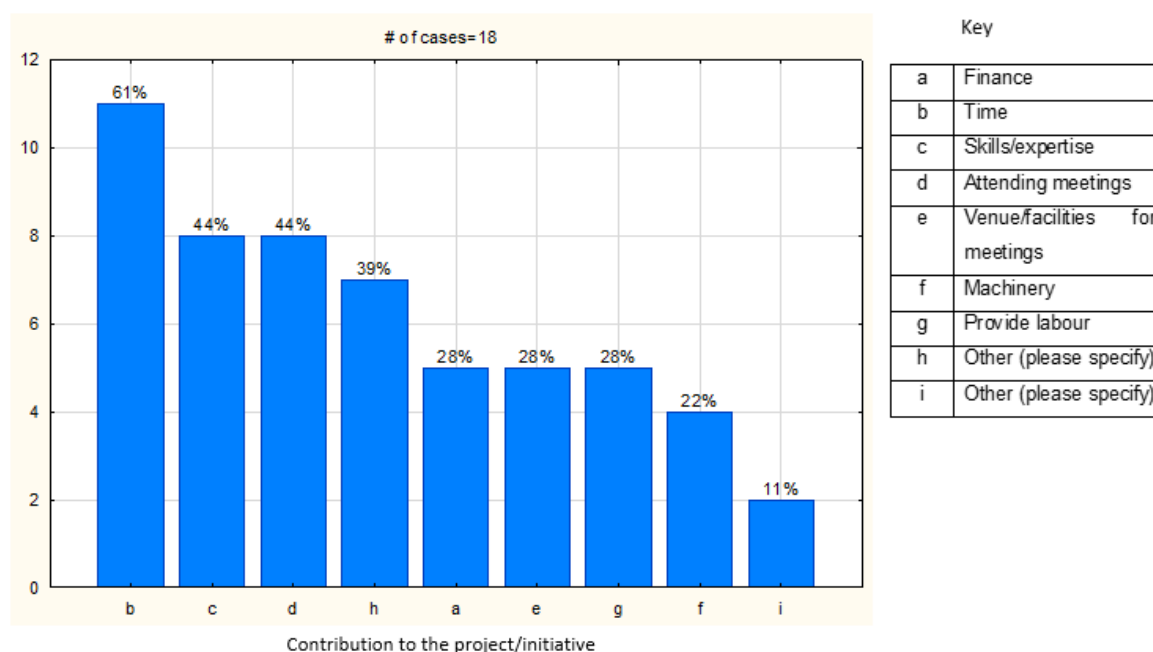


Figure 4.13: Contributions made by the participants to the initiative

The respondents also indicated the various platforms through which they participated and contributed to the decision making processes of the initiative. Some of these avenues include having one-on-one discussions with the Programme Coordinator, attending the farmers' annual general meeting, through meetings convened by the Fire Management Agency and the bigger network of UBCEG.

From responses provided to the question on contributions and participation in the initiative, the researcher is able to deduce a range in the types and levels of participation among the various stakeholders and stakeholder groups, depending on what they contributed at a given time and phase of project implementation. This is in agreement with typologies proposed in the wheel of participation, which alludes to a combination of three different forms of

participation among various stakeholders from “top-down one-way communication”, “top-down deliberation and or coproduction” and the “bottom-up deliberation and or coproduction” (Reed *et al.*, 2017: 7 - 17). The researcher also argues that there is very limited “bottom-up one-way communication” as there are open communication channels between land owners, contractors and those in decision making positions either in government departments or the private sector. Therefore, the researcher is inclined to conclude that decisions are made on a consensus basis within the initiative. .

It was also indicated that while Woolworths was providing funding through WWF-SA, the two remained silent partners who would receive the regular reports in line with the agreed schedules. To this end, while the engagement process could be viewed as excluding some of the groups of stakeholders, the participants were satisfied with the arrangement.

4.4.3.4 Reason for joining WWSI

Ten reasons for participation were given on the questionnaire/interview guide and participants could select as many reasons applicable to their context, as well as add further reasons. Although explained in different terms, “relevance”, “purpose” and “impact” emerged as the main themes/reasons why the respective stakeholders participated in the initiative as presented in the section below.

The most popular answer selected by 14 participants regarding reasons for joining the initiative was that the participants had some form of awareness and/or knowledge of the harm alien vegetation has on the environment, including reducing amount of rain water eventually flows or seeps to the river channel. One participant echoed that “people light up when they see the benefits of engagement” and hence the prospect of addressing the issue of water scarcity in a province that was experiencing a drought period could be understood as the benefit that encouraged participants to affiliate with the initiative.

In second position and selected by 13 participants was that people became involved because it was a project focused on their line of work (for those representing various institutions) or that it provided a paid job (which was a common selection from the people employed in the private sector and NGOs, as well as the contract workers). Contribution towards water security within the context of the drought in the Western Cape was in third position having been selected by 11 participants. Ten respondents indicated their participation was as a result of their strong belief that alien vegetation clearing and rehabilitation of the catchment area would contribute towards just and sustainable development.

It is important to highlight that landowners and contractors mentioned that they joined the initiative because of the presence of the Programme Coordinator. They had confidence that the Programme Coordinator could fairly represent them when elevating escalating any issues such as disagreements with the contractors, queries on the applications for an Environmental Impact Assessment prior to alien clearing or any pertinent issues that could arise. As a result, the landowners and contractors were able to focus their time and energy on their prime jobs of either agricultural production or hospitality services or the alien vegetation clearing instead of attending meetings and or workshops.

Despite the difference in reasons given by various stakeholders, the issues of self-development value (Danielson, 2015; Murphree, 1991), deriving of direct and indirect benefits including the costs and benefits of being affiliated with WWSI (Murphree, 1991) and an understanding of a common challenge, that alien vegetation compromises biodiversity and environmental sustainability, (Murphree, 1991) have sustained engagement and growth in membership of the WWSI. In the context of climate variability and uncertainty on weather patterns for the Western Cape, the researcher concludes that these reasons would continue to provide a basis for the various stakeholders to remain as members of the WWSI.

4.4.4 Outcomes of the engagement in the WWSI

WWSI seemed to have had a positive footprint both in supporting the process of clearing of alien vegetation, rehabilitation of the landscape as well as improving relationships among the stakeholders and stakeholder groups. This was supported by the results in which “improved relationships with stakeholders”, “improved communication with other stakeholders”, “improvement in knowledge and skills on water resource management” and “control of alien invasive vegetation” were selected by most of the participants as some of the legacies from the initiative. The stakeholders reflected and gave their insights from various perspectives as presented below.

- *Personal:* Increased levels of consciousness/awareness on engagement and relationship with the environment surrounding them, with at least four respondents sharing on how engagement in the initiative had an impact on their lifestyle and how they constantly encourage their colleagues and family members to be water wise. The issue of efficient use and management of water had also become topical given the extended drought period that was experienced in the Western Cape. The stakeholders staying in Wolseley mentioned how the prospect of Day Zero (the day that water would run out, projected for the City of Cape Town, which is a downstream recipient of water

from the Breede River Catchment area) triggered discussions of innovative ways they could use and manage the water upstream to delay and/or avoid the day completely.

- *Institutional/organisational*: The government departments and the private sector's contribution were to provide technical and/or financial support. Through management of the power dynamics within the initiative, the government departments and the private sector acknowledged that they were able to "set aside the policy and legislative imperative" and had dialogue and meaningful engagement with the local stakeholders, land owners included. The approach aided them to better understand the local realities, a resource from which they intend to better align policies and implementation strategies on engaging local people to participate in environmental management. This approach speaks to the importance of knowledge sharing and value of social capital in contributing to sustained engagement within the initiative. One respondent commented that the experience gained through participating in the initiative at such a small scale presented a sustainable model for bridging the gap between government, the private sector and the local people to collaborate on environmental management. The established model presented the potential for replication elsewhere. However, another participant from a government department also cautioned regarding the time taken to establish good relationships and building trust, aspects that are hardly budgeted for in project design. As a result, implementing projects are usually done in haste, with impacts that are hardly sustainable beyond the duration of the project. The model adopted in implementing the initiative therefore:

"Confirm[ed] the need to invest in time to build the relationships and the need for consistency in the people that are the face of such an engagement with the locals, in order to achieve long-term impacts for the environment and the well-being of the locals. (Respondent H)

It was also interesting to note the improvements in the personal and social dimensions that were evident. Reflections shared by the participants confirmed that people would participate in an initiative when they view participation as an opportunity to enhance self/community development value (Danielson, 2015; Murphree, 1991). Some of the reflections that speak to either community and or self-development, thus contributing to the social capital of WWSI as shared by the participants are indicated below:

"I have learnt a lot both in terms of project management, especially for projects which required more than a single investment from various sources. I have also learnt how to engage and negotiate for a shared understanding and outcome drawing input from a lot of different stakeholders." (Respondent J)

“Clearing of alien vegetation has taken longer by other means to achieve. However, it is been on [the local network’s] agenda for years but never got around to getting results. Either selected service providers did not deliver on time or they did not see the contract to fruition due to various issues that arose. However, through our affiliation in the initiative, we are getting results. We do not have to attend a lot of meetings as we have confidence in the Programme Coordinator to represent our views to the various offices and he alerts us in time in case of any new decisions. Moreover, we are confident that we will realise an indigenous river front in 15 or less years to come as well as benefit from more water being channelled to the river.” (Respondent W)

“We have also grown with the process. We started with alien vegetation clearing in the mountainous regions and from there have learnt from mistakes made that alien vegetation clearing is too big to handle for one stakeholder or organisation. However, through a collaborative network, each organisation bringing its strengths to the table, we have been able to have a positive impact.” (Respondent K)

“Contractor’s success stories are being written in local newspapers (e.g. Vukuzenzele) and they are also invited for radio interviews to share their stories – success has also largely been as a result of the support and good relationships through the collaboration and networking in the WWSI”. (Respondent Q)

“Contract work helps especially those who are poor to find themselves and develop. Through the contract employment, we form relationships with the people and support them through a process of getting identity cards, opening bank accounts, training them on the menial skills as necessary, as well as offer and pay for them to attend courses such as first aid, health and safety, etc.” (Respondent Q)

“What is also special is that the contractor (name supplied) gives people on parole job opportunities and they usually appreciate saying that getting a job has helped them stay away from criminal activities.” (Respondent N)

The researcher recommends that efforts to promote a multi-stakeholder approach to environmental management considers and builds on these sentiments as shared by the participants. Being sensitive to these realities will promote authentic participation by the various stakeholders.

An observation made was that the employees of the contractors were very grateful to their employers for providing them with a job and a stable wage income, to an extent of pledging loyalty to their employers. The appreciation of the environment was often mentioned as a secondary issue. Participants were very happy to share what they had acquired in terms of

basic assets as a result of being on the job. It also happened that the people that were interviewed were the “top performing employees”, quite close to the contractors or those who had stayed long at the job and hence had accrued a lot in terms of experiential learning. As a result, most of them had risen to supervisory roles, again positions they considered to be of privilege given the limited education they had. Below are some quotes noted during the interviews on the way some of the employees had improved their lifestyle as a result of being employed.

“I started as a supervisor receiving training from [my] mum for four months in 2012 when I was 20 years old. After I had gained experience, I decided to register my own contracting company as a sole proprietor, so I went and registered at SARS. I used my mum's bakkies then, but I have since bought a bakkie too for myself and the contracts that I get.” (The respondent was groomed by his mother who is an established contractor to also develop as a contractor active in clearing of alien vegetation in Wolseley). (Respondent P)

“I am very glad to have a paid job that also allows me to develop and grow and teach and share my skills”. (Respondent R)

“There is a poor guy by the corner of the road, he did not have money but is now studying part time and is in his final year of studying to become a teacher.” (Respondent P)

Another observation made was that the contractors, representatives from government departments and the private sector all appreciated and emphasised the value of the role that the embedded Programme Coordinator played in the initiative. In the words of one of the respondents

“In the absence of a good agent embedded in the community, there will be no trust and buy-in from the local land owners... the same applies with government departments, where the officers are based far away either in Worcester or in Cape Town and they only come to observe and discuss their agenda without spending much time in the area. People view the visits as a tick box exercise or talk show and land owners would not have been keen to invest resources or even have faith in the initiative.” (Respondent G)

Other tangible outputs and benefits that were mentioned by the participants included:

- Having a structured and functional network that could serve as a vehicle for unlocking avenues for land owners and contractors to access and leverage government funding for the purposes of improving alien vegetation clearing and rehabilitation and restoration of the catchment area.

- Being involved and getting buy-in of private landowners in clearing responsibilities, without placing an undue local administrative burden on collaborators where the government provides funding. This given that the landowners had agreed to increase the budget allocation towards the follow-up processes on their property to R24 000 each year, up from the R15 000. This arrangement has been functional given that there is a Programme Coordinator whose income is being paid for by Woolworths through WWF-SA. There was a proposal made by one respondent of exploring options for putting a constitution or legally binding document in place that the land owners would continue committing funding for the position once the funding cycle with WWF-SA came to an end.
- Anecdotal evidence, as shared by the contractors and land owners, pointed to visual improvements in management and restoration of the landscape as well as reference made to increased water flows.

All the contractors and representatives from government departments made reference to identification and support of value-added initiatives to support micro-enterprise development that came as a result of the engagement on the initiative. These opportunities were identified as packaging and selling firewood to the local shop owners, processing the felled trees to bio char which is used to condition and improve the soil conditions, exploring opportunities for use of wood chips as mulch for agricultural purposes, and thus reducing evaporation from the soil.

Six respondents indicated that engagement and participation through the WWSI had opened numerous channels for growth and development, some of which included introducing some land owners to the contractors involved in alien vegetation clearing. Due to the constant engagement, trust was built between the land owners and contractors. A strengthened relationship between these two groups could potentially lead to land owners establishing long-term agreements with the contractors; hence the contractors are able to plan for a longer period of the alien vegetation clearing process. In addition, the contractor would be able to also provide longer-term employment to the semi- and non-skilled contract workers under their employ, thus contributing to improved socio-economic status of the individuals.

4.4.5 Challenges encountered by stakeholders active in the WWSI

The respondents raised several issues, which in their view had not been successful or were not achieved through the collaborative network. Some of these issues include:

- **Funding**, as raised by (Hara & Nielsen, 2003): The model in use for the WWSI is that of part funding from government and contributions from the private sector and/or land

owners. However, the lack of reliability in receiving funding from the government (DEA: NRM) affects the collaboration. For example, at the time of the interviews in August in 2018, it was already five months into the 2018/2019 financial year, but DEA: NRM had not released funding through WWUA. As a result, the contractors were not able to keep their temporary workers employed; who in most cases were from the lower income population group and whose main source of income are the short-term contracts that they get for the alien clearing. The contractors are, therefore, forced to release some of their employees. The landscape also suffers as it is usually during this period of no activity that there is full regrowth of the alien vegetation, resulting in the follow-up process also becoming quite expensive. In addition, inconsistency with disbursement of funding affect planning and budgeting for implementation. Two participants mentioned the need for the administrators in driving the engagement to explore alternative and innovative options to secure additional funding in order to complement the funding available from WWUA, DEA: NRM and WWF-SA.

- Land owners need to pay an affiliation fee to the WWUA. Some had indicated that the price was too steep, and hence, did not contribute regularly to the network. This is a challenge as the Programme Coordinator does not have confidence in the plans and budget allocations to plan and budget. Closely linked to the previous point was that over the 75 km stretch of river, there were some farmers who had a longer stretch of land along the river compared to others. These farmers are not always able to have the whole stretch of land cleared, posing a risk of the area being re-infested, especially if the land owner does not receive additional funding assistance for the clearing process.

Other concerns and proposed solutions raised by the participants, as classified under appropriate categories, included:

- **Institutional/structural:** Having the person who is seen as the “face” of the network who can be approached by stakeholders and able to respond or provide guidance on the project is fundamental for driving engagement. However, supporting such a position requires time and financial resources which are not always available.
- **Knowledge and information management:** There was an emphasis on the need to document the initiative, noting the lessons learnt and options to continue with business development. One participant raised the need for the initiative to establish a system to better manage documentation and knowledge from the engagement as a strategic way to communicate the value of the initiative to external stakeholders to understand the local reality of alien vegetation management, restoration and rehabilitation processes

on the catchment area. Similarly, the collated information would also serve as a reference point for any people intending to join the initiative so that they are able to frame their support to complement what was already being implemented on the ground. One way of achieving this was to ensure there was a good way of documenting, tracking, recording, managing the knowledge and research taking place in the Upper Breede River area and have that information accessible to interested stakeholders. The contractors also placed emphasis on promoting awareness of the contractors' jobs, and giving them exposure through identifying and letting them know of networking opportunities and allowing them to go and present their experiences and what they have learnt from others in the field.

- **Inefficiency in delivery by some contractors:** Two land owners mentioned that some of the contractors were not always efficient in delivering on a contract. Some contractors did not always manage their employees' conduct well and hence, some of the employees would leave litter on the farms where they have cleared, forcing the land owner to get another team to clear up. There was a proposal for a merit point system for the contractors, whereby one would accumulate points for a contract well executed and loses points should the land owners raise complaints on delivery of a contract. Another issue raised was that, at times, land owners scheduled their activities in the winter season, which was a challenge as some places would not be accessible due to bad weather conditions. Two respondents recommended scheduling of clearing in the summer season when the river banks would be more accessible.

4.4.5.1 Will the project continue in the absence of the WWSI?

Five respondents were of the opinion that the process would continue. From their experience, the initial clearing of alien vegetation on a property is the one that is most laborious and has severe cost implications. Given that the initial clearing had already been undertaken, they argued that the follow-up was fairly simple and cheaper to manage; hence they did not see any reason why they would not proceed. Besides, with the perceived benefits of alien clearing such as increased water being directed to the rivers, more water available for agriculture, reduced fuel load in case of fire breakouts, opening up of space for indigenous vegetation to grow, and established relations with the contractors, they said it would "not be wise" to abandon the process. However, they emphasised that they would have to ensure that they maintain the position of the Programme Coordinator and he provided the "oil that kept all gears in motion" – coordinating the process in line with delivering on the objectives as indicated in the MoA.

4.4.5.2 Policies and legislative framework for participatory approaches in environmental management

There was general reluctance and hesitation in responding to the question focusing on policies, laws and plans that support the participatory approach in the WWSI. One participant even responded that:

“There are frustrations raised over policies, over planning, over legislation. The relevant authority needs to simplify the process so that people can play their part in the alien clearing and restoration processes”. (Respondent X)

In the end, a total of 11 respondents engaged with the question. Five people were not aware of any laws, policies or strategies that focused on participation, three people were not certain and three were certain of the existence of mechanisms supporting participatory approaches in managing the landscape and clearing of alien invasive vegetation. Those in the know made reference to the NEMBA regulation that calls for all alien vegetation within 30 meters of a river to be cleared, and the second one that placed the responsibility on land owners for clearing alien vegetation on their land. Three respondents who were not sure questioned the validity of the laws and related regulations, given that there is no adequate provision or definition of the process of engagement in laws. One respondent indicated that there were laws and policies that were written down, but implementation is currently uncoordinated, hence there is loss of trust and credibility in local people following the laws. Figure 4.14 below shows the distribution of responses on the question.

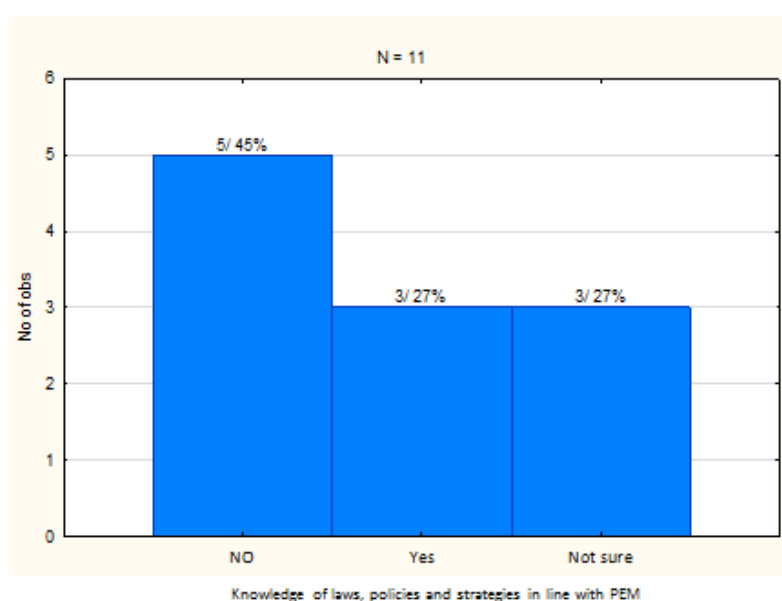


Figure 4.14: Knowledge of laws, policies and strategies in line with PEM

The following quotes from two of the respondents alluded to the problem of enforcement, and to reservations and lack of faith from the participants:

“One can break the law and no penalty [is] given to you.” (Respondent S).

“BGCMA is in a condition of constant flux, so there is no moving forward. To worsen the situation, there is incapacity within DWS to be the governing body to provide the guidance and oversight supposedly vested within it according to the National Water Act. DEA&DP and the Western Cape Department of Agriculture (DoA) have stepped up to fill the gap in a way that is commendable.... However, there is a grey area regarding lack of mandates between Western Cape DoA, DEA&DP and the national Department of Environmental Affairs (DEA) in the upper Breede and how their policies are aligned or speak with each other. This fuels confusion on which law or policy to follow through when implementing a project.” (Respondent X).

4.4.5.3 Overall impression of the WWSI

Asked on their overall impression on having a platform of engaging, as well as providing support with regard to managing the clearing of alien vegetation, all responses were positive. Of the 12 respondents who addressed the question, four (33%) agreed that such a platform and structure was useful, while eight (67%) strongly agreed with the importance of having such a platform. In a similar split, the participants also indicated confidence that such a participatory approach would contribute towards improving the water security profile in the Upper Breede River Catchment Area.

4.5 Summary

The chapter presented the details of the case study. The history of the WWSI was provided to give the context for the initiative. Findings from the data collection exercise were also presented. Among these were a summary of the demographics of participants engaged in data collection, data on stakeholder groups participating in the collaborative action on alien clearing in Wolseley. There was an outline of progress made to date as well as documentation of the legacy and impact of the initiative, both on the landscape and on the people participating. Challenges encountered were also presented and discussed in brief. Participants' reflections on the laws, policies and strategic actions, in line with the participatory approach to environmental management, were presented and the chapter concluded by presenting the overall impressions held by the participants regarding the importance of having such a platform as a vehicle to support environmental management within the broader context of achieving sustainable development.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of the study was to understand the perceptions of stakeholders in implementing participatory approaches in environmental management, within a broader context of achieving sustainable environmental management and water security. A case study of the WWSI, a collaborative network on clearing of alien vegetation and rehabilitation of the landscape within Wolseley (an area in the Cape Winelands District Municipality, Western Cape) was used to achieve the aim of the research. This chapter discusses perceptions by various stakeholders, including government departments, the private sector, private contractors and their employees as well as land owners on the WWSI. These discussions could be viewed as being objective and independent of the bias of the researcher as they applied reflexivity in the data collection and analysis processes. The latter section presents a summary on how the study's aim and objectives were achieved.

5.2 Discussion

5.2.1 Principles, factors and elements influencing stakeholder perceptions

The study identified several principles, factors and elements that influence the way stakeholders perceive an initiative. These perceptions also influence the stakeholders' attitude and participation in an initiative. Some of the key ones as identified in the study are presented in the section below.

5.2.1.1 *Complexity and systems thinking to address environmental challenges*

The study presented environmental management as a good example of a complex system that requires an integrated approach to addressing the challenges encountered. This study assessed several interrelated issues that impact environmental management, beginning with those focused on the environment (i.e. climate change, droughts, alien invasive vegetation and management of the landscape); social (i.e. high unemployment rates and poverty levels in the Witzenberg Municipality); economic (i.e. agricultural production and tourism); political and administrative (i.e. the interface between application of the policies and strategic action plans from different government departments and the involvement of the private sector and local land owners in environmental management issues within Wolseley). All these issues are connected and influence and affect the status of the environment in the area (Blewitt, 2008).

The participatory approach brought divergent views from stakeholders and stakeholder groups to openly engage on a neutral platform sensitive to power dynamics (Reed, 2017); and in the process identify solutions to a common challenge. The participatory model has resulted in the sustained engagement in the clearing of alien vegetation and rehabilitation of the landscape in the area for almost a decade since inception of the initiative.

5.2.1.2 Clarity of purpose and effective communication

Effective communication across the range of stakeholders and presenting an opportunity for co-production in defining solutions to challenges have been identified as important factors influencing the sustainability of an initiative. Carried out well, effective communication promotes self-mobilisation and active participation by the various stakeholders in the management and use of the resources as they feel a sense of belonging to the initiative (Berkes, 2009: 1692 - 1702; Patterson, 2016: 1198 - 1213). From the case study, the LandCare Programme seemed to set the scene for effective communication and engagement between itself, the land owners and WWUA at the inception of the initiative. Such an arrangement enabled the formation of the WWSI and also paved way for the WWSI's participation in other established networks such as UBCEG and the Freshwater Forum.

The study also shows that stakeholders who initiated engagement (WWSI) agreed and decided upfront on the desired outcome of the initiative, which was to contribute towards the clearing of alien vegetation of the landscape and in the process ensure that more water would flow to the river. This then served as the basis to inform the first MoA between WWUA, BGCMA and LandCare engagement that resulted in the development of additional “binding resources” supporting engagement on the initiative such as the RMMP and area-wide planning in Wolseley. As a result, it became easier to communicate the intention of the initiative and in the process recruit additional landowners. The MoA also served as a useful resource when resolving conflicts. This approach is also supported by the research carried out by Durham *et al.* (2014) and Volger *et al.* (2017: 5 - 16) who mentioned that clarity on aim and desired goal of an initiative upfront is important for managing expectations that stakeholders have of an intervention as well as serve as a way to mitigate conflict as the project unfolds. The continuous renewal of the MoA between WWUA, BGCMA and with LandCare having graduated to observer status, growing numbers in land owners joining the initiative and the initiative drawing growing interest from the private sector, not only provides legitimacy to the engagement, but could be viewed as positive for the project in accelerating action in the desired direction.

There is need for stakeholders to identify a common challenge as a basis for collaboration (Sterling *et al.*, 2017). In the same vein, Mendoza and Prabhu (2009) and Brown *et al.*, (2015) also argued that a common challenge usually draws participation of various stakeholders to collaborate on an initiative despite the differences in the level of impact these role players may have on the initiative. In the case of the WWSI, the challenge of controlling the spread of alien vegetation coupled with the need to improve water security brought the various stakeholders together. However, each of the stakeholders had their own reasons or strategies that they sought to achieve by being part of the network. As demonstrated through the case study, BGCMA managed to address the requirements according to the Catchment Management Strategy which is in line with the National Water Act; the DEA&DP addressed several plans such as the BERPP and the SWMP. Further, DEA&DP's participation in the initiative contributed towards development of the EEIF, addressing targeted initiatives listed in the Provincial Biodiversity Economy Strategy (PBES) through harnessing economic benefits from the alien clearing value chain, and the Department also managed to position the farmers in Wolseley to adapt to climate change through implementing the SmartAgri Plan. All these different strategies and action plans cumulatively contributed to achieving the goals for the Western Cape Provincial Strategic Plan, and by extension to the NDP and other relevant international development plans and decisions that South Africa is a Party to or has endorsed - thus giving both credibility and legitimacy to the initiative (Durham *et al.*, 2014).

5.2.1.3 Effective coordination and facilitation within the network

The presence of a Programme Coordinator was identified by the stakeholders as playing a central role in coordinating and facilitating engagement in the initiative (Durham *et al.*, 2014). The Programme Coordinator, who seemed well versed with the culture and practices of Wolseley and was viewed as the "voice of the land owners", seemed to identify with the values of the local stakeholders. From the interviews, the farmers and contractors did not always have the time to attend meetings and workshops. As such, they raised any issues they had through the Programme Coordinator, who directed their queries through the correct channels. In the same way, the Programme Coordinator consulted them and apprised them of decisions that were made at the respective platforms that the WWSI is affiliated with. Not only could the land owners, who were mainly farmers and contractors, remain focussed on the key businesses that drives their livelihoods, but they also felt involved and included in the engagement and decision making processes. The WWSI could thus be viewed as a vehicle to realising the implementation of the principle of subsidiarity (Borrini-Feyerabend *et al.*, 2004). Perceptions from the stakeholders who participated in the study also showed that the process of engagement within the network is inclusive, sensitive to the various concerns and

aspirations of the stakeholders. These are factors that have been identified and discussed in section 2.8 as instrumental in promoting stakeholder participation in implementing environmental management initiatives (Blewitt, 2008; Volger *et al.*, 2017).

5.2.1.4 *Benefits for stakeholders when implementing a participatory environmental management approach*

The issues of impact and benefits are subjective, with different stakeholders having presented varied responses regarding the benefit of participating in the initiative. While land owners clearly pointed to receiving technical and financial support in terms of alien clearing, respective government offices managed to report on their key plans of action, the private sector reported on their CSR portfolios, and the contractors and employees of the contractors reflected and presented more on the material benefits that they had managed to amass as a result of having wages and being employed (Knowles & Bragg, 2012; Nastran, 2015). These benefits contributed to their social security, for example through being assisted to get ID documents and opening of bank accounts, with one example of a research participant who was groomed by his mother to also set up his own contracting company.

Sibanda (2005) also supported the idea that people will collaborate and participate in environmental management initiatives when they deem the benefits of their participation would outweigh the costs of not being involved. Furthermore, according to the responses received in the interviews, the employees were very grateful to be empowered (Reed, 2008) and receive on-the-job-training where some rose to supervisory positions despite lacking the educational background – something that they would not have achieved due to their financial and historic background. From their responses, the researcher deduced that the employees would remain in the business of alien clearing, hence participating and contributing towards the clearing of alien invasive vegetation for as long as they receive wages.

The participatory approach to environmental management was also viewed as presenting a viable path for entrenching an ecosystem-based approach to the effects of climate change, manifest in the occurrences of droughts in the province. Through the collaborative action, each of the stakeholders and stakeholder groups were able to leverage on the contributions and strengths that their counterparts brought to the initiative. The stakeholders and stakeholder groups within the WWSI also began to self-mobilise and explore innovative ways to continue receiving the benefits from the collective action – with all efforts contributing towards sustainable environmental and landscape management in Wolseley.

5.2.1.5 Typology of participation

While one is inclined to say that the land owners could be classified as the primary stakeholders, in line with the definition provided by Mendoza and Prabhu (2009), since the alien vegetation affects their land and properties directly and any shortage of water impacts them directly, it becomes challenging to apply a broad category to other stakeholders such as the contractors, their employees, the government departments and the private sector (WWF-SA, Woolworth, CBI, BWT), as these stakeholders' roles and contributions vary depending on the phase of implementation. The non-static application of typologies of participation, as described in the "Wheel of Participation", as discussed in Chapter 2.4 provides a better way for classifying stakeholders according to their level of participation and influence on decision making at a given point during the project cycle (Reed *et al.*, 2017). For example, government departments and representatives from the private sector could be deemed primary stakeholders as they played a pivotal role in co-developing concepts and in project design, although they may not be resident in Wolseley. They could also be viewed as primary stakeholders when it came either to discharging their mandate or addressing issues indicated in their strategic documents. Regardless of the typology, it is evident that there was active participation/self-mobilisation and interactive participation (Pimbert & Pretty, 1997), as well as elements of citizen control and partnership (Arnstein, 1969) in the WWSI. A combination of these could have contributed to the positive perceptions that the stakeholders formed of the initiative and thus motivated to the active participation and strong buy-in in the project.

5.2.1.6 Challenges that hinder delivery in projects requiring participatory approaches

a) Consistency in funding streams

While most findings present positive perceptions, views and outlook on the collaborative engagement, the issue of financing and aligning budgets between the national government department (DEA) and that of the contractors, was highlighted as a key constraint. Challenges of funding could inhibit long-term planning and implementation of the project. This is in line with findings as presented by Hara and Nielsen (2003), who mentioned that a lack of consistency in accessing funding disrupted the momentum that stakeholders may have gained in the initiative, thus jeopardising the efforts that would have been made during the time funding was available.

b) Disparity between policies, regulatory frameworks in responding to local issues

Despite stakeholder engagement and the participatory approach being captured in international decisions, national and regional strategic policy documents, decisions and plans of action; the manner in which this has not filtered through to implementation at the local level

could be a cause for concern. From the hesitance shown by respondents to address the policy section in the case study, the researcher concluded that stakeholders and stakeholder groups tend to participate in environmental management initiatives more from the side of addressing an identified need or benefit to them, hence they view it as an opportunity to enhance self/community development value (Danielson, 2015; Murphree, 1991) rather than seeking guidance from the policies and regulatory frameworks. It could also be that the policies and regulatory frameworks offer guidance without presenting enabling mechanisms to achieve the desired state. As a result, land owners view the WWSI as a network that will support them in complying with the regulations, while they can also access supplementary funding to address the issue of alien invasions on their properties.

5.3 Conclusion

This study presented strong views and motivation on the value of engaging a variety of stakeholders when implementing environmental management initiatives within a broader context of achieving sustainable development. The value of collaborative partnerships in environmental management was presented in the literature reviewed and further corroborated by the perceptions from stakeholders involved in the case study. The case study on the WWSI presented the participatory approach as a tool that fosters horizontal links among user groups at the same level of organisation, examples being the different departments within the same sphere in government, as well as vertical alignment in strategies, plans and action across different levels of organisations. Further, participatory model promotes engagement between the different tiers of government and extending to incorporate the private sector, civil society, and land owners towards addressing an identified environmental challenge. The model for participation that was used in the WWSI also established a supporting structure that is helping to ensure that the socio-economic and ecological benefits realised to date are sustained. This speaks to sustainability of the model towards achieving sustainable development as the stakeholders and stakeholder groups are able to work with others in ways that leverage and build on others' strengths and collectively contributing towards sustainable environmental management.

The case study also demonstrated that local people play an important role in ensuring sustainability of an initiative especially when they are involved right from the inception phases, through to planning and implementing an identified solution. This also holds true when the issue at hand directly impacts their livelihood or affects their immediate surroundings. Pertinent to the case study was the issue of alien vegetation plans and the way it impacts biodiversity, intensity of fires when they occur, water security; and the livelihood options reliant

on availability of water or livelihood opportunities directly linked to the alien vegetation value chain.

However, the participatory approach is not without its challenges as there is need for good coordination to converge the divergent views of the different stakeholders towards achieving a desired common outcome. Firstly, a process to converge people around a shared outcome, therefore, requires time and funding to support such a position. Secondly, problems are experienced when there is overreliance on one stakeholder group to provide the funding. This results in difficulties in making long-term plans for project implementation and, even worse, for the contractors who are not able to provide job security to the unskilled and semi-skilled labour force in the area. This could result in the undoing of progress that could have been made in the removal of the alien vegetation during the time when funding was available. Examples include raising prospects for water insecurity due to the regrowth of the alien vegetation and increases the poverty levels in the area as the unemployed workers are left destitute. Thirdly, despite having good policies, if regulatory frameworks that promote participation are not communicated to all stakeholders, people may not make reference to these due to ignorance. There is a need to create an enabling environment for raising people's awareness on these. A fourth challenge is that legislation, in the absence of enforcement, is quite weak. As a result, people are discouraged from abiding by it as there are no consequences for breaking the law.

5.4 Recommendations

Following from the study, key recommendations would be to explore further regarding opportunities to:

- Foster genuine engagement and participation across the spheres of government, including participation of the private sector, civil society and communities in order to ensure that there is a cross-sectoral approach to writing policies, regulations and legislation. This, in turn, also needs to be supported by a rigorous multi-sectoral and multi-stakeholder engagement process to explore ways to create an enabling environment for promoting ownership and buy-in when it comes to implementing projects that contribute towards sustainable development. Initiatives of such a nature also benefit from having an embedded Programme Officer who is considered as the face of the initiative with whom all the stakeholders can identify with.
- Integrate local knowledge into scientific and technical information. This will be useful as a reference point for policymakers in making evidence-based and responsive context sensitive decisions in environmental management and formulating related policies.

- There is need to factor issues such as purpose and impact of an initiative – with preference given to initiatives that provide impact and visibility of results within a short space of time, pathways to build trust between people and as much as possible ways to simplify administrative processes when setting up initiatives that will require stakeholder participation.
- Explore ways to foster better engagement between the government and people so that there is alignment in planning and scheduling of disbursement of funds for clearing of alien vegetation to avoid seasons of “feast and famine” for contractors and their employees.
- Determine and quantify the socio-economic and environmental benefits realised as a result of implementing the participatory model in the management of catchment areas for alien vegetation clearing. One example could be identification and support of value added initiatives focusing on micro-enterprise development. These include *inter alia* opportunities for packaging and selling fire wood to local shop owners and processing of felled alien vegetation to biochar. Tangible results from such studies could serve as an incentive to further unlock interest from the private sector and other land owners to join similar focused initiative, a move that could alleviate the funding pressure experienced as a result of the lack of alignment between receipt of funding from national government and peak season during which funding is needed to pay contractors. Alternatively, it could be used as an incentive to either replicate the approach in alien vegetation clearing and rehabilitation of other strategic water source areas in the Western Cape.
- Enhance knowledge and information management within WWSI. There was an emphasis on the need to document the initiative, noting the lessons learnt and options to continue with business development. This way, the participants would be better able to communicate the value of the initiative to external stakeholders regarding the local reality of alien vegetation management, restoration and rehabilitation processes on the catchment area. Similarly, the collated information could also serve as a reference point for any stakeholders intending to join the initiative so that they are able to frame their support to complement what was already being implemented on the ground.
- Further refine lessons learnt in the study to inform the process of continuous improvement and sustained engagement within the WWSI. Subsequent studies could also identify opportunities for transferring the learning from engagement in WWSI to other catchments intending to foster collaborative engagement in management of the landscape. It is also important to note that the model could have worked in Wolseley

and is, therefore, not a “one-size-fits-all model”. There is a need to always determine the context before applying the model.

5.5 Achieving the research aim and objectives

The study achieved addressing the aim and related objectives as outlined below.

Chapter 1 introduced the purpose of the study through providing an overview of stakeholder engagement and participatory approach in implementing environmental management initiatives. The chapter also presented the study aim, objectives and the methodology through which the study would be carried out. The chapter delved into the data collecting methods, analysis, storage and platforms to report on the results of the study.

The research aim and objectives, as outlined in Chapter 1, were addressed in the subsequent thesis chapters as follows:

Chapter 2 focused on addressing study objective 1 through a review of literature relating to stakeholder perceptions, stakeholder attitudes, participation and engagements in the environmental management spectrum. The chapter also reviewed literature on the principles, elements and factors that influence perceptions of stakeholders regarding participating in an initiative as well as gleaned insights on how the dynamics between perceptions and attitude contribute to longevity (or lack thereof) on a project. As the case study was on collaborative action on clearing of alien vegetation, restoration and rehabilitation of a water catchment area for water security, the other part of the chapter reviewed literature on the impacts on alien invasive vegetation both on the environment and people’s livelihoods. It also explored how collective action on the clearing and management of landscapes has been carried out at various levels of government.

Chapter 3 addressed objective 2, which was focused on identifying and discussing relevant key environmental commitments and decisions that promote participation in sustainable environmental management. The chapter also identified the various relevant policies and legal frameworks guiding biodiversity management, alien clearing and water resource management at the national, provincial and local levels in South Africa. As the private sector is increasingly playing an important role in supporting efforts of environmental management through the CSR portfolio, the chapter also focused on some initiatives and pathways through which the private sector is contributing to the collective action.

The coherent narrative on the collaborative action of clearing alien vegetation in the Wolseley area in the Cape Winelands District Municipality, as outlined in study objective 3, was presented and discussed in Chapter 4. This tracked the history of collaboration through to progress to current status, highlighting the factors and milestones achieved as well as challenges encountered by the various stakeholders. The second part of the chapter focused on presenting results from the active engagement with the sample of stakeholders involved in the WWSI from the data collecting exercise. The data and results were presented and where possible, reflections made on the relationship between the findings and information reviewed in Chapters 2 (factors, principles, perceptions and attitudes) and 3 (policy and legislative framework) and how these influenced perceptions and attitudes of the respective stakeholders to participate in the WWSI.

Chapter 5 provided for further discussion on the perceptions of stakeholders and emerging issues that influence and affect participation of stakeholders in environmental management initiatives, reflecting on factors, principles and elements discussed in Chapters 2, 3 and 4. It also provided space for identifying gaps and making recommendations on ways to contribute towards continuous improvement of models that consider multidisciplinary and multisectoral stakeholder participation in implementing projects focused on environmental management; within the broader context of achieving sustainable development.

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Register of Legislation

South Africa

Conservation of Agricultural Resources Act 43 of 1983

Local Government: Municipal Systems Act 32 of 2000

National Environmental Management Act 107 of 1998

National Environmental Management: Biodiversity Act 10 of 2004

National Environmental Management: Biodiversity Act: The Alien and Invasive Species Regulations of 1 August 2014 (Government Notice 598 of 2014), with the Alien and Invasive Species Lists updated on 29 July 2016 (Government Notice 864 of 2016)

National Water Act 36 of 1998

Spatial Planning and Land Use Management Act 16 of 2013

The Constitution of the Western Cape of 1998

The Constitution of the Republic of South Africa of 1996

Water Service Act 108 of 1997

Register of International treaties

Aarhus Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters of 1998

United Nations Convention on Biological Diversity (UNCBD): Aichi Targets on Biodiversity of 2010

United Nations Conference on Environment and Development (UNCED) Rio de Janeiro Earth Summit and “Agenda 21” of 1992

United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement of 2015

United Nations Conference on Sustainable Development (UNCSD) (Rio +20): “The Future We Want” of 2012

World Summit on Sustainable Development of 2002

“Transforming Our World: The Agenda 2030 for Sustainable Development” and the Sustainable Development Goals of 2015

The African Union Agenda 2063: “The Africa We Want” of 2015

ANNEXURE A: QUESTIONNAIRE / INTERVIEW SCHEDULE

Thank you for your time and agreeing to participate through responding to this questionnaire/ interview schedule. As mentioned in the consent letter, the research project is entitled:

“Perceptions of stakeholders in a water stewardship initiative: Wolseley, South Africa”.

The study seeks to explore and understand the perceptions of people and organisations involved in this initiative. This will be achieved through: tracking and recording how the initiative was set up understanding the roles and responsibilities that the different people and organisations play in the initiative

Understanding the reasons/factors/principles attributed towards the success of the initiative – with particular emphasis on how the people’s perceptions influenced their attitude and level of participation in the initiative.

The research also intends to assess and discuss how the stakeholders’ perceptions influenced and shaped outputs and outcomes of the initiative.

Estimated length of the questionnaire interview with individuals is 45 minutes and 1.5 hours for organisations/ groups.

Your time and response to the questionnaire/ interview schedule are appreciated. All interviews and responses are confidential. Names of individuals or institution’s will not be mentioned or shared without written consent in the research report.

Date

Name of area

SECTION A: ABOUT YOU

Gender

Male

Female

Age group

- a 16 to 20 years
- b 20.1 to 29 years
- c 29.1 to 39 years
- d 39.1 to 49 years
- e 49.1 to 59 years
- f 59.1 to 69 years
- g older than 70 years

Level of education

- a No schooling
- b Primary school
- c Grade 8 to 11
- d Matric or equivalent
- e Tertiary
- f Other

Which stakeholder group do you represent?

For those resident in Wolseley kindly indicate source of water – dam, river or municipal tap

- a Farmers
- b Farm workers
- c Other workers
- d Government official:
Department:

- e NGO (please name, but name will not be disclosed in research unless express permission given):
- f Business (please name, but name will not be disclosed in research unless express permission given):
- g Other (please specify, but name will not be disclosed in research unless express permission given):

A. Source of income

Primary source of income

Do you have any additional source of income?

- a Commercial Farming
- b Farm salary - permanent
- c Farm salary – temporary/ seasonal
- d Contractor salary - permanent
- e Contractor salary - temporary/ seasonal
- f Formal employment (civil service, employed by a registered company, earning a regular salary...)
- g Other (please specify):

SECTION B: GENERAL KNOWLEDGE ON ENVIRONMENTAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT

Can you name the plants in the pictures below? Please provide common or scientific name next to each picture.

a



b



c



d



Can you name any two plant species considered as alien invasive or problem plants in the Breede Catchment?

a

b

Please give your opinion on the effect of alien invasive vegetation to the environment.

In your view, what factors affect the environment negatively?

- a. Are you familiar with the term 'sustainable development'?
- YES NO

If YES, when considering environment and environmental management, what do you see as THE MOST IMPORTANT element of sustainable development?

- b. If NO, sustainable development can be viewed as:

“a way for people to use resources to support their lives while also ensuring that some of those resources (or alternatives) will still be available for the next generation of people to also use in the future. Sustainable development is about trying to make the world a better place to live for us and our children’s children. Thus, we need to set a limit on the resources we use so that the future generations can fulfil their needs too. We need to maintain the stability and beauty of the nature and its elements. Examples of resources are water, minerals, vegetation, animals, clean air, ”.

What do you see as the most important elements of sustainable development in general? (Please pick as many as are relevant to you)?

- a Protection of the environment
- b Addressing social issues and human relationships
- c Addressing economic issues
- d Integrated environmental protection, social and economic development
- e Addressing inequality and poverty
- f Environmental justice
- g Equitable access to resources for all, including land and water
- h Long term sustainability
- i The planet heading towards environmental/ecological crisis
- j Climate change

- k Other (please specify):

What do you see as the most important elements of sustainable water security (Please pick as many as you think are relevant?)

- a Abundant and unlimited access to water for the present for nature and people
- b Abundant and unlimited access to water for the present and future for nature and people
- c Adequate systems to manage droughts
- d Help in fire prevention
- e Equitable and fair access to water for all people
- f Clearing of alien vegetation
- g Water Reuse & finding alternative Water Sources
- h Water-wise Agriculture and Industry sectors
- i Water Sensitive Design approaches
- j Develop good water stewardship practice - by individuals and as a collective by society
- k People engagement around planning for, and in water use
- l Acknowledgement of water as a finite resource
- m Other (please specify)

n Other (please specify)

SECTION C: VIEWS ON PARTICIPATION

13. When you hear the phrase “participation in environmental management”, which 3 words or phrases or images come to your mind?

14. Have you previously been involved in any “participatory” projects/ or projects in which there was stakeholder engagement (IDP, NGO led project, cooperative, etc)? YES, or NO

14.1 If yes, do you feel that participation (a participatory approach) is necessary or unnecessary when implementing social and environmental projects?

15. In your opinion, which of the following factors/principles are key in promoting engagement among different groups and participation in general (Please pick as many as relevant)?

	Principle/Factor	How would you rate the selected ones on a rate of 1 to 3 (1 being yes it is key and 3 being it goes beyond key, is an imperative)
a	Credibility	
b	Relevance of intervention	
c	Legitimacy	
d	Integrity	
e	Inclusion	
f	Involvement	
g	Purpose & impact	
h	Influence	
i	Consultation/Deliberation	
j	Trust between people	
k	Leadership	
l	Conviction – group of people who are driven a belief in looking for solutions to a common challenge	
m	Scheduling of activities	
n	Convenience and access to venues	
o	Enabling environment (availability of resources)	
p	Other (please specify)	
q	Other (please specify)	

16. Are you aware of the Wolseley Water Stewardship Initiative (WWSI)?
 YES NO

17. Are you involved in the action on clearing of alien invasive plants along the Upper Breede through the Wolseley Water Stewardship Initiative?
 YES NO

If you answered YES to question 17, please answer all the questions in the following section D. If you answered NO, please go to section F if you represent an Institution, and if not, *Thank you very much for your participation!*

SECTION D: PARTICIPATION IN WWSI - COLLECTIVE ALIEN CLEARING PROJECT

18. When did you join the Initiative (Month and Year) and how long have you been involved?
19. What do you feel are the intended long term goal(s) of the Wolseley Water Stewardship Initiative?
20. Can you list the names of other stakeholder groups or offices that are part of the initiative?
21. Who facilitates/ organises engagement within the WWSI?
- 22.a. Why did you join the initiative (Pick as many answers as relevant)?
- A Current or prospective livelihood reliance on agriculture (and availability of water is imperative)
 - B Knowledge of the harm alien vegetation has on the environment
 - C Trust in the founders of the initiative
 - D Required practice by government or client
 - E Strong belief in a just and sustainable development
 - F A paid job
 - G Because everyone else you knew was part of the initiative
 - H Invited by someone who was already part of the initiative
 - I Identified it as an opportunity to invest back into the society and the environment
 - J Contribution towards water security within the context of drought that the Western Cape is experiencing
 - K Other –please explain:
 - L Other –please explain:
22. b. Of the statements in the table below, which ones present your views on access and use of water and alien clearing before joining the initiative?

Water

- | | Before | Any changes since joining the initiative? |
|-------------------------|---|---|
| a | Water is not a scarce resource | |
| b | Water resource management is the responsibility of the government | |
| c | It is the government's responsibility to ensure that I have access to adequate water supply for personal needs and commercial production | If yes, <i>please list the name(s) of Departments</i> |
| d | Water Resource Management is a transversal issue and requires a collaborative approach to manage sustainably | |
| Alien vegetation | | |
| d | Alien vegetation competes with resources (water, space, sunlight etc) with fynbos or agricultural production and should be removed | |
| e | The management and clearing of alien invasive vegetation is the responsibility of the government | <i>(if yes, names the departments responsible)</i> |
| f | I will only clear alien vegetation on my property <i>(area where I am paid to do so)</i> | |
| g | There is potential to have collective action in clearing of alien but <i>the coordination could be cumbersome (or give any other reason that you felt this could not be possible)</i> | |
| 23. | What is your contribution to the project/ initiative? (Please pick all those applicable to you) | |
| | Provide further information if needed | |
| A | Finance | |
| B | Time | |
| C | Skills/expertise | |
| D | Attending meetings | |
| E | Venue/facilities for meetings | |
| F | Machinery | |
| G | Provide labour | |
| H | Other (please specify) | |
| I | Other (please specify) | |
| 24. | What key lessons have you learnt or benefits gained through participating in the initiative within the context of either, alien clearing, water security, sustainability or all of the three (Please pick all those applicable to you)? | |
| | Process issues | |
| A | Improved relationships with other stakeholders (even for issues beyond the scope of the initiative) | |
| B | Improved communication with other stakeholders | |
| C | Improved and direct engagement with government departments | |
| D | Improved and direct engagement with the private sector | |

- E Better understanding of lines of communication on environmental management related issues between different yet relevant offices
- Substantive/Content Issues**
- F Information and skills on water resource management & control and management of alien invasive vegetation
- G Better understanding of the geographic area and the connections between people and with the environmental landscape
- H Opportunities to be innovative through promoting project ownership and sustainable land use and land use management by land owners
- I Opportunity to experiment and be innovative in how I manage and use water to prolong availability of the resource
- J Sustained production on farms thus ensuring job security for employees or *I have managed to stay on my job despite the drought*
- K Nothing
- L Other –please specify
- M Other –please specify

25. Which statement below describes your level and or type of participation in the project?

Level of participation

Tick where appropriate and explain your selection
(encouraged to specify the stages of the project during which the specific level applies to the most in the project cycle)

By being told what is going to happen or has happened. (*This is an announcement by an administration or project management without listening to peoples' responses*).

By giving answers to questions posed by extractive project managers using questionnaire surveys or similar approaches. (*There is exclusion of engaging stakeholders who are deemed not to possess relevant information being asked for. People do not have the opportunity to influence proceedings of the initiative*).

By being consulted, and the admin listens to their views. However, the admin defines both problems and solutions, and may modify these in the light of people's responses. (*There is also exclusion of engaging stakeholders who are deemed not to possess relevant information being asked for. The admin and other professionals are not obliged to take on board people's views in making decisions for the initiative*).

Through providing resources, for example labour, in return for food,

cash, or other material incentives-often without taking part in the process of learning or receiving training or competence building from knowledgeable experts in environmental management.

By forming groups to meet pre-determined objectives related to the project. *(As alien clearing requires regular management and follow up, the Initiative is gradually receiving buy-in from the farmers and there is an internal drive among the farmers to mobilise resources internally so that the initiative becomes independent of external support with time).*

In joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones. *(As such, the people are empowered to take control over local decisions, as the people have a stake in maintaining structure).*

26. In your opinion, are the views of stakeholders considered and represented in decisions taken within the initiative?

YES

NO

27. Please explain your answer to the previous question:

28. In your opinion and for this case study, which of the following statements do you think are true or not true? Please explain or motivate your answer if needed.

STATEMENT	TRUE	NOT TRUE	EXPLAIN/MOTIVATE should you prefer
The stakeholder engagement process is credible and valid			
I trust the other stakeholders in the network			
I feel safe to voice my opinion during discussions			
The engagement process is relevant as it addresses a key challenge affecting us			
I was involved from an early stage of the process			
The engagement process is open and honest			
The engagement process has been inclusive and sensitive to the values and perspectives of the stakeholders			

The engagement process excludes some groups of stakeholders			
Previous bad experiences of people working together negatively affected the initiative			
Any conflict during the process was immediately addressed and solved			
Enough information was/is available during the engagement process to make good decisions			
WWSI approach promotes Cooperative Governance, which emphasises the importance of collaboration to work towards the common goal of sustainable and equitable water security			
The engagement process allows enough time to reach common understandings			
Stakeholders have a chance to make input in and influence the process that is followed			
Participation encourages sharing of challenges and identification of possible solutions to common problems			
I feel that my views are not always taken seriously			
Sustainable development is discussed and taken note of			
The objectives of the process are clear and relevant to me			
I have confidence that outputs of the initiative will influence decision making on environmental management at the govt. level			
The process will contribute to sustainable water security in the Province			
The outcome of the process will maintain and enhance ecological sustainability			
The process will lead to outcomes that are just and fair			
The process will enhance the local economy			
The process will promote job creation and encourage job security			
Alien clearing will ensure that more water flows to the river contributing to long term water security in the area			
Meetings are scheduled at times convenient for my participation			
i. I am satisfied with the frequency of meetings			
ii. Meetings are convened at accessible and convenient venues			

SECTION E: OUTCOMES OF THE INITIATIVE

29. In your view, which of the following elements have been achieved through the WWSI? Please indicate the stage of achievement of goals

Element	Time of achievement			Will be achieved in the long term
	At inception	Mid-way through the project	On-going	
Bringing relevant stakeholders to the table for a discussion around addressing a common challenge of clearing alien vegetation				
Access/Leveraging government funding for the purposes of improving environmental management				
Development of a constitution/code of practice for the WWSI				
Involvement of private landowners in clearing responsibilities, without placing an undue local administrative burden on collaborators like WWF and relevant departments in the 3 spheres of government				
Noted visual improvements in management and restoration of the landscape Ownership rests with the stakeholders based in the landscape or project area vs. being driven by external organisations Notable increase in levels of water flowing in the river Stakeholder engagement and relationship building among role-players who are engaged in alien clearing and river restoration in the designated area (farmers, associations, clearing and restoration contractors and government bodies like the Western Cape Department of Agriculture)				

a. How much do you agree with the following statements
The WWSI has been **central** in coordinating our approach towards alien vegetation clearing in the area

Strongly disagree *Disagree* *Neutral* *Agee* *Strongly Agree* *Don't know*

30.b. The participatory approach, drawing in various stakeholders, in management and clearing of alien will contribute towards improved water security

Strongly disagree *Disagree* *Neutral* *Agee* *Strongly Agree* *Don't know*

Which elements of the initiative have in your opinion not been successful?

Do you think that your views on environmental management, in particular water resource management, have changed through your involvement with the initiative?

YES NO

Please motivate and explain your answer to the previous question.

If you were to engage the administration or leadership of the initiative, what concerns would you raise regarding the stakeholder engagement process?

- a.
- b.
- c.

What would your proposed solutions be to the concerns raised in question 34?

In the absence of the WWSI, will you continue with the management and clearing of alien vegetation?

YES NO

Please explain your answer to the previous question:

Do you think present South African national or provincial laws, policies and plans support stakeholder engagement and a participatory approach when implementing projects relating to environmental management and sustainable development?

YES NO Not sure

Please explain or motivate your answer above.

If you answered YES to question 38, are there any specific policies, laws and plans that you are aware of and can name that supported implementation of the participatory approach in the WWSI. Please provide more detail if you want to.

Level of government	laws/ policies/ plans/ agreements/ processes	Relevance to WWSI
Local		

Provincial

National

International

End of interview with individuals - Thank you very much for your time!

SECTION F: ADDITIONAL QUESTIONS FOR INSTITUTIONS

In the following section, I would like to get more clarity regarding the organisation's involvement in the WWSI. As in the previous section, I will pose the questions and it would be appreciated if you can provide a detailed response to each question.

What is the role of your institution in supporting the Wolseley Water Stewardship Initiative?
What attracted you to the project? (Legislation, alignment with institution's vision...)

How are decisions made within the WWSI?

Do all partner organisations have to agree to a decision before it is made around activities of the initiative?

How does your institution's involvement influence decision -making for the Initiative?

46. Do you feel you have sometimes been compelled to compromise your own interests/organisation to advance the goals of this initiative?

YES

NO

Vice versa, did you feel that there were instances where you used your influence to sway decision making for outcomes of the initiative?

YES

NO

Please provide examples or further detail if you feel comfortable to:

Do you feel that capacity building and skills transfer to the local farmers, farm workers and SMMEs have been adequate so that the initiative can continue without support from your institution and other institutions offering support?

YES

NO

Please motivate your answer above:

In your view, what are the benefits/advantages of such participatory approaches in implementing projects focusing on environmental management?

In your opinion, how can these benefits/advantages be enhanced to ensure beneficiaries continue receiving them?

What challenges do you think slow progress regarding attainment of environmental sustainability?

How can the Initiative mitigate the negative effects/challenges associated with participation by different groups?

Do you feel your informal relationships exist between your organisation and other stakeholder groups benefit his initiative?

YES

NO

Do you feel there were certain role-players who made the stakeholder engagement successful and who made proactive decisions so that the goals of the initiative could be achieved?

YES

NO

Please motivate or expand on your answers on questions 55 and 56 if you feel comfortable to:

Were there any stakeholders whose involvement you think were counter-productive to the process?

YES

NO

Please motivate or expand on your answer if you feel comfortable to.

Have any innovations/ new thinking/ new networks come about because of this approach to implementation?

YES

NO

If YES, please mention some innovations/ new thinking/ new networks that have come about as a result of this approach of implementation?

Thank you very much for your time.

ANNEXURE B: PARTICIPANT CONSENT LETTER



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Dear Research Participant,

My name is Faith Chihumbiri and I am a student in the School Of Public Leadership at Stellenbosch University. I would like to invite you to participate in a research project entitled "*Participatory Environmental Management (PEM) for Sustainable Water Security: Social Perceptions of Stakeholders in the Wolseley Water Stewardship Initiative*".

Invasive alien plants have been identified by farmers and residents in Wolseley area, Cape Winelands District Municipality as one of the key threats to water security in the area. This, as invasive alien plants compete for the scarce water resources available to support both natural vegetation and the agricultural functions – both of which actively contribute to driving the economy of the Western Cape. The risk of water security has been further heightened by the current drought spell that the Western Cape Province is experiencing. As a response to the threat of water security, farmers in Wolseley through the Wolseley Water User Association, with support from the Western Cape Government Departments and the private sector, have managed to set up a collective alien vegetation clearing initiative which has come to be known as the Wolseley Water Stewardship Initiative. This research seeks to understand the process followed in setting up this seemingly successful initiative, the outcomes of this initiative. Further, the research seeks to explore the perceptions of the participating stakeholders and stakeholder groups' on the processes followed as well as how the stakeholders' perceptions influenced and shaped the engagement process and the resulting outputs and outcome of the initiative.

You have been identified as one of the stakeholders and I believe that your experience would be a valuable source of information for the study. I also hope that by participating, you may also gain alternative perceptions on the initiative. Please take note that your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you had initially agreed to take part.

Please take some time to read the information presented below, which will explain the envisaged details of your contribution to the project and contact me if you require further explanation or clarification of any aspect of the study.

Procedures: During this study you will be asked to partake through either responding to a questionnaire or in a semi-structured interview whereby I will lead the discussion with questions relevant to the study and continue to engage using a conversational approach. In the latter, the interview will be recorded for the researcher to refer to in my use in order to thematically analysing relevant data.

Risks: There are no potentially harmful risks related to your participation in this study.

Disclaimer/Withdrawal: Your participation is completely voluntary; you may refuse to participate, and you may withdraw at any time without having to state a reason and without any prejudice or penalty against you. Should you choose to withdraw, the researcher commits not to use any of the information you have provided without your signed consent. Note that the researcher may also withdraw you from the study at any time.

Confidentiality: All information collected in this study will be kept private in that you will not be identified by name at all, or by affiliation to an institution, without your signed consent. Confidentiality and anonymity will be maintained as pseudonyms will be used.

If you have any questions or concerns about the research, please feel free to contact me via email on fchihumbiri@gmail.com or my supervisor Ms Anneke Muller on jimuller@sun.ac.za.

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.
You have right to receive a copy of the Information and Consent form.

If you are willing to participate in this study please sign the attached Declaration of Consent and hand or e-mail it to the researcher.

DECLARATION BY PARTICIPANT

By _____ signing _____ below, I agree to take part in a research study entitled "*Participatory Environmental Management (PEM) for Sustainable Water Security: Social Perceptions of Stakeholders in the Wolseley Water Stewardship Initiative*" and conducted by **Faith Chihumbiri**.

I declare that:

I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.

I have had a chance to ask questions and all my questions have been adequately answered.

I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

All issues related to privacy and the confidentiality and use of the information I provide have been explained to my satisfaction.

Even though I understand that I will not be identified by name at all, I *do give permission/ do not give permission* [strike though the statement that is not applicable] to be identified by affiliation to an institution.

Signed on

Signature of participant

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [*name of the participant*]. [*He/she*] was encouraged and given ample time to ask me any questions. This conversation was conducted in [*Afrikaans/*English/*Xhosa/*Other*] and [*no translator was used/this conversation was translated into* _____ by _____].

Signature of Investigator

Date

ANNEXURE C: TOR WWUA AND WWF-SA

TERMS OF REFERENCE in support of the Agreement of Service to be rendered by independent contractors entered into between Wolseley Water User Association and The Programme Coordinator

The appointee XXX, will have the following tasks and responsibilities during the time of his employment with the WWUA:

During the 4 MONTHS' PROBATION, XXX will need to conduct the following task with input and training from LandCare:

Learn and apply the LandCare methodology on the active projects.

Meet with all the Alien Clearing implementing entities in the district.

Collate efforts from all the different Alien clearing entities (Map Shape files)

Meet involved land owners, visit sites and report on the current status.

Start compiling information for NRM application.

Meet with current Alien Clearing teams, evaluate the training requirements, etc.

Meet with YYY on the practical rehabilitation methodology.

ALIEN CLEARING & RESTORATION – management of teams and implementation of work as per approved project business plans, M&E, administration of teams, in-house training of labourers, quality control, constant communication with landowners, reporting, mapping, capturing data, planning, field verification, reporting on findings, etc.

AWARENESS – Id themes, guest speakers, invitations, procurement of venue, development of information sheets/brochure/newsletter, writing up of articles for media on any related and relevant Natural Resource theme required for the area.

Attend all WWUA, Organized Agric., FPA, UBCEG and other relevant network meetings and provide written back to the office reports as required.

Establish good working relationship with the land owners and maintain good communications with relevant partners. Provide a monthly short report on visits and outcomes of discussions.

River Maintenance & Management Plan (MMP) – visit sites “before & after”, report on findings, promote use of MMP principles, monitoring flood conditions and water sampling.

Active communication and participations with BGCMA officials on any water quality related matters.

RESEARCH Projects – actively participate and support any external research project, report back on findings/progress.

WRITING UP FUNDING PROPOSALS – I.e. NRM funding, International funding or any other partner funding. Responsible to identify new funding sources and maintain current funding streams, followed with quality written proposals to access funds.

RESEARCH on possible funding partners (local & overseas), sharing of articles or scientific literature.

Be constantly vigilant for possible ecological challenges that might arise through agricultural or any development practices and that has a negative influence on any natural resources.

Participate in the control and prevention of the pollution of nature, water and water resources.

Report in writing and orally to the WWUA or its agents in such manner and at such dates as the WWUA may request.