# Facilitating stakeholder engagement in innovation platforms: an ecosystem perspective within the South African health context

by

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Thesis presented in fulfilment of the requirements for the degree of Master of Engineering (Engineering Management) in the Faculty of Engineering at Stellenbosch University

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March 2020

DECLARATION

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ABSTRACT

South Africa's public healthcare sector is overburdened and underresourced, stifling the country's primary healthcare delivery system. The burden on the public healthcare sector could be relieved through the alleviation of the population's ill-health by focusing on the social determinants of health, such as living conditions and levels of social cohesion. This research considers socio-economic empowerment of those marginalised members of society living at the base of the pyramid (BOP) to improve factors contributing to poor health.

Innovation platforms (IPs) offer opportunities to empower the marginalised. IPs draw together diverse stakeholders, which may include the marginalised, to pool resources and knowledge and collaborate around a specific set of challenges. IP participants contribute towards the development of context-specific innovation solutions to complex problems. Understanding and managing stakeholder engagement in networks of diverse stakeholders is complex; more so with the participation of the commonly marginalised. This research aims to develop a conceptual framework and management tool to better understand and manage the engagement practices of IP stakeholders.

In a grounded theory approach, the research used a systematic literature review, a traditional literature review, semi-structured interviews and case studies as data collection methods. The research output was evaluated progressively.

The framework's development began with the analysis of relevant literature in the systematic literature review to identify good engagement practices present in IPs. Subsequently, the first part of the evaluation verified the findings of the systematic literature review using a subject matter expert interview and a theoretical case study, to further investigate these engagement practices. The preliminary framework was then compiled using the insight gained. The second part of the evaluation sought to confirm the content and structure of the preliminary framework. Semi-structured interviews with four subject matter experts informed this process. Where gaps were identified in the framework, the necessary modifications were made to address these. This led to the development of an enhanced conceptual framework.

A 'framework overview canvas' was developed to complement the conceptual framework and further simplify the conceptualisation of stakeholder engagement in IPs. A process for using the enhanced conceptual framework and its overview canvas was subsequently developed and applied in a case study for the final round of evaluation in this research. The innovation ecosystem perspective was applied to analyse an existing IP in the case study. The case study found the conceptual framework to be suitable and relevant as a tool for managing stakeholder engagement in IPs. Final modifications were made to the conceptual framework and a 'process canvas' was

developed to assist potential users in the application of the tool. The management tool for stakeholder engagement in IPs has three elements: (1) the final conceptual framework; (2) the framework overview canvas; and (3) the process canvas.

The tool is flexible in its application and may inform the development of new IPs or facilitate improved stakeholder management in existing IPs. This tool is not limited to IPs or to the South African health context; it remains relevant to other stakeholder network architectures and several other sectors.

OPSOMMING

Suid-Afrika se openbare gesondheidsorgsektor is oorbelas en ly as gevolg van 'n tekort aan die nodige hulpbronne. Die land se primêre gesondheidsorgstelsel word onderdruk as gevolg hiervan. Hierdie las mag verminder word deur die verbetering van die bevolking se gesondheid deur te fokus op die sosiale beslissende faktore van gesondheid, soos lewensomstandighede en die vlakke van sosiale samehorigheid. Hierdie navorsing beskou die sosio-ekonomiese bemagtiging van die gemarginaliseerde lede van die samelewing wat aan die basis van die piramide ('base of the pyramid' [BOP]) woon om faktore wat tot swak gesondheid bydra, te verbeter.

Innovasie-platforms (IPs) bied geleenthede om gemarginaliseerdes te bemagtig. IPs word gevorm uit die samekoms van verskillende belanghebbendes, wat die gemarginaliseerdes kan insluit, om hulpbronne en kennis saam te voeg en saam te werk aan 'n spesifieke stel uitdagings. Deelnemers aan IPs dra by tot die ontwikkeling van konteks-spesifieke innovasie-oplossings vir ingewikkelde probleme. Om die betrokkenheid van belanghebbendes in netwerke van uiteenlopende belanghebbendes te verstaan en te bestuur, is ingewikkeld, veral met die deelname van die gemarginaliseerdes. Hierdie navorsing het ten doel om 'n konseptuele raamwerk te ontwikkel om die betrokkenheidspraktyke van IP-belanghebbendes beter te verstaan en te bestuur.

Data-insamelingsmetodes binne 'n 'grounded theory' metodologie bestaan uit 'n sistematiese literatuurstudie, tradisionele literatuurstudie, semi-gestruktureerde onderhoude en gevallestudies. Die navorsingsuitsette is deurlopend geëvalueer.

Die ontwikkeling van die raamwerk is begin met die ontleding van relevante literatuur in die sistematiese literatuurstudie. Die literatuur is gekodeer om goeie betrokkenheidspraktyke in IPs te identifiseer. Vervolgens het die eerste deel van die evaluering die bevindings van die sistematiese literatuurstudie geverifieer met behulp van 'n semi-gestruktureerde onderhoud met 'n vakkundige en 'n teoretiese gevallestudie om hierdie betrokkenheidspraktyke verder te ondersoek. Daarna is die voorlopige raamwerk opgestel met behulp van die insig wat verkry is. Die tweede deel van die evaluering het probeer om die inhoud en struktuur van die voorlopige raamwerk te bevestig. Semi-gestruktureerde onderhoude met vier vakkundiges het hierdie proses ingelig. Waar daar leemtes in die raamwerk geïdentifiseer is, is die nodige wysigings aangebring om dit aan te spreek. Dit het gelei tot die ontwikkeling van 'n verbeterde konseptuele raamwerk.

'n 'Framework overview canvas' is ontwikkel om die konseptuele raamwerk aan te vul en die konseptualisering van die betrokkenheid van belanghebbendes in IPs verder te vereenvoudig. 'n Proses vir die gebruik van die verbeterde konseptuele raamwerk en sy 'overview canvas' is vervolgens ontwikkel en toegepas in 'n gevallestudie. Die gevallestudie vorm die finale evalueringsronde in hierdie navorsing. Die innovasie-ekosisteemperspektief is toegepas om 'n

bestaande IP in die gevallestudie te ontleed. Uit die gevallestudie is bevind dat die konseptuele raamwerk geskik en relevant is as 'n instrument vir die bestuur van betrokkenheid by belanghebbendes. Finale wysigings is aan die konseptuele raamwerk aangebring en 'n 'process canvas' is ontwikkel om potensiële gebruikers te help met die toepassing van die instrument. Die bestuursinstrument vir die betrokkenheid by belanghebbendes in IP's bestaan uit drie elemente: (1) die finale konseptuele raamwerk; (2) die 'framework overview canvas'; en (3) die 'process canvas'.

Die relevansie van die instrument is nie beperk tot IPs of die Suid-Afrikaanse gesondheidskonteks nie; dit bly relevant vir ander netwerkargitekture vir belanghebbendes asook vir verskeie ander sektore.

ACKNOWLEDGEMENTS

I want to extend my sincere gratitude to my research supervisor, Prof Saartjie Grobbelaar, for her invaluable role in the research. In the very first conversation we had, you told me that "we could change the world if you want"; though we likely haven't achieved that (yet), it displays your passion for your work and indeed your students. Your positive and encouraging style of supervision had a significant impact on my experience as a researcher. Thank you for always setting the standard a little higher than I would have liked it. I have grown significantly as a result.

I want to acknowledge all those who contributed towards the completion of the research in some way; university staff, students and research participants. This document would not be what it is today without your contributions of time and energy.

I want to thank my personal support network of close friends and family for their support throughout the past two years. Thank you for helping me maintain the necessary work-life balance.

To my parents, thank you for believing in me and supporting me throughout my life. I may never appreciate all that you have had to sacrifice to give me the opportunities that have come my way. This degree is another testimony that hard work and perseverance do pay off, just as you have taught me.

To Suzanne Basson, thank you for being by my side throughout this process. Thank you that you were my number one fan every step of the way. I appreciate that you could relate to my journey as a master's student yourself; it was a privilege to share the journey with you.

The greatest honour belongs to my Heavenly Father, without whom I would not have been able to see this research through to the end. May this research be of value to His Kingdom and may whatever I continue to do with this degree always be to His glory. I have seen repeatedly that the Lord's promises hold true:

"*Be strong. Take courage. Don't be intimidated. Don't give them a second thought because God, your God, is striding ahead of you. He's right there with you. He won't let you down; he won't leave you.*" *Deuteronomy 31:6 (MSG)*

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LIST OF ACRONYMS AND ABBREVIATIONS

AGM	Annual General Meeting
AIS	Agricultural Innovation Systems
AR4D	Agricultural Research for Development
BEE	Black Economic Empowerment
BOP	Base of the Pyramid
CHP	Community Health Promoter
GT	Grounded Theory
IP	Innovation Platform
IS	Innovation Systems
I4ID	Innovation for Inclusive Development
MSP	Multi-Stakeholder Partnership
NDP	National Development Plan
NDoH	National Department of Health
NGO	Non-Governmental Organisation
NIS	National Innovation Systems
NPO	Not-for-profit Organisation
R&D	Research and Development
REC	Research Ethics Committee
RIS	Regional Innovation Systems
r2p	Research to Practice
SIS	Sectoral Innovation Systems
SDG	Sustainable Development Goals
SWAP	Safe Water and AIDS Project
TIS	Technological Innovation Systems
VC	Value Chain

Chapter 1: Introduction

Chapter 1 introduces the research background which serves as the motivation for the research. Several concepts important to this study are introduced, including innovation platforms (IPs) and the innovation for inclusive development (I4ID) concept. The research problem emerges from the research background, and it is subsequently translated into research questions and research objectives. An overview of the research design explains how these objectives were met. Finally, the structure of this document is presented to assist the reader in navigating through the involved argument, the development of our framework and its subsequent evaluation.

Chapter outcomes	1. Provide background and motivation for the research
	2. Define the research problem, research questions and objectives
	3. Summarise the research design and methodology
	4. Define the scope and limitations of the research
	5. Present the valuable research contributions
	6. Convey the ethical considerations for the research
	7. Provide an overview of the document structure

1.1   Background to research

The background to the research includes the healthcare delivery challenges faced by developing countries and the important role of social health determinants on a population's level of health. The motivation for the research is drawn from these discussions.

1.1.1 Challenges faced in primary healthcare delivery

Developing countries face a multitude of healthcare delivery challenges. These challenges contribute to poor service provision and limited access to primary healthcare altogether. Additionally, there are discrepancies between the public and private healthcare sectors of many developing countries. As public healthcare sectors struggle to deliver on the healthcare needs of the population, the private healthcare sector continues to grow and flourish, looking after only a small percentage of the population [1], [2]. Indeed, this is the case for South Africa, and sub-Saharan Africa altogether. The multiple burden of disease present in developing countries places huge strains on their healthcare delivery systems. The low-income economies of developing countries limit the resources available to address the strain on their healthcare delivery systems [3], [4], while the distribution of the resources between the public and private sectors is skewed.

This skewed nature is clear from South Africa's health expenditure. The public sector spends an equivalent of 4.4% of Gross Domestic Product (GDP) serving 82% of the country's population [5], [6]. The public sector spends an equivalent of 4.2% of GDP while serving only 17% of the population [5], [6].

South Africa's public healthcare system is expected to deliver services with limited resources available. To offset the lack of financial resources, vacancies are often not filled and this has contributed to the overall shortage of healthcare workers in the public sector [7]–[9]. Poor availability of drugs, inadequate medical equipment and difficulty to access the healthcare facilities in some locations characterise the challenges faced by the public healthcare delivery systems of developing countries [3], [9].

The effects of the challenges are especially experienced by patients with non-communicable diseases, where service delivery for these conditions is noticeably poor in sub-Saharan Africa [4]. African countries have health systems that primarily attend to acute, infectious diseases, leaving non-communicable and chronic illnesses at the bottom of the pile [3], [4].

Chronic illnesses require more coordinated and integrated care compared to acute conditions; chronic conditions are coupled with continuity of care for long periods of time, require record keeping, involve educating the patients on their role to sustain a healthy lifestyle and manage the condition, and often require medical services from a variety of specialist fields [4]. This increasing complexity of healthcare delivery requires trained medical staff and other healthcare workers, and there are limited education programmes for staff and patient alike [3]. The successful training of staff and education of patients is likely to depend greatly on an understanding of the context in which these important stakeholders operate, where cultural factors must also be considered.

In an attempt to address these challenges, a number of initiatives have been implemented in South Africa, with varying levels of success [1]. There is growing interest and acknowledgement by governments of developing countries of the potential that public-private partnerships between healthcare stakeholders have to improve healthcare delivery and fast-track progress [10]. Public-private partnerships are but one means by which collaborative efforts are used to address problems in healthcare, but the idea of a multi-stakeholder partnership to drive innovation towards sustainable and effective solutions is highly appealing [11]. For example, South Africa's latest strategy towards digital health identifies the collaboration between and the contributions of diverse stakeholders as a strategic intervention [12].

South Africa's President already made this appeal at the 2018 Presidential Health Summit [9], [13]. He posits that the public healthcare sector needs a multi-sectoral approach, bringing together diverse stakeholders from government, civil society, academia, the healthcare sector and various private sector fields [9], [13]. The President has recognised that a collective approach is needed to leverage the pool of expertise and resources to improve the healthcare system [9], [13]. Effective stakeholder engagement is recognised as a requirement for the success of a collaborative approach [12].

1.1.2 Social determinants of health

There are several determinants of an individual's health. Two commonly perceived determinants of health are quality of healthcare services that prevent and treat diseases and access to them. However, these have been found to have minimal effect on the health of a population [14].

Other determinants of health relate to an individual's social and economic environment (income, education level, relationships with family and friends), their physical environment (healthy living and working spaces, safe water and air) and the individual's personal characteristics and behaviours (balanced diet, exercise, smoking and use of alcohol) [14]. These have a greater effect on the health of a population than the quality of healthcare services and access to them. Although individuals should take responsibility to ensure they remain as healthy as possible, they are not able to directly control most of these determinants.

The Sustainable Development Goals (SDGs) developed in 2015 signified a global shift of focus from the outcomes of health to the underlying determinants of health [15]. In South Africa, the National Development Plan (NDP) looks to follow the global development trends by attempting to align with the SDGs [16]. Therefore, addressing the social determinants of health is the key focus of the National Department of Health's (NDoH) Primary Health Care Re-engineering strategy, a strategy that is outlined in the NDP [16].

The significant social determinants of health contributing to early mortality in South Africa are poor housing, insufficient water and sanitation, unsafe food environments, high levels of alcohol and substance abuse, low levels of social cohesion, and the inadequate performance of the healthcare delivery system [16]. It is also necessary to acknowledge the role of social and economic policies as structural factors that shape the social and economic environments in which people live [16]. Therefore, the role of individuals and institutions with political power and control over decision-making structures cannot be ignored as they influence these policies and structural factors.

Efforts to address the social determinants of health in South Africa should encourage increased dialogue between different sectors [16]. Relationships that ensure alignment of planning and implementation of actions across different levels of government and between sectors, ministries and departments must be cultivated, while consideration must be given to what these actions may look like at different societal levels [16].

Emphasis is placed on the active engagement of civil society to expand efforts for health [16]. This encourages the use of participatory approaches to support efforts to strengthen social health determinants in South Africa.

1.2   Motivation for research

Section 1.1.2 describes how addressing poor social health determinants can lead to a healthier population, in turn placing less strain on a country's healthcare sector. It is important for developing countries to develop innovative technologies to strengthen primary healthcare delivery to better meet the needs of this sector. However, the policies of such countries ought to follow the trend of the global development agenda on the broader set of social determinants of health.

By adopting this perspective, potential opportunities to empower and uplift the low-income populations of developing countries emerge. It is common that these are the individuals who have the worst determinants of health due to their challenging physical, social and economic environments. This perspective reveals the value that participatory development processes may offer to low-income population groups to improve the state of their physical environment while increasing their sense of self-worth and independence, and in this way positively contribute to their health.

Considering healthcare delivery systems, innovation as the product of novel ideas and unique perspectives is important for improving the quality of care and enhancing the overall healthcare delivery systems of developing countries [17]. This requires that these innovations are adopted [18]. Where traditional approaches to problem solving use teams of experts who take a 'top-down' approach to addressing a challenge, the context of emergence of the challenge may be lost [19], [20]. Traditional approaches disregard the insights and experiences of possible beneficiaries of these interventions. If innovation is to be effective in healthcare, all relevant stakeholders must be considered and engaged with [17]. Inclusion of marginalised individuals in such engagement processes is of high importance to ensure solutions are contextually appropriate, and to ensure the adoption and dissemination of these solutions for maximum impact on the healthcare system.

There may be many opportunities for the innovation processes which underlie the development of new technologies, goods and services to be informed by participatory processes, which simultaneously empower the participants. This more holistic approach to addressing the determinants of health may improve the overall state of a population's health and reduce the strain on the healthcare delivery system.

1.3   Introducing important concepts of this study

Some key concepts are introduced in this section to provide the necessary understanding before the research problem is introduced and the research questions and objectives are developed.

1.3.1 Innovation platforms

Researchers commonly refer to an innovation platform (IP) as a collection of individuals who aim to drive learning and change through collaborative participation in a partnership centred around a

specific set of challenges [11], [21], [22]. These individuals come from diverse backgrounds and have different, often competing and diverging, interests [21], [23]. IP members collaborate to identify challenges and find opportunities to address these challenges and meet the platform goals [21]. These goals must align in some way with the needs or interests of the participants themselves and the organisations or communities which they represent. Often used in research, IPs also have significant potential in development contexts [11].

Because of their potential as arenas for innovation and development, IPs have gained traction among researchers [20]. The increasing complexity of challenges faced in important sectors such as the healthcare sector, means that traditional, linear approaches to research are insufficient [20]. Active engagement with stakeholders, including the individuals and groups who are to benefit from the research, is becoming popular among researchers who look to produce solutions which are appropriate and will be implemented [20]. IPs are effective in addressing the complex issues present in various economic sectors [11], [22].

IPs may be established at different levels of society [11]. These include local (village or community) levels, district levels or national levels [11]. IPs have been implemented at various levels within value chains and economic sectors. They may operate at a single level, or include several levels (multi-level platforms) [11]. Horizontal linkages of IPs may exist (platform-of-platforms), which strengthens innovation and learning potential [21].

Participating individuals might include community members, policymakers, government officials, researchers, field experts and practitioners, depending on the platform's purpose and the level at which it is established [11], [21].

IPs are distinguishable by their emphasis on iterative learning processes through reflection and negotiation. An exchange of knowledge and learning among participating individuals complements the innovation process [24]. IPs are also called innovation networks, innovation coalitions and multi-stakeholder innovation partnerships [11]. This document adopts the term 'innovation platform' to refer to a group of diverse, interacting actors aiming to achieve a set of objectives through innovation.

1.3.1.1   *Distinguishing IPs from platform business models*
The term 'innovation platform' may lead to some confusion because of our understanding of more traditional views of platforms. It is important to keep in mind the partnership approach followed by IPs, which distinguishes it from platform business models [25].

It is likely that the term 'innovation platform' became prominent because these partnerships serve as an open and participative infrastructure where value-creating interactions occur between

different actors, sharing similarities with Parker and colleagues' definition of platforms in a business context [26], [27].

A different term to describe this partnership approach to innovation, such as 'innovation network' or 'innovation coalition', may be a better description. However, and as will be seen later in the review of relevant literature, the term 'innovation platform' has been adopted by several researchers to describe the phenomenon. This is especially true for development contexts, like that of this research, where grassroots innovations are cooperatively developed and managed to empower a marginalised beneficiary group.

1.3.2 Innovation ecosystems and complexity principles

Innovation ecosystems have a similar foundation of cooperative innovation as IPs, yet have a larger reach in terms of participating stakeholders [18]. In other words, innovation ecosystems may be seen as bigger and more complex IPs. However, a more accurate explanation is that innovation ecosystems emerge around IPs [24] and the ecosystem expands in size, complexity and influence once the IPs begin to form linkages with other platforms, both horizontally and vertically [21]. Ecosystems emerge where value cannot be created by a single entity alone but rely on interactions with other entities. The ecosystem metaphor gives insight into the complexities associated with the interactions between platform actors, and between the platform and its environment [18].

The interactions of platform actors with the wider ecosystem influence the course of action of IPs; these actors are representatives of their home organisations, each having their own goals [21], [23]. As a result, the perspectives of each actor are heavily influenced by their own home organisation, which in turn influences the problem identification and goal setting within the platform [28].

Traditional methods of innovation systems analysis fall short of sufficiently describing the innovation landscape [29]. The ecosystems perspective of innovation considers the evolutionary nature of innovation [24] and of platforms [30]. This is of relevance to the proposed research because of the evolution observed in IPs, which has practical implications regarding platform governance, facilitation, focus and participating actors [11], [18], [21], [23]. Research focusing on IPs must be sensitive to this evolutionary nature of IPs.

The ecosystems perspective on innovation is not without its criticisms. Some researchers view it as a flawed metaphor which does no more than guide thinking around innovation and economic development. Others regard the construct as nothing more than innovation systems (IS) [31]. Rules which guide its application need to be developed for the value of the perspective to be unlocked [31]. Despite criticisms, its potential and place as a lens for innovation management is widely recognised [31], [32].

Any attempt to theorise the process of emergence of ecosystems and the dynamic interactions between ecosystem stakeholders must consider using principles of complexity and consider the effects of self-organisation of stakeholder roles within the ecosystem [24], [30]. Stakeholders' roles in the ecosystem are dynamic and constantly shift between collaboration and competition, especially apparent among stakeholders of technology platform ecosystems [30]. The complexity of platform ecosystems is further increased by the network effect; a feature of platforms regarding the increase in the value and potential of platforms as more stakeholders engage with them [25].

The complexity of ecosystems makes the need for governance of the ecosystem very important; without arranging stakeholder roles and setting rules and contractual agreements in place, the ecosystem cannot be sustained. A careful mix of incentives and responsibilities will encourage participation and good behaviour of the stakeholders. Governance further deals with who may participate as actors, the division of value among actors, and conflict management [25].

1.3.3 The innovation for inclusive development philosophy

Traditional views of innovation associate the phenomenon with the production of cutting-edge technologies, goods and services, targeted mostly at high-income consumers. This view often excludes low-income consumers [33]. These traditional views regularly associate development with economic growth, viewing social development as a byproduct [33].

A view that development includes not only economic factors, but also social factors, has gained traction over recent years [33], [34]. The consequence of this view is that development must consider the social and economic inclusion of marginalised low-income consumers. The result is an innovation philosophy that aims to include economically marginalised groups and individuals in the development of new goods and services to drive development towards innovative technologies that incorporate the needs and interests of these groups [33].

Referring to marginalised stakeholders may have a variety of interpretations depending on the context. This research is positioned in the developing world and marginalised stakeholders are those groups at the 'base of the pyramid' (BOP) [35]. The BOP represents society's poorest socio-economic group[1] [35]; an estimated 40% of South Africa's population in 2015 [36]. That is equivalent to 22,12 million people.

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[1] Individuals living off less than R20 per day (estimation based on Prahalad and Hart's [38] threshold of $4 per day) [35], [213]

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The emergence of innovation for inclusive development (I4ID) is closely associated with the evolution of the enterprise approach to leveraging the BOP to profitably eradicate poverty [35]. This evolution has elsewhere been referred to as BOP 1.0, Bop 2.0 and BOP 3.0 [35].

1.3.3.1   BOP 1.0

In his book "The fortune at the bottom of the pyramid: eradicating poverty through profits", Prahalad [37] called on businesses to participate in the elimination of poverty through profitable intervention. As a result, the view of the poor as a mass market to be tapped became popular [33], [38]. Non-governmental organisations (NGOs) and other on-the-ground actors served as mediators between businesses and the poor, with no direct relationships between businesses and their target customers [35]. Although attention was now cast on the commonly forgotten poor, the initial approach failed to deliver sufficient value to businesses and the BOP market segment [39].

1.3.3.2   BOP 2.0

Recognition of the shortcoming of the initial approach encouraged a reformed view of individuals at the BOP for businesses; a fundamental shift in logic from accessing marginalised markets to creating entirely new markets had occurred [40]. The necessity for value co-creation with marginalised communities became apparent and bottom-up approaches to innovation development were pursued [35], [41]. This included creating metrics and timelines which are suited to the unique features of the marginalised market [41]. The new approach saw NGOs now acting as facilitators of direct and personal relationships with the poor [42].

The new approach already acknowledged the importance of participatory approaches and engaging communities at the BOP, but BOP 2.0 still viewed the business as a single entity [35].

1.3.3.3   BOP 3.0

With BOP 3.0, recognition was given to a firm's position in a broader innovation ecosystem consisting of a variety of interacting organisations [35], [43]. This approach focuses on inclusive business practices to promote tangible socio-economic transformation of the BOP [33], [44], [45]. The approach acknowledges the need for various role players in the development of appropriate, scalable innovations, where BOP stakeholders are included as important actors [35], [46].

Through partnerships, BOP stakeholders are included as entrepreneurs, producers and consumers to co-create value [33], [45]. BOP 3.0 promotes the development of partnership networks of NGOs, government stakeholders, academic stakeholders and multidisciplinary business stakeholders to access the necessary but often lacking knowledge and resources [35].

Therefore, innovation for inclusive development (I4ID) must go beyond seeing the low-income populations of developing countries as an "accessible mass market" [33] for the sale of goods and services [34], [38]. The inclusion of marginalised groups and individuals must incorporate

participation of these groups and individuals in the innovation process, and should thus enable and empower these groups and individuals who usually find themselves on the sidelines of development and decision-making processes [21], [34]. Inclusion is often erroneously used to describe what is essentially representation of the marginalised, but innovation for inclusive development must consider these stakeholders as participants in the innovation process, sufficiently elevating their social status. Effectively, innovation for inclusive development must instil a sense of dignity and self-worth in these participants. To this end, appropriate participation techniques must be used, which will allow these participants the necessary level of participation and influence [47], [48].

The I4ID philosophy can underpin the formation of various innovation architectures, including IPs [24], [45], [49]. IPs may serve as the mechanism for establishing the sophisticated stakeholder networks alluded to in the BOP 3.0 approach [45], [49]. This philosophy allows for the challenge landscape to be effectively identified, considering the context of emergence of the challenge. This is done by including the economically marginalised groups and individuals as participants in the IP because low-income groups and individuals experience challenges that are very difficult to comprehend outside of their context [11], [23]. Without considering the context of emergence of the challenge, any solutions proposed by the IP risk dealing with the superficial symptoms of the challenge alone, and not the root cause [4]. As a result, the solution may not be effective. After all, novel ideas, improvements and solutions to challenges can only be regarded as innovation if these have been implemented and prove to be beneficial [18].

1.4 Research problem statement

Efforts to address the complex challenges faced by the healthcare sector in South Africa should focus on improving the quality of service delivery and overcoming barriers to access [50]. The result would be a more responsive healthcare delivery system, able to contribute to an improved quality of life of South Africa's citizens. As discussed previously, innovation and the development of novel technologies, goods and services have an important part to play in strengthening the country's healthcare delivery system [17].

The effect of the social determinants of health on South Africa's healthcare delivery system should not be disregarded. The ill-health of a large proportion of the population, largely due to factors like poor housing conditions, substance abuse and low social cohesion, places strain on the healthcare delivery system [14], [16]. Social determinants are hinged on equity, economic growth and social stability. Efforts to address social determinants of health in South Africa encourage alignment across government departments, as well as across economic sectors [16]. These efforts additionally emphasise the benefits of the participation of civil society to strengthen efforts for health [16].

Innovation Platforms (IPs), underpinned by an innovation for inclusive development (I4ID) philosophy, have the potential to serve as the arena for the development of appropriate innovation solutions to strengthen the healthcare delivery system [11], [23], [51]. Additionally, the inclusive nature of these IPs has the potential to empower their participants, both economically and socially [47], [48]. This shows that IPs have the potential to holistically address the determinants of health in South Africa; both the social determinants and the performance of the healthcare delivery system.

Towards managing the formation and functioning of IPs, a framework to improve our understanding of the interactions between platform participants would be helpful. The researcher has found no evidence of the existence of such a framework for stakeholder engagement and participation in IPs. Healthy interactions between platform participants will lead to the effective operation of the IP, increasing the likelihood of innovation production. Furthermore, the appropriate participation mechanisms for the commonly marginalised and the various engagement dynamics present in a diverse partnership need to be understood. This is critical if the IP is to protect and empower its participants, especially those regarded as weaker and commonly marginalised [47], [48].

1.5   Research questions and objectives

The research questions were developed from the background and problem statement to this research. Subsequently, research objectives were formulated to address these questions. This section presents the research questions and research objectives.

1.5.1 Research questions

The research questions have three components, including the main research question, sub-questions from the problem statement, and additional sub-questions to guide a conceptual literature review.

The research aimed to address the following main research question: How can a conceptual framework inform the engagement practices of IPs to enhance the collaboration of efforts around social determinants of health in the South African context?

The research was guided by the following sub-questions:

1. What engagement practices are present in stakeholder networks of IPs underpinned by an I4ID philosophy?
2. How do these enable the inclusion of the marginalised, BOP stakeholders in innovation processes?
3. Do stakeholder networks of IPs and their interventions evolve over time?
4. Which key stakeholders are present in South Africa's development contexts for strengthening the population's level of health?

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The conceptual literature review addressed the following additional sub-questions:

1. What are the benefits of adopting an innovation ecosystem perspective on innovation development?
2. How can the functioning of IPs be conceptualised by the innovation ecosystem perspective?
3. How is the participation of civil society in decision-making and development initiatives conceptualised?
4. What does the participation of the commonly marginalised mean in the South African health context?

1.5.2 Research objectives

To address the research questions, the research objectives were executed in two phases. The first phase entailed the theorisation of concepts and the development of a conceptual framework. The second phase entailed the evaluation of the conceptual framework and the development of a management tool.

Phase 1: Theorisation and conceptual framework development

Phase 1 comprised a systematic literature review of IPs underpinned by I4ID to identify the engagement themes and criteria for good engagement practice that emerge from the literature. These themes and criteria were tested for suitability in a theoretical case study on an existing IP and using a single semi-structured interview with a subject matter expert, to gain a better understanding of the identified concepts. Conceptual literature reviews were used to inform the role of participatory approaches in innovation development and to investigate the suitability of adopting the innovation ecosystem perspective. A preliminary conceptual framework was developed from meeting the preceding objectives. The main outcome of Phase 1 was a preliminary conceptual framework.

The specific research objectives for Phase 1 were:

1. Conduct a systematic literature review to review the engagement practices present in IPs underpinned by an I4ID philosophy.
2. Use insights from an existing IP and subject matter experts to better understand the identified engagement practices.
3. Conduct a conceptual literature review to establish the suitability of the innovation ecosystem perspective to conceptualise innovation development.
4. Conduct a conceptual literature review to understand the requirements and risks associated with using participatory mechanisms in development contexts.

5. Develop a preliminary conceptual framework to guide the engagement and participation of IP participants.

Phase 2: Evaluation and final management tool

The evaluation of the preliminary framework was conducted using multiple semi-structured interviews with subject matter experts in industry. Their insights were analysed and used to identify any modifications and additions that needed to be made to the framework's content. This led to the development of an enhanced framework. The enhanced framework was applied in an industry-based case study to determine its suitability as a management tool. The main outcome of Phase 2 was the final framework and management tool.

The specific research objectives for Phase 2 were:

6. Evaluate the preliminary conceptual framework through semi-structured interviews with subject matter experts in industry and develop an enhanced framework.
7. Test the usefulness and reliability of the enhanced framework as a management tool by means of a case study on its application in an existing IP in the South African health context.
8. Present a management tool for stakeholder engagement in IPs in the South African health context.

1.6   Overview of research design

The research followed a Grounded Theory (GT) approach based on Jabareen's [52] procedure for developing conceptual frameworks. The research followed four distinct parts as depicted in Figure 1. The first part consisted of an overview of important concepts and developing the research background. It continued with the systematic literature review to identify engagement themes and good engagement practices present in IPs. Part 2 saw the theoretical evaluation of the identified concepts with the preliminary framework as the output. Part 3 used semi-structured interviews as the framework evaluation method to produce an enhanced framework. Finally, in Part 4, the enhanced framework was applied as a management tool to an in-depth case study in industry, the output of which is the finalised framework and management tool for stakeholder engagement and participation in IPs. A detailed breakdown of the research design is given in Section 2.9.
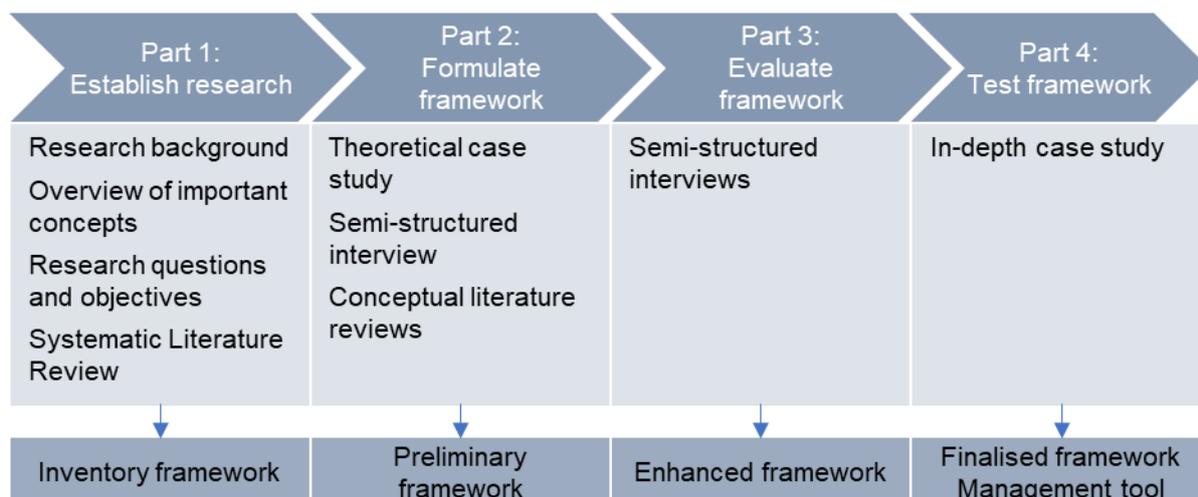
Figure 1: Overview of research procedure followed

1.7 Scope and limitations of research

The research considered IPs, underpinned by an I4ID philosophy, specifically focusing on stakeholder engagement and participation in these IPs. The systematic literature review investigated the overlap of IPs and I4ID, and the publications were analysed to identify engagement themes present in these IPs. The resultant framework is situated in the South African health context. Figure 2 is a graphical representation of the scope of the research.
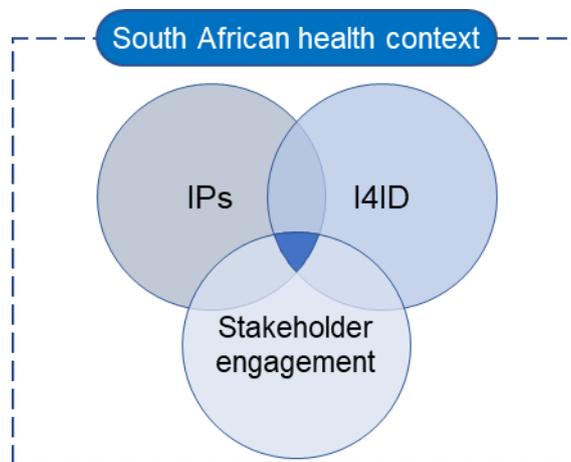
Figure 2: Scope of research

1.7.1 Delimitations of research

The research was maintained within the intended scope by delimitations at various stages of the research process. Most prominent of these were the search criteria and the inclusion criteria applied during the systematic literature review. The delimitations of the research were:

1. The research focused on IPs with an I4ID philosophy seeking to produce context-specific innovation solutions while empowering participants;

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2. Focus was on the engagement practices present in these IPs: how stakeholders interact to participate in value co-creation;

3. Application focus is the South African health context, but literature consulted was multidisciplinary and included multiple geographical contexts;

4. The framework captures these engagement practices and presents them in a manner intended to bring the user's attention to important aspects of stakeholder engagement in IPs;

5. It has the potential to guide the management of effective stakeholder engagement towards realising the platform goals;

6. It has the potential to advocate for the increased adoption of participatory mechanisms for including the commonly marginalised in the co-creation of innovation.

1.7.2 Limitations of research

The research has limitations as a result of the chosen scope:

1. The research does not account for every possible dynamic associated with stakeholder engagement, only those that emerged from literature and insights from subject matter experts;

2. The framework does not account for every possible stakeholder type, but delivers a broad conceptualisation which can be refined to specific stakeholders by the user;

3. Focus is on interactions between platform participants and does not intentionally address the management and governance of IPs;

4. Similarly, the research may inform stakeholder interactions in the wider innovation ecosystem, but does not address the management and governance of the ecosystem;

5. The framework is conceptual in nature and a sufficient understanding of the specific environment is necessary prior to its use;

6. Detailed research is not included into stakeholder analysis techniques and participation mechanisms, but these important concepts are visited in the conceptual reviews.

1.8 Aim and valuable contribution of the research

The aim of this research is to inform the management of individual stakeholder engagement activities in the IP to ensure effective collaboration and value co-creation. This is important if the potential of IPs to address the healthcare delivery challenges faced in South Africa is to be leveraged to holistically address health determinants. This aim is aligned with a global focus to address the underlying determinants of health, rather than focusing on the outcomes of health [15].

As a partnership approach to the co-creation of innovation, IPs cannot function effectively unless all participants are actively involved and interactions between them are healthy and meaningful. The research aims to develop a framework that captures the complexities involved in the

interactions between individual stakeholders, especially due to the diversity present in the partnership. This framework is valuable for guiding the management and growth of stakeholder networks.

The framework accounts for the complexities involved in the participation of commonly marginalised communities and individuals as stakeholders in the innovation process. Participation intends to empower these stakeholders and this needs to be managed effectively, lest it do more damage than good for those involved [47], [48].

The framework contributes to the management of innovation development in the context of innovation co-creation. Furthermore, the framework uses the innovation ecosystem perspective, which highlights the importance of interactions between stakeholders of the innovation process. This perspective also shines a light on the power dynamics present between stakeholders, like the fight to restore power balances in natural ecosystems.

Although the research problem draws attention to the potential of IPs in a South African health context, the framework may be applicable to the contexts of other developing countries and in sectors other than healthcare. Finally, the researcher is not aware of any existing frameworks for stakeholder engagement and participation in IPs.

1.9   Ethical implications of the research

The research had no significant ethical implications as it did not use data or information of a sensitive nature. The involvement of individuals from industry in the evaluation phase required that the necessary ethical clearance be obtained from the Research and Ethics Committee (REC) of Stellenbosch University. Ethical clearance for interviews and case studies was granted by the REC to research project ING-2018-8436 on condition that:

1. Potential participants understood that their participation in the research was voluntary and could be withdrawn at any time before the research was completed;
2. Consent for participation was obtained from participants before data collection commenced;
3. Participants understood that they did not need to answer any questions they were not comfortable with;
4. Participants' personal information and all information disclosed by the participants remained confidential;
5. All information was stored securely.

1.10 Document structure: an overview

The document structure follows the logic of the research process closely. The chapters progress according to the completion of the four parts of the research. Each chapter begins with a summary of the key objectives that the chapter aims to address. A summary of each chapter is presented next.

Chapter 1: Introduction

Chapter 1 introduces the background and motivation for the research and gives an overview of important concepts, including IPs, innovation ecosystems and I4ID. The problem statement is given followed by the research questions and objectives. Chapter 1 presents the research scope and valuable contributions of the research. The ethical implications of the research are also discussed.

Chapter 2: Research methodology

Chapter 2 presents the methodology used to meet the project objectives. This chapter includes an in-depth discussion of the Conceptual Framework Analysis (CFA) procedure used in the research. Chapter 2 continues with a discussion of the systematic literature review procedure and various evaluation methods that complemented the development of the conceptual framework.

Chapter 3: Conceptual literature review

The outputs of conceptual literature reviews are presented in Chapter 3. The conceptual reviews considered innovation ecosystem literature and stakeholder engagement and participation literature to guide the development and positioning of the conceptual framework within the innovation ecosystem perspective. The important considerations and common pitfalls to participatory development initiatives further informed the development of the stakeholder engagement framework.

Chapter 4: Systematic literature review

The systematic literature review was the primary method used to understand the stakeholder engagement practices present in IPs underpinned by an I4ID philosophy. Chapter 4 contains an in-depth description of the methodology used, including the search protocol and selection criteria. Engagement themes identified in the analysis of the publications are presented. These themes formed the basis from which the research continued to develop the conceptual framework.

Chapter 5: Inventory framework and preliminary evaluation

Chapter 5 presents an inventory of engagement mechanisms compiled from the documentary analysis of the primary publications. The first part of the progressive evaluation approach sought to test the completeness and applicability of the engagement mechanisms. A theoretical case and

a semi-structured interview with a subject matter expert in the South African health context informed this first part of the evaluation. Using the insight from the case study and interview, the inventory framework was screened to identify items which would be translated into the paradigm of a conceptual framework.

Chapter 6: Framework construction and evaluation

The screened inventory items were subsequently translated into action statements. The action statements were compiled into the preliminary stakeholder engagement framework, presented in Chapter 6. The chapter continues to evaluate the preliminary framework with the second part of the progressive evaluation approach. Four semi-structured interviews with a diverse group of subject matter experts were used to inform the evaluation. The output of the evaluation approach is an enhanced stakeholder engagement framework. A 'framework overview canvas' was designed to supplement the framework.

Chapter 7: Case study application

In the third and final part of the progressive evaluation approach, the enhanced framework and framework overview canvas were applied in a case study. Chapter 7 reports on the case study approach and includes background on the stakeholder network that was observed. A procedure for using the framework and framework overview canvas to make recommendations to the network champion is presented. A 'process canvas' was developed to guide the user in this procedure. These recommendations may guide the management of engagement activities in the network, improve engagement experiences and strengthen the functioning of the network. The case study offered a final opportunity for modifying the framework. The output of Chapter 7 is the final stakeholder engagement framework, its framework overview canvas and a process canvas.

Chapter 8: A tool for stakeholder engagement in IPs

The final framework, the framework overview canvas and the process canvas are the elements that make up the management tool for stakeholder engagement in IPs. Chapter 8 includes a summary of the framework development process. A procedure for using the tool in practice is proposed. The use of the tool may be relevant to independent consultants or practitioners of stakeholder networks. The management tool is particularly suited for applications within the South African health context and IPs addressing challenges which impact social health determinants.

Chapter 9: Conclusion and recommendations for future work

In the conclusion of the research, Chapter 9 provides a concise summary of the research approach. The project objectives and how these have been addressed in the research study are presented, with references to the relevant chapters in this document. A final reflection of the

research contribution is presented, from which stem recommendations for future research in this field.

1.11 Concluding remarks: Chapter 1

Interventions to empower South Africa's most marginalised population groups need to be holistic in their approach. Innovation platforms (IPs) draw together diverse stakeholders around a challenge to pool complementing expertise and resources [21], [23]. IPs have proven themselves as catalysts for innovation and change in the developing world. Indeed, there is an opportunity for IPs to form around many challenges troubling primary healthcare delivery in South Africa. IPs targeting social and economic empowerment of marginalised individuals and communities through appropriate participatory approaches may help to strengthen the current state of health determinants in the country. In this way, IPs may fill an important role in reducing the strain on an overburdened public healthcare sector.

However, the partnership structure of IPs brings the issue of stakeholder engagement to the fore; an issue that is even more complex due to the diversity of stakeholders, not to mention participation of base of the pyramid (BOP) stakeholders as co-creators of innovation and value. With the aim to inform the management of individual stakeholder engagement activities in the IP to ensure effective collaboration and value co-creation, a conceptual framework for stakeholder engagement in IPs aimed at the South African health context will be developed.

Chapter 1 introduces the reader to the research topic and develops the case for the research. The research questions, objectives, scope, limitations and ethical considerations are defined clearly in this chapter. Chapter 2 continues with a detailed description of the research design and methodology followed in the research.

Chapter 2: Research methodology

Chapter 2 guides the reader through the adopted research approach. The approach is qualitative in nature, built around a grounded theory-based methodology for conceptual framework development. Data collection uses a mixed-methods approach to develop the conceptual framework and evaluate the research. A progressive evaluation of the research is adopted to guide the process and produce trustworthy research.

Chapter outcomes	1. Describe the nature of qualitative research
	2. Introduce the grounded theory research design
	3. Introduce the conceptual framework analysis procedure
	4. Discuss several data collection methods used
	5. Describe the approach to data analysis
	6. Discuss the considerations for valid and reliable research
	7. Describe the partwise research approach

2.1 Quantitative and qualitative research approaches

Two distinct research approaches exist, namely, quantitative and qualitative research. These research approaches differ in at least three key areas; their epistemological orientation, their ontological orientation and their positioning of the role of theory in relation to research [53].

Regarding the connection between theory and research, quantitative research adopts a deductive approach which emphasises the empirical testing of theories [53]. Qualitative research adopts an inductive approach with emphasis on developing theory from data [53].

Epistemology questions what the conditions should be for acceptable knowledge in a discipline [54], [55]. Quantitative research adopts positivism as its epistemological orientation, considering it important for social sciences to adopt methods from the natural sciences [53], [56]. Here, knowledge is accepted only when it is derived from sensory experience interpreted by reason [56]. Qualitative research adopts an interpretivist epistemology which deals with the interpretation of the social world [57].

As mentioned, these research approaches also have an ontological distinction. Ontology is concerned with the nature of reality [52], [58]. Qualitative research adopts objectivism as an ontological orientation which views social reality as external, objective and beyond the reach of social actors [53], [58]. Qualitative research adopts a constructionist ontology which posits that social actors, through social interactions, continually produce social phenomena and their meanings [53]. Social reality is thus considered by this ontological orientation to change constantly, and is subjective in its interpretation by individuals [59].

These fundamental differences between quantitative and qualitative research approaches are summarised in Table 1 [53].

Table 1: Key differences between quantitative and qualitative research approaches

	Quantitative	Qualitative
Data collection and analysis	Emphasis on measurement/quantification; collection of numerical data	Emphasis on non-numerical data; collection of words, pictures and actions
Approach to relationship between theory and research	Deductive approach emphasising the testing of theories	Inductive approach emphasising the development of theories
Epistemological orientation	Adopt practices from natural sciences, particularly positivism	Interpretivism, emphasising how humans interpret their social reality
Ontological orientation	Objectivism: social reality is objective and external to our control	Constructionist: social reality constantly emerging and shifting

(Source: [53]. Adapted)

2.1.1 Focus on qualitative research

The focus of qualitative research is the inductive development of concepts and theories; that is, they are developed from the interpretation of the data that are collected [53]. Researchers treat theory as emergent from the analysis and collection of data, identifying prominent themes, ideas and patterns inherent to the data [53]. Qualitative researchers combine analytical and conceptual thinking so that "insights can emerge from an unconscious level and connections can be made at many different levels" [53].

In addition to developing theories, Silverman [60] argues that qualitative research methods have matured sufficiently to test theories. Theories which emerge during the research may need to be tested, requiring the collection of additional data [53]. This results in an iterative movement between data collection and analysis. This is a key feature of grounded theory, discussed in Section 2.2 [53].

When considering using a qualitative research approach, it is important to be aware of the shortcomings of the approach. Researchers need to be meticulous in their reporting of the study, since qualitative approaches can lack transparency about how the research was conducted [53], [61]. It is important to describe how the data was collected and analysed; for example, how interview participants were selected and how the researcher arrived at their conclusions. Researchers need to be careful not to overestimate the potential of research findings to inform other settings, as a limited research scope may lead to generalisation problems [61]. Researchers need to follow structured approaches as far as possible, not only to increase the replicability of the study, but also to limit subjectivity [61].

Of additional importance to the qualitative researcher is ensuring and protecting the validity of their findings [53], [61]. To do this, researchers often collect data using different methods and from a wide range of independent sources in a process known as triangulation [53], [61], [62]. Triangulation allows findings to be cross-checked, increasing confidence in the findings [53], [62]. Triangulation may also be employed as an approach to evaluate qualitative research [27].

This research used a qualitative approach to meet the research objectives. The remainder of the chapter introduces several research methods which were incorporated into the research design. The research design was shaped by the important considerations for qualitative research discussed in this section. What follows next is a description of grounded theory as a basis for the qualitative research design.

2.2   Grounded theory

Grounded theory (GT) is a widely accepted framework for use in qualitative research [53]. First published by Glaser and Strauss in 1967 [55], the divergent views of these two authors on this topic led them to further develop GT independently [53]. Because of the different approaches followed by Glaser and Strauss, a definitive account of the GT procedure is not possible. Despite the lack of a clear methodology, GT remains the most influential framework used in qualitative data analysis [52], [53]. This research follows Strauss's approach as his work is more prominent [53].

Research processes based on GT collect and analyse data in a systematic way to discover theory [52], [63], [64]. The resultant theory is thus based on the data that was analysed [64]. Importantly, GT is an iterative and recursive procedure [53] whereby data acquisition and data analysis occur in tandem; the analysis reveals additional data sources which are subsequently included and analysed [64]. An increase in insight with time may lead the researcher to return to data which has already been analysed to uncover information that may previously have gone unnoticed. The testing of emergent theories throughout the research process adds to the iterative feature of grounded theory [60]. Figure 3 visually describes the iterative and recursive nature of GT.
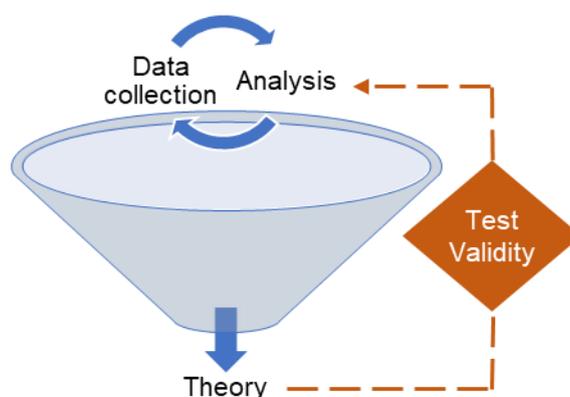
Figure 3: The iterative and recursive nature of grounded theory

A grounded theory-based approach to conceptual framework development as adopted by this research is discussed in the next section.

2.3   Conceptual framework analysis

A conceptual framework is the presentation of qualitative research findings in a manner which improves our understanding of real-world phenomena. It is a set of interconnected concepts that describe a phenomenon effectively, allowing for a comprehensive understanding of its occurrence, whether it be a social, cultural, political or environmental phenomenon, or a social behaviour phenomenon [52], [65]. Conceptual frameworks aim to provide only an improved understanding and do not offer explanations or predictions of an outcome [52].

Jabareen [52] proposed a process for conceptual framework development which he based on GT. Called conceptual framework analysis (CFA), his technique is designed to "generate, identify and trace a phenomenon's major concepts, which together constitute its theoretical framework." [52] This technique goes beyond the scope of traditional conceptual analysis techniques that employ a process of tallying the presence of a chosen concept in the data, commonly neglecting the meaning of the concept [52]. In CFA, each concept has its own set of attributes, characteristics, assumptions and limitations, and distinct perspectives [52]. Each concept also has a specific function within the conceptual framework [52]. CFA continues to further develop those concepts which appear to increase the understanding of the phenomenon under study.

CFA is well suited for qualitative data of a multidisciplinary nature. The literature selected for analysis must represent the phenomenon under study and the practices that relate to it in all relevant disciplines [52]. The various literature sources should describe the phenomenon in the context of their specific disciplines. They form the empirical data for the theorisation of concepts [52]. A systematic review of literature is proposed to identify data sources of various types and across all relevant disciplines (see Section 2.4).

The CFA procedure provides a systematic approach to implement the GT principles in a qualitative analysis of data. Jabareen's [52] procedure is adapted for use in the research and appears in Table 2.

Table 2: Conceptual framework analysis procedure

Phase	Description	Implementation
Phase 1: Mapping the selected data sources	Mapping the spectrum of selected multidisciplinary literature sources of different	Data sources are selected using a systematic literature review. Mapping of the selected literature is performed using the Atlas.ti[2] software

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[2] Atlas.ti is a powerful computer software program designed for the analysis of qualitative data [214].

Phase	Description	Implementation
	types. Includes an extensive review of the literature.	and a preselected set of codes relating to the type, discipline, year of publication, geographical focus, etc., of the literature sources. The results of mapping are displayed graphically for easy interpretation to ensure the validity of the selected data sources, and to establish the 'lie of the land' of the data.
Phase 2: Extensive reading and categorisation of data	Read through the selected data and categorise each text according to the specific discipline and a relative scale of importance and representative power within each discipline.	Documents are already coded according to specific disciplines (Phase 1). Extensive reading of each data source guides a decision regarding the relative importance of the text content (content richness). Gaps in the field are identified as opportunities for the research to contribute to these areas.
Phase 3: Identifying and naming concepts	Discover concepts by reading and rereading the selected data. This will result in a list of numerous competing and some contradictory concepts.	Intensive reading and rereading of data sources, including revisiting data sources already analysed as insight improves. Atlas.ti is invaluable in this phase. Concepts are coded individually as these emerge from the literature. The process of naming concepts must be planned properly; concepts must be easy to identify, and the process must refrain from grouping concepts prematurely.
Phase 4: Deconstructing and categorising the concepts	Identify the main attributes, characteristics, assumptions and role of each concept. Categorise the concepts according to their features.	Analyse each identified concept. Understand its context of emergence and its influence on the phenomenon to accurately deconstruct and categorise the concept. A table is populated to document the description and categorisation of each concept, as well as a reference to the data sources from which the concept originated.
Phase 5: Integrating concepts	Creating 'new' concepts by grouping together similar concepts, drastically reducing the number of concepts to a reasonable number.	From the description of the concepts there are some specific 'new ideas' that emerge, under which a range of identified concepts are grouped due to similarities between them. This grouping results in a new set of concepts which form the components of the final conceptual framework. Using codes and code groups for concept integration means that the development of each new concept can be traced back for accurate reporting and justification.
Phase 6: Synthesis, resynthesis and making it all make sense	Concepts are synthesised into a conceptual framework. The process is iterative, with stages of synthesis and resynthesis repeating until a theoretical framework emerges; one that makes sense.	The process of configuring the resulting concepts is iterative and very involved. The context and motivation of this research will have an influence on the final framework while still ensuring that the theory it displays remains relevant to other disciplines. The process of synthesising the concepts is guided by case studies and the insights of other researchers and practitioners.

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Phase	Description	Implementation
Phase 7: Validation	Validation seeks to evaluate the development of the framework and then test the conceptual framework to ensure that it makes sense to other researchers and practitioners. Testing ensures its practical usefulness.	Evaluation seeks to ensure the reliability and validity of the framework development process using a case study and interviews with practitioners. Exposure of the research is gained through conference presentations and article reviews which serve as continuous evaluation of the research as it progresses. The conceptual framework will be tested in a case study of an existing IP.
Phase 8: Rethinking the conceptual framework	The conceptual framework remains dynamic and may be revised as new insight and understanding is gained. The framework is multidisciplinary, and as such should make sense for those disciplines.	After testing, adjustments are made to the framework as new insights are gained from feedback. Phases 6, 7 and 8 may be followed recursively.

(Source: [52]. Adapted)

The conceptual framework is broad and would always benefit from continuous improvement as insight is gained. This is especially true during the framework's development but remains true even once it is finalised for implementation. To this end, the approach followed by this research did not make use of validation (Phase 7) as proposed by Jabareen [52]. Rather, the approach was to iteratively evaluate the research output at various stages. Other researchers use the term 'progressive evaluation' to describe a similar approach in conceptual framework development [27].

The systematic literature review was the primary data collection method used in this research. Analysis of the dataset publications identified themes, relationships and insights which formed the foundation of the research. The systematic literature approach followed by this research is discussed in the next section.

2.4 Systematic literature review

A method to identify and investigate relevant multidisciplinary literature for use as data sources in the CFA was required. Following Jabareen's [52] suggestion, a systematic literature review was conducted to follow the first four phases of the CFA procedure.

Systematic literature reviews make use of a rigorous and repeatable method of evaluating research to present a fair evaluation of it [66]. The systematic literature review is very attractive for use with CFA since it includes all available documents of different types and across relevant disciplines related to the phenomenon under study [66]–[68].

The systematic literature review procedure used in the research is summarised in seven steps adapted from Petticrew and Roberts [66]. The steps are given in Table 3.

Table 3: Systematic literature review procedure

Steps	Description and implementation
Step 1: Develop a search protocol	The protocol is the result of the careful planning of the review process. It includes the research question, search methods, study types to be located, how these studies are analysed, and how their content is synthesised. The inclusion and exclusion criteria are defined. The protocol ensures that the search procedure is repeatable and objective.
Step 2: Review the search protocol	The protocol is reviewed by the researcher's Supervisor to ensure that it will produce valid search results.
Step 3: Perform literature search	A literature search of appropriate electronic databases is done. The search results are well documented and stored for further analysis.
Step 4: Screen references	The documents identified by the literature search undergo initial screening to identify the relevant documents. The number of documents which are excluded at this stage and the reason for exclusion are documented.
Step 5: Further screening of references	The abstracts of the remaining documents are read intensively. In some cases, the entire document is read extensively to determine whether the document is indeed relevant to the research. Each document is tested against the inclusion/exclusion criteria. The number of documents which are excluded at this stage is documented.
Step 6: Data extraction	The remaining documents are included as the data sources for CFA; the procedure of extracting concepts from the documents begins in this step.
Step 7: Critical appraisal and considering bias	The methodological soundness of the selected studies is established. The presence of any bias is established. These two aspects influence the validity of the arguments used in and observations made by the studies.

(Source: [66]. Adapted)

Keeping in line with the intended scope of the research, the main purpose of the systematic literature review was to identify literature pertaining to IPs underpinned by an I4ID philosophy. The review intended to identify relevant publications from all available disciplines and geographical contexts. The dataset was analysed to identify key stakeholder engagement practices present in these IPs. The focus areas are illustrated in Figure 4.
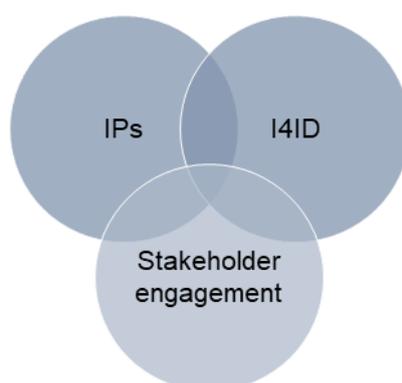
Figure 4: Intersection of focus areas for systematic literature review

The application and outcomes of the systematic literature review procedure are discussed in-depth in Chapter 4.

The semi-structured interview was another method for collecting data used in this research. It is introduced in the next section.

2.5   Semi-structured interview

Two types of interviews are common in qualitative research, namely, unstructured and semi-structured interviews [53]. Qualitative interviews offer much more flexibility to both interviewer and interviewee than the structured interviews common in quantitative research. Semi-structured interviews use discussion guidelines, usually in the form of questions, to prompt the interviewee into discussions around topics which are already well specified. The interviewee is free to choose how they respond to the interviewer's prompts. In semi-structured interviews, the interviewer may deviate from the discussion guidelines to follow up on the interviewee's responses [53], [69].

The open-ended questions of semi-structured interviews allow interviewees the opportunity to describe how they perceive and make sense of social phenomena [70], making this interview approach well suited to GT research [53]. The researcher hopes to understand what the interviewee deems important when explaining and understanding these social phenomena [53].

What follows is a list of advantages of using semi-structured interviews in qualitative research [53], [71]:

1. Though not fully structured, specific focus areas can still be addressed;
2. Some structure allows for consistency in the interviewing style where multiple interviews will take place;
3. Participants are actively involved in the research process, thereby empowering them;
4. Interviewee and interviewer can interact freely;
5. Clarification of interviewee's responses means all relevant data may be captured;
6. Increased opportunity for description and discovery of social phenomena;
7. Interviewee's thoughts and experiences are expressed in their own words;

Many procedures for conducting qualitative interviews exist [72]. Creswell's [72] approach focuses on the data collection in an interview. Analysing the data collected in a qualitative interview is not included in this discussion but is dealt with in Section 2.7. The procedure for qualitative interviews may be described by seven stages as in Table 4 [72].

Table 4: Qualitative interview procedure

Stage	Description and implementation
Decide on the purpose of the interview	Choose which research questions the interview will address. These questions should focus on understanding the central phenomenon under investigation.
Identify appropriate participants	Identify individuals who can best answer the questions above.
Decide on the interview type	Choose between telephone interview, Skype, or face-to-face interview.
Design an interview protocol/guideline	Questions and discussion points are developed from the overarching research questions. Sub-questions are useful to probe interviewees for more information or to clarify their response. Careful phrasing of the questions ensures that the interviewee understands what is being asked and that the desired information will be given to the interviewer.
Obtain consent from participant	Obtain consent from the interview participants before starting the interview. Ensure the interviewee is aware of any ethical implications related to their participation.
Use adequate recording procedures	Record the interview for playback and analysis at a later stage. Also consider making notes during the interview.
Use good interview procedures	Interviewer is engaged and looks interested in the interviewee's responses. Interviewer should listen more than speak. Thank interviewee for their time.

(Source: [72]. Adapted)

Multiple interviews were conducted with subject matter experts in industry at various stages of the research to both inform the development of the conceptual framework and evaluate research outcomes. The purpose and specific approach used for these interviews is detailed in Section 6.3.

Important to the evaluation of various research outcomes was the case study. A discussion around case studies in qualitative research and their relevance to this research follows in the next section.

2.6 Case study

Case studies are most common as a qualitative research design [64], [72]. In this research, however, case studies were used to complement the GT approach to developing the conceptual framework. Case study research makes use of a variety of data sources to explore a social phenomenon within its context of existence [73]. It is commonly based on approaches formalised by Yin [74] or by Stake [75]. Their approaches are different, but both aim to achieve a detailed exploration of the topic of interest and reveal the essence of the phenomenon [73].

Yin [74] posits that case studies are useful when investigating the 'how' and 'what' of social phenomena. There are different case study types which are appropriate for different research

purposes [73], including explanatory, exploratory, descriptive [74], intrinsic, instrumental and collective [75].

This research used case studies in the development of the conceptual framework to evaluate various research outcomes, including the confirmability of themes identified in literature, and to investigate the usefulness and reliability of the conceptual framework. To this end, instrumental case studies were most suitable [75]. An instrumental case study is used when its purpose goes beyond understanding a particular situation and is intended to refine a theory [73]. In this sense, the case is not the main focus but plays a supportive role in facilitating an improved understanding of something else [75].

Two case studies were used in this research. The first was a theoretical case study for the preliminary evaluation of an inventory framework (see Chapter 5). The second was a study of the application of the enhanced stakeholder engagement framework on an existing IP (see Chapter 7).

2.7 Data analysis in qualitative research

Several data collection methods have been described above, but these would be useless without the appropriate approach to analyse the collected data. Creswell [69] proposed a general approach to data analysis in qualitative research. His approach is described by six steps as shown in Figure 5. Although represented linearly, Creswell [69] suggests that these steps are interrelated and researchers need not see them as a prescribed sequence.
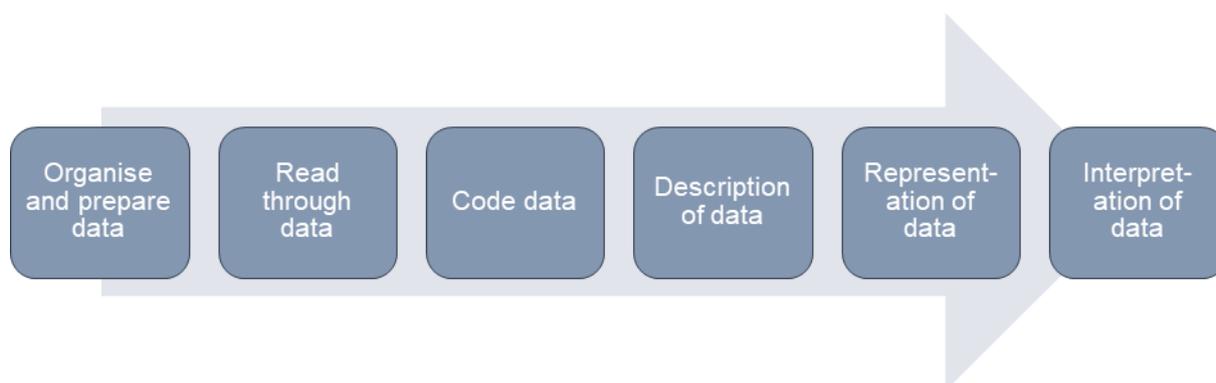
Figure 5: Six-step process for data analysis in qualitative research [69]

Organising and preparing the data for analysis ensures that all data is in a usable format; interview recordings need to be transcribed and research notes documented. It may be helpful at this stage to arrange the data according to the type and source of the data. First reading through the data in step 2 gives the researcher an idea of what insights may lie within the data and what the overall contribution of the data will be. Hereafter, the process of coding begins as the data is analysed in detail [69].

In step 4, meaning is assigned to the information that has been coded. Here, the description of the data is summarised by several themes or categories that emerge. These emergent themes may be further investigated for connections between them [69].

Step 5 deals with how the descriptions and themes will be presented for interpretation. Researchers may use a narrative approach, such as a detailed discussion of several themes. The use of tables and figures may complement the discussion. Finally, in interpreting the meaning of the data, the researcher attempts to answer the question, "What were the lessons learnt?" [76] At this stage it is appropriate for the researcher to propose new questions for future research [69].

The practice of coding in qualitative research is discussed below as it is a critical step in the data analysis process. Thereafter, the practice and purpose of quantitative analysis of qualitative data are discussed briefly.

2.7.1 Coding

Miles and colleagues [77] describe coding as a mechanism for condensing vast amounts of data in the approaches to qualitative data analysis by "selecting, focusing, simplifying, abstracting, and/or transforming the data". Coding is also a mechanism for considering the meaning of the data [77]. Thus, coding is an important part of data analysis in qualitative research and should not in itself be considered as an analysis method [53].

The coding process forms an important part of GT by labelling components of the data that seem significant [53]. It includes organising the data by allocating different code labels to specific categories. Coding types may include context codes, the different perspectives applied in research, process codes, activity codes, strategy codes and relationship codes [78]. The coding process continues with the labelling and organising of emergent categories and themes within the data. Additional analysis layers develop as the connections between themes become more complex, and the coding process is iteratively applied at each layer [27], [78]. These themes and underlying concepts become the bricks with which the eventual theory is built [63].

2.7.2 Quantitative content analysis

Quantitative content analysis is a useful means to quantify the presence of specific occurrences in qualitative data [53]. A more structured coding process than that found in the GT approach is applied using predefined codes, the outcome of which are counts of the "raw material" [53] according to these predefined categories [79]. Quantitative data analysis was used in this research to obtain the descriptive statistics of the final dataset of publications in the systematic literature review (see Section 4.5) and for the evaluation of the preliminary framework (see Section 6.3.5.3).

The approach used to ensure and protect the validity of the research is outlined in the next section.

2.8 Validity and reliability in qualitative research

Earlier in this chapter, attention was drawn to the importance of validity and reliability considerations for qualitative research (see Section 2.1.1). Validity refers to the degree of accuracy with which research findings reflect what was observed [69], [78], [80]. Reliability refers to the degree to which research may be replicable, and to the consistency of observations across different researchers [69], [78], [80]. Guba [81] posits that the concept of reliability is essential as a prerequisite for valid research.

Emergent trends in qualitative research of post hoc evaluation of research have been challenged by Morse and colleagues [82]. They posit that post hoc evaluation undermines the importance of including strategies for rigour during the research process to proactively guide research [82]. The adoption of a progressive evaluation approach by this research study looks to verify the research output at several stages of the research process (see [83], [84]). This strategy serves as a self-correcting mechanism to uphold the quality of the research. It mitigates the risk of missing threats to validity and reliability before it is too late, which is Morse and colleagues' [82] primary concern.

2.8.1 Evaluation criteria for qualitative research

Validity and reliability have been paralleled with the concept of trustworthiness [81], [82], [85]. Guba [81] and Guba and Lincoln [85] identified four aspects related to trustworthiness. These are credibility, transferability, dependability and confirmability [81]. To verify the trustworthiness of the research, these four aspects are appropriate as criteria to be evaluated at several stages of the research process.

Table 5 summarises the descriptions of the four aspects of trustworthiness and briefly discusses how this research addresses each.

Table 5: Aspects of trustworthiness and how the research addresses each

Aspect	Description	Treatment
Credibility	Credibility is about establishing the "truth value" [81] of the research, verifying plausibility of interpretations and findings [81].	The use of triangulation and persistent observations promotes credibility of the research procedure [81]. Interviews and case studies are used to corroborate interpretations and findings from the documentary analysis of primary publications.
Transferability	Transferability deals with the generalisability of the research output. It does not infer an appropriateness for any context, rather there is a certain similarity (fittingness) required between contexts [81].	Translating findings into the paradigm of a conceptual framework and subsequently a management tool requires a level of generalisation of the output. The insights are far enough removed from the immediate contexts from which they emerged but retain their core value contribution. A case study application of

Aspect	Description	Treatment
		the framework as a tool verifies its benefit within its intended context of use.
Dependability	Within qualitative research, the invariance associated with consistency is substituted for "trackable variance" [81]. That is, variance that can be explained by, for example, errors, reality shifts and improved insights. From this emerges the concept of dependability; consistency combined with explainable changes [81].	A structured methodology is followed throughout the research process. Known approaches, including the systematic literature review and conceptual framework analysis procedure, are used and combined with a progressive evaluation approach.
Confirmability	Confirmability assumes that the researcher's biases are mitigated to produce findings that are "investigator free" [81]. Confirmability promotes objective outputs [81].	Triangulation is again especially useful for confirmability of research. Through semi-structured interviews, the opinions of subject matter experts on the findings serve as additional scrutiny of investigator bias.

2.8.2 Triangulation as an approach for valid and reliable research

Triangulation is one approach in qualitative research to ensure the validity and reliability of the research output [53], [61], [62]. Multiple methods for data collection are used to cross-check findings from qualitative research and increase confidence in the quality and rigour of the research [53], [61], [62], [81]. By combining multiple methods, such as surveys, interviews, focus groups, participant observation and direct observation, bias can be minimised, and the truthfulness of propositions strengthened [53], [78], [81].

Adopting the triangulation approach and implementing it in a progressive manner, this research seeks to ensure and protect the validity and reliability of the research findings using a combination of a documentary analysis of both peer-reviewed and grey literature, semi-structured interviews and case studies. Validity and reliability could be evaluated and improved as these different research methods were used to verify results. The implementation of triangulation in this research is illustrated in Figure 6.
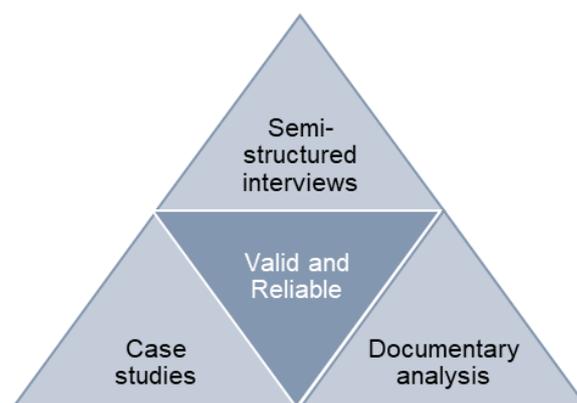
Figure 6: Triangulation approach to ensure valid and reliable research

2.8.3 Validity and reliability of the tool

When developing a tool based on a conceptual framework, a myriad of researchers specify the importance of validity and reliability of the tool for use in research and practice [86]–[90]. Validity and reliability cannot simply be transferred to a tool from a valid and reliable conceptual framework; the tool will need to undergo its own process of evaluation, which may be in the form of pilots and case studies, to scrutinise and refine various components of the tool, including its content, structure and performance [87], [89].

This chapter has thus far outlined the qualitative nature of the research and introduced the GT design adopted to develop the conceptual framework. Various research methods for the collection of qualitative data have already been introduced, including the systematic literature review and semi-structured interview. Case study research has also been discussed as an additional dimension used to inform the CFA process. A general approach to data analysis has been discussed. Finally, a triangulation approach to ensure and protect the validity of the research was explained. In the next section, the research design explains how these methodologies were combined in a four-part process to address the research objectives and develop the conceptual framework.

2.9   Research design

This research is of a qualitative nature. The GT research design was chosen to develop the conceptual framework from theory that is founded entirely on insights from the analysis of collected data. The research approach sought to add depth and richness to the research by using various data collection methods. The research approach combines the insights from various methods to progressively evaluate the research output at various stages. The different research methods used have already been introduced. These were consolidated into a partwise approach to the research. Figure 7 illustrates the research approach in four consecutive parts. Included in the illustration are the different chapters of this document that report on the research outcomes for each part. The illustration also shows where the different phases of the CFA procedure fit into the research approach.
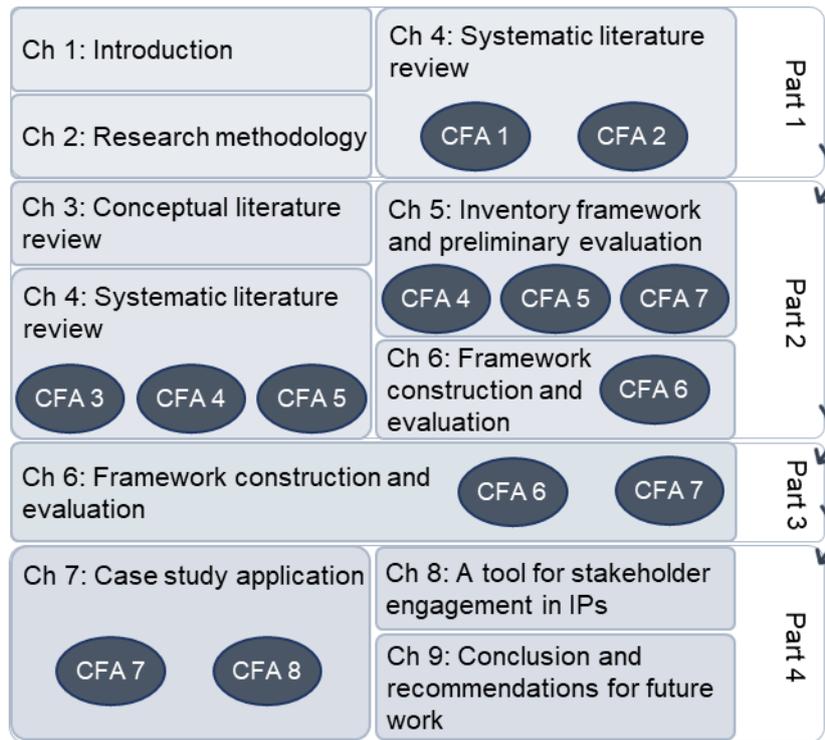
Figure 7: Partwise research approach with chapters and relevant CFA phases

The research approach is divided into four parts; Part 1 comprises establishing the research, Part 2 covers the development of the preliminary framework, Part 3 covers the evaluation of the preliminary framework and the development of an enhanced framework, and Part 4 encompasses the industry use case of the framework, including finalising the framework and the development of a management tool. The research did not follow Jabareen's [52] CFA procedure in strict sequence. The phases were approached in a constantly comparative way to refine and organise the data and concepts. To assist the reader in following the discussion of the partwise research approach, Figure 8 illustrates the phases of the CFA procedure.
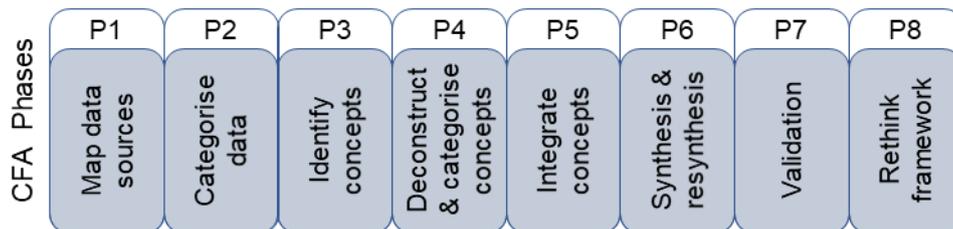
Figure 8: Conceptual framework analysis process [52]

2.9.1 Part 1: Establish research

Part 1 established the research in terms of the research problem and objectives which were developed from a review of the primary healthcare challenge landscape in the South African context. Following the definition of clear aims and deciding on the scope of the research, the researcher set out to compile a research design which would successfully and innovatively meet the research objectives. A GT research design was adopted, and the research would be informed

by systematic and conceptual literature reviews, interviews with subject matter experts and case studies. Part 1 concluded with the systematic literature review to compile a dataset for analysis in Part 2. The systematic review identified publications which address both IPs and I4ID. The selected publications were mapped, their descriptive statistics reported, and several research gaps identified. By the conclusion of Part 1, the first and second phases of the CFA procedure had been addressed.

Table 6 outlines the sequence of events for Part 1. The table additionally maps which steps in the sequence correspond to specific CFA phases and continues to remind the reader where this document reports on various components of Part 1.

Table 6: Sequence for Part 1

Sequence for Part 1	CFA phase	Section where reported
1. Conduct background literature review 2. Define research problem 3. Develop research aims 4. Determine research scope and limitations		Chapter 1
5. Choose appropriate research design 6. Develop research approach		Chapter 2
7. Conduct systematic literature review to collect publications for data extraction 8. Describe characteristics of dataset 9. Identify gaps for research to address	CFA 1,2 CFA 1,2	Chapter 4

Table 7 describes how Part 1 addressed the first of the research objectives.

Table 7: Research objectives addressed in Part 1

Research objective	How the objective was addressed	Section where reported
RO1	Systematic literature review used to identify suitable dataset of publications for CFA	Chapter 4

2.9.2 Part 2: Formulate framework

Part 2 of the research began with a conceptual review to investigate the development and suitability of the innovation ecosystem perspective to describe the co-creation of innovation in innovation networks. The conceptual review continued to investigate the development of stakeholder engagement and participation as a field of study. Various important approaches to and risks associated with participatory processes in development contexts were highlighted by the review.

Analysing the dataset of publications was a time-consuming task completed during Part 2 of the research. The analysis included identifying relevant stakeholder engagement practices,

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deconstructing and categorising these and integrating them into various engagement themes (CFA phases 3, 4 and 5).

Following a progressive evaluation approach, these newly integrated engagement themes were used to describe the engagement practices which emerged in a case study on the Safe Water and AIDS Project (SWAP). A semi-structured interview served to provide additional data to evaluate the suitability of the engagement themes and to better understand their consequence for stakeholder engagement in IPs. The engagement themes and the insight were synthesised into the preliminary stakeholder engagement and participation framework.

Table 8 below outlines the sequence in Part 2. As before, the CFA phases are mapped against specific steps and the relevant document chapters are given.

Table 8: Sequence for Part 2

Sequence for Part 2	CFA phase	Section where reported
1. Conduct conceptual literature review: • Review development and use of innovation ecosystem perspective • Review development of stakeholder engagement and participation in development contexts • Review existing conceptual tool typologies and theoretical foundations for their development		Chapter 3
2. Review dataset publications for engagement themes and develop insights	CFA 3, 4, 5	Chapter 4
3. Assess confirmability of insights using a review of case literature and by means of an interview 4. Develop new insights from case study and interview	CFA 7 CFA 4, 5	Chapter 5
5. Synthesise findings into a preliminary framework	CFA 6	Chapter 6

Part 2 made a substantial contribution towards achieving the research objectives, with the first five objectives being fully addressed. Table 9 describes how each objective was addressed in Part 2 of the research approach.

Table 9: Research objectives addressed in Part 2

Research objective	How the objective was addressed	Section where reported
RO1	Dataset publication analysed to identify engagement practices in the literature	Chapter 4
RO2	Semi-structured interview and theoretical case study improved understanding of themes and increased insights	Chapter 5
RO3	Conceptual review of innovation ecosystem literature	Chapter 3
RO4	Conceptual review of stakeholder engagement and participation literature	Chapter 3
RO5	Development of the preliminary stakeholder engagement and participation framework	Chapter 6

2.9.3 Part 3: Evaluate framework

The progressive evaluation approach continued in Part 3. Semi-structured interviews were conducted with several subject matter experts. Interviewees were probed into discussions around their personal experience with stakeholder engagement. These interviews were later transcribed and analysed for additional insights which could evaluate the preliminary framework. Any gaps identified in the framework's content were addressed and additional modifications made to the framework, the result of which was the enhanced framework.

The interviews presented an opportunity to gather additional data which was not directly relevant for evaluation purposes but would contribute to the depth and richness of the research. To this end, the interviews were used to establish which stakeholders have a prominent presence in the South African development context. The interviewees were asked to describe the need for the management of stakeholder relationships and the suitability of a conceptual framework for stakeholder engagement and participation.

Table 10 outlines the sequential steps of Part 3, including the relevant CFA phases. Chapter 6 fully outlines Part 3.

Table 10: Sequence for Part 3

Sequence for Part 3	CFA phase	Section where reported
1. Conduct interviews with subject matter experts to inform the framework evaluation	CFA 7	Chapter 6
2. Identify additions and modifications to the framework from the evaluation	CFA 7	
3. Synthesise additions and modifications to develop an enhanced framework	CFA 6	

Table 11 describes how the sixth research objective was successfully addressed at the conclusion of Part 3.

Table 11: Research objectives addressed in Part 3

Research objective	How the objective was addressed	Section where reported
RO6	Additional data is collected from semi-structured interviews and analysed to evaluate and enhance the preliminary framework	Chapter 6

2.9.4 Part 4: Test framework

Part 4 of the research approach uses a case study and the application of the conceptual framework to verify the suitability and relevance of the research output as a management tool for stakeholder engagements in IPs. The case study serves as the final round of evaluation in the progressive evaluation approach. Additional elements were developed to complement the framework and

include a framework overview canvas and a process canvas. These elements are consolidated into the final management tool for stakeholder engagement in IPs.

Table 13 outlines the sequential steps of Part 4, including the relevant CFA phases. The relevant document chapters are also given in the table.

Table 12: Sequence for Part 4

Sequence for Part 4	CFA phase	Section where reported
1. Conduct a case study on the use of the framework in practice	CFA 7	Chapter 7
2. Identify adjustments to the framework from use case feedback	CFA 7	
3. Synthesise adjustments to develop the final framework	CFA 8	
4. Feedback from the use case is synthesised to develop a stakeholder engagement management tool		Chapter 8

The remaining research objectives were successfully addressed at the conclusion of Part 4 as described in Table 13.

Table 13: Research objectives addressed in Part 4

Research objective	How the objective was addressed	Section where reported
RO7 RO8	Framework is applied in practice and its application is investigated Feedback from the analysis of the use case is synthesised to develop a management tool	Chapter 7 Chapter 8

2.10 Concluding remarks: Chapter 2

The research approach was developed around the conceptual framework analysis (CFA) procedure, a grounded theory-based method to build conceptual frameworks [52]. This is complemented by a progressive evaluation approach relying on triangulation for data collection [78]. A systematic literature review forms the theoretical foundation for the framework, and the framework may evolve as new insight is gained from semi-structured interviews and case studies.

The document now transitions to reporting on the outcomes of the research approach. In Chapter 3, the outcomes of the conceptual literature reviews from Part 2 of the research approach are reported.

Chapter 3: Conceptual literature review

The review of additional concepts important to different aspects of the research is covered in Chapter 3. A review of the emergence and development of the innovation ecosystem perspective was conducted as it is to be the perspective adopted by the research. A review of stakeholder engagement and participation literature enables a richer investigation of this phenomenon within innovation platforms (IPs). The final research objective of developing a conceptual tool from the framework is guided by a review of several conceptual tools available in the literature.

Chapter outcomes	
	1. Describe the development of the innovation ecosystem perspective
	2. Describe the characteristics of the innovation ecosystem
	3. Discuss the benefits and criticisms of the ecosystem perspective
	4. Discuss the development of stakeholder engagement and participation
	5. Define stakeholder engagement terminologies
	6. Discuss the benefits and criticisms of participatory approaches
	7. Discuss a framework to enable stakeholder participation
	8. Identify different types of conceptual tools
	9. Discuss some approaches to conceptual tool development

3.1   Innovation ecosystem perspective

The ecosystem perspective has emerged as a useful lens to view the interdependencies between organisations [91], [92]. It further provides a framework for thinking about joint creation (co-creation) and co-evolution of value [91], [92]. The ecosystem perspective may be well suited to aiding our understanding of how IPs function and how IPs can be managed. However, the ecosystem perspective is not without its criticisms [31]; many researchers and field experts have applied the perspective independently to suit their own needs, resulting in the development of a construct which is often regarded as inconsistent and even contradictory [93].

Drawing on in-depth reviews of the ecosystem literature, the development of the ecosystem construct in the management of business, technology and innovation is reviewed, highlighting the emergence of innovation ecosystems. Characteristics of the ecosystem perspective are described, along with criticisms of the construct and cases for its use. Thereafter, a brief review of the use of the ecosystem perspective in IP literature guides its application in this research to prevent further inconsistencies in applying the lens.

3.1.1 Development of several streams of the ecosystem perspective

In their systematic literature review of the ecosystem construct, Gomes and colleagues [32] describe the innovation ecosystem perspective as having developed from the business ecosystem perspective. Earlier publications did not distinguish between the two when applying the ecosystem perspective, yet they argue that the perspective has developed along two streams; that of value capture (business ecosystems) and that of value creation (innovation ecosystems) [32].

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At the time Gomes and colleagues [32] published their findings, Tsujimoto and colleagues [94] also published a review of the ecosystem concept in the field of technology management and innovation [32], [94]. These authors identify four streams along which the concept developed; industrial ecology, business ecosystems, platform management and multi-actor networks [94]. Industrial ecology considers an integrated model of industrial activity, where the waste produced by one manufacturing activity may be taken in by another to reduce the impact of industry on the environment [95]. Industrial ecology researchers have made a tangible contribution to realising sustainable industrial systems, but it developed independently from other ecosystem concepts [94].

In 1993, Moore [96] published an article which was to set the stage for the development of the business ecosystem construct. Studying several large corporations, including Apple, IBM, Walmart and Ford, Moore [96] noticed they had been the leaders of different communities of organisations who were collectively responsible for bringing innovations to market. Moore [96] argues that parallels can be drawn between these business communities and natural ecosystems. By applying natural ecosystems to business strategy as an extended metaphor, Moore [96] suggests that "a company be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, companies coevolve *[sic]* capabilities around a new innovation; they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations".

Moore [96] suggests that businesses are co-dependent, meaning the success of any one business is strongly related to the success of the business ecosystem in which it resides. We begin to see the importance of highlighting interdependencies between stakeholders for improved management. Similar to Gomes and colleagues [32], Tsujimoto and colleagues [94] found value capture and value creation to be fundamental variables in the business ecosystem perspective. Within business ecosystems, Tsujimoto and colleagues [94] identify platform management as a perspective often emphasised by researchers [97].

Gomes and colleagues [32] identified the emergence of the innovation ecosystem from literature when researchers started to consider the role of value creation and value capture separately [32]. Adner [98] and later Adner and Kapoor [91] employed the term innovation ecosystem instead of business ecosystem, with the focus on value creation [32]. In 2006 Adner [98] applied the innovation ecosystem perspective to the presence of various firms which collaborate, with one of these firms being the ecosystem leader. The ecosystem leader encourages the other firms of the ecosystem to develop innovations which complement the ecosystem leader's innovation [98]. Adner [98] uses this innovation ecosystem perspective to develop a framework for managing ecosystem risk, where managing the risks of the complementors affects the success of the primary innovation.

In 2010 Adner and Kapoor [91] went on to apply the perspective in selecting a focal firm within the ecosystem and considered the innovation challenges faced by the focal firm as well as challenges faced by the complementors upstream and downstream of the focal firm [91], [98]. They posit that the location of the challenges in the ecosystem relative to the focal firm influences their impact on the value created by the focal firm's innovation [91].

Several definitions of the ecosystem concept, including those that distinguish between business ecosystems for value capture and innovation ecosystems for value creation, focus on the networks and relationships of private companies [94]. Yet ecosystems may include individuals and organisations outside of company pipelines, communities, government and policymakers and educational institutions as stakeholders [94], [99]. Tsujimoto and colleagues [94] call this the multi-actor network perspective, where the focus is on networks of actors with diverse attributes [94].

The applications of the ecosystem perspective suggest that it presents different opportunities to understanding the interdependencies between stakeholders in a network. It allows for the evolution of the interdependencies to be tracked over time. The effects that challenges and risks faced by one stakeholder have on the other stakeholders can be understood. When considering innovation management, the innovation ecosystem perspective allows a holistic visualisation of the activities associated with innovation. This includes how stakeholders coordinate in exchange networks that may have either cooperative or competing relationships, or both simultaneously [91].

3.1.2 Characteristics of the innovation ecosystem perspective

3.1.2.1 Definition of an innovation ecosystem

Several definitions for innovation ecosystems have been adopted by different researchers [32]. A common definition is that of Adner [98]; "the collaborative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution." Autio and Thomas [92] combined this and others' definitions to define an innovation ecosystem as "a network of interconnected organizations, organized around a focal firm or a platform, and incorporating both production and use side participants, and focusing on the development of new value through innovation." These definitions still lay their emphasis on private companies only.

Considering a broader spectrum of stakeholders, Carayannis and Campbell [43] define an innovation ecosystem as the space "where people, culture and technology, … meet and interact to catalyse creativity, trigger invention and accelerate innovation across scientific and technological disciplines, public and private sectors … and in a top-down, policy-driven as well as bottom-up, entrepreneurship-empowered fashion." This definition recognises that stakeholders of the innovation process include government, NGOs, universities and industry [43]. This definition lends itself to including stakeholders located at the BOP who serve as beneficiaries and/or contributors of inclusive innovation initiatives.

Many researchers describe an ecosystem around a node [100]. The definition by Autio and Thomas [92] especially relies on this. These nodes may be a focal firm selected for analysis (where the investigator selects which firm in the ecosystem is the focal firm) [91], [99], a central-hub firm (such as the ecosystem leader) [96], [98], [101], [102], or a platform (including an IP) [24], [103]–[105].

Despite the many different definitions available for the concept, all are concerned with a "self-organised or managerially designed multi-layer social network [consisting] of actors that have different attributes, decision principles, and beliefs." [94] Researchers would do well to apply this perspective with caution and understanding so as not to contribute to the confusion created by past use of the ecosystem concept. Researchers may find current emergent trends within innovation ecosystems research to be a suitable guide for their work [32], [94].

3.1.2.2   Distinctive characteristics of the innovation ecosystem

The innovation ecosystem perspective is distinct from other innovation management constructs as follows:

1. The innovation ecosystem perspective provides a holistic view of actors and activities [92];
2. This non-linear perspective includes both horizontal and vertical relationships between actors, distinguishing it from the commonly applied value chain and supply chain constructs [92];
3. The ecosystem perspective includes value creation, value capture and use [92]. This has led to the emergence of different ecosystem typologies, of which the innovation ecosystem focuses on value creation [92]. This creates an opportunity to investigate value creation and value capture independently [32].
4. The ecosystem perspective allows for the tracking of the evolution of the interconnectedness of stakeholders, and the investigation of new network configurations, rather than only optimising current configurations [92].

In addition to point 2, the ecosystem construct expands the idea of a linear value chain to a system including any stakeholders which contribute to or are influenced by the innovation in any way [92]. The advantages offered by these distinguishing characteristics are discussed in Section 3.1.4.

3.1.2.3   Defining the innovation ecosystem boundary

The ecosystem boundary separates the actors who reside in the ecosystem from those who are outside of it. The actors who reside within the ecosystem boundary are thus stakeholders, and it is necessary to identify which actors are truly stakeholders in order to correctly define the ecosystem boundary. This can be linked to the process of stakeholder identification in IPs where it is necessary to identify actors who have a tangible interest in the matter at hand [106]. Because

of the variety of different ecosystem actors (see [92]), it is difficult to define the boundaries of an ecosystem [92].

The ecosystem boundary defines the community of actors and the networks of exchange that will be analysed. What's more, this community of actors is likely to evolve with the emergence of new actors in the ecosystem and a restructuring of the exchange networks over time [91], [92].

Adner and Kapoor [91] defined the ecosystem boundary for analysis of an innovation ecosystem as actors who are a single network link away from the focal firm. This procedure is systematic and allows for the boundary to be expanded with relative ease by including actors located at incrementally more network links away from the focal firm [91], [92].

Defining an ecosystem boundary is often not that clear. Iansiti and Levien [102] argued that ecosystem boundaries are specific to the focal firm. Stakeholders from within an existing "ecosystem community" [92] are identified around the focal firm, defining the ecosystem boundary [92], [102].

Despite Adner and Kapoor [91] and Iansiti and Levien [102] defining their ecosystem boundaries around a focal firm, the latter do not propose a systematic method to defining the boundary. As Iansiti and Levien [102] see it, stakeholders within the ecosystem may be located at different positions relative to the focal firm based on the level of dependency of the focal firm on the stakeholder.

Other researchers do not rely on a focal firm, or any other node, for defining the ecosystem boundary. Tsujimoto and colleagues [94] accept that the boundary of the ecosystem is set via the overall product or service system, thus including all actors in the system.

Autio and Thomas [92] recognise that different boundary definitions may suit different purposes and perspectives. Relationships between ecosystem actors are marked by interdependencies and these actors also co-evolve [92], [96], [101]. Ultimately, the members of an ecosystem share in the fate of the whole system, irrespective of their individual strength [102]. Autio and Thomas [92] posit that a given actor can be regarded as residing within or outside the ecosystem boundary according to the aforementioned characteristics.

3.1.3 Criticisms of the innovation ecosystem perspective

Past use of the ecosystem concept without clear definitions of terminology and insufficient theoretical backing has led to inconsistencies in its development [94], [107]. This has given rise to critics of the perspective. Oh and colleagues [31] performed a critical examination of the use of innovation ecosystems in academic and trade literature. They acknowledge that the perspective has captured the imagination of policymakers and has added valuable insight to discussions around economic development and innovation management, but they posit that it is "a faulty

analogy to natural ecosystems" [31]. Faulty because: (1) the presence of intention and teleology in innovation ecosystems is not true of natural ecosystems; and (2) because of the importance of governance in innovation ecosystems [31]. They question the need for adding the "eco" prefix to the treatment of existing systems of innovation concepts as it seems to add very little meaning to analysis [31].

Section 3.1.2.1 hints at the problem researchers face of defining an ecosystem. The question has been posed whether an ecosystem is defined by its economic activities, by its stakeholders or by its boundaries [107], and the answer is not yet clear. The ecosystem perspective is recognised as a framework to guide thinking around innovation and economic development, but it has yet to lead to new methods and metrics to better manage innovation [31]. The parallel drawn with natural ecosystems is intriguing and has potential, but it remains only a suggestion, or a metaphor, until rules which guide its application are developed [31]. Others have warned against the overstretched use of the ecosystem metaphor, leaving important issues of ecosystem governance and boundaries definitions unaddressed [108].

However, provided the innovation ecosystem perspective is used with clarity, is distinct from other ecosystem perspectives, and that it is not used synonymously with existing innovation constructs, the perspective has the potential to add real value to innovation management perspectives [31], [32].

3.1.4 Motivations for using the innovation ecosystem perspective

Despite criticisms and the challenge of consolidating the fragmented use of the ecosystem perspective, its use by researchers is likely to continue [31], [32], [92]. Autio and Thomas [92] explain the reason for this: "… the attractiveness of this rather loosely defined and versatile metaphor rests on its ability to evoke and highlight interdependencies between organizations and to provide a fresh way to think about specialization, co-evolution, and co-creation of value."

Despite their criticisms, Oh and colleagues [31] acknowledge that this perspective encourages helpful systems thinking, offering more systemic ideas than those found in the National Innovation Systems (NIS) literature. The NIS has been criticised for being static in its analyses, whereas the ecosystem perspective allows the evolving nature of systems of innovation in relation to time and other ecosystems, to emerge [100]. And unlike the NIS with its established boundaries, an ecosystem boundary may be defined via the overall product or service system to capture a broader range of actors [94].

There do exist other units of analyses within the innovation systems (IS) domain, including Regional Innovation Systems (RIS), Sectoral Innovation Systems (SIS) and Technological Innovation Systems (TIS). Like the ecosystem construct, these approaches require the IS boundary to be defined before analysis [109], [110]. Whereas RIS uses spatial dimensions and

considers a region within a country [109], [110], SIS and TIS adopt a technology which spans several sectors, or a certain sector using several technologies, as system boundaries [110]. Yet these IS approaches may not sufficiently highlight the interdependencies between diverse system actors and evolutionary elements within a region or sector.

The innovation ecosystem perspective lends itself to offer firms insight into the interactions between several actors in addition to direct supply chain actors [32], [111]. It considers that firms may attempt to manage, both directly and indirectly, all actors positioned around the firm, including regulators, media and customers [32]. This may be different to a supply chain construct where users of the construct often consider only suppliers as actors [32], [94]. The ecosystem perspective includes also the invisible, non-business relationships within actor networks, such as the effects of policy regulations on ecosystem actors [94]. Again, the innovation ecosystem perspective is recognised to include the evolution of an industry with time [32], [111].

Although the value chain construct acknowledges interdependencies between actors and their activities, it does little to offer insight into the effects of the relative positionings of these actors and activities [91], something the innovation ecosystem perspective allows [91]. Iansiti and Levien [102] also note that the traditional value chain does not include actors who are not directly involved with the development and delivery of a product or service. Additionally, multiple industries and value chains can form part of the innovation ecosystem [32].

A very important characteristic of the innovation ecosystem perspective is the focus on value creation [91]. It draws attention to the internal structure and operation of innovation systems [100].

The innovation ecosystem perspective has been applied in the contexts of healthcare and other service industries [105], [112]–[114]. Healthcare service delivery is reliant on various supportive subsystems and their integration can be viewed as an ecosystem [112]. There is an appreciation for the importance of a systems approach for the development and sustainability of quality standards in the healthcare sector [112]. Especially relevant to firms engaged with healthcare innovations at the base of the pyramid (BOP), the collaborative networks of an ecosystem help to mitigate the execution, co-innovation and adoption risks by the mobilisation and sharing of resources within the ecosystem [114]. An aspect of ecosystems which Adner [98] suggests firms should leverage.

3.2   Innovation ecosystem perspective on innovation platforms

The innovation ecosystem perspective has potential as a framework for analysing and managing IPs, especially because of its focus on value creation and the interdependencies between actors. To prevent further inconsistencies in applying the lens, a review of the use of the innovation ecosystem perspective in IP literature guides its application in this research.

The application of the innovation ecosystem perspective is new to the analysis of IPs. In 2018, researchers began adopting the innovation ecosystem view in their analysis of IPs [24], [115]. The motivations for using this perspective in previous research studies are considered. The review continues to describe how this perspective has been applied in these studies.

3.2.1 Motivations for use

Pigford and colleagues [115] use innovation ecosystems thinking to expand the traditional innovation systems approach to support the creation of innovation niches which facilitate the collective action of diverse actors [115]. According to them, the IS approach already supports the development of multi-stakeholder partnerships (also called IPs) [115], [116]. By adding new dimensions for consideration to the IS approach, the innovation ecosystem perspective allows for a better understanding of the functioning and management of IPs [115]. An important dimension which is added is the evolutionary nature of the interactions between innovation actors [24].

Grobbelaar [24] highlights the importance of a systems view of innovation to guide innovation management. Although the innovation ecosystem perspective is not the only systems approach, it is considered to be more systemic than other approaches [31]. She continues to highlight the presence of evolutionary features in this perspective to understand the progression of interactions between individual IP participants and their relationship to their environment [24].

Section 3.2.2 describes how innovation ecosystems develop around a central node, which can be a platform [103], [104]. This characteristic of the perspective has allowed researchers to recognise the presence of IPs at the centre of innovation ecosystems [24], [105]. Dondofema and Grobbelaar [105] echo the views of Adner and Kapoor [91] and Autio and Thomas [92] that the emphasis on interdependencies and connections between actors makes the innovation ecosystem perspective an attractive lens for studying IPs.

In response to criticisms of the innovation ecosystem perspective (see [31]), Dondofema and Grobbelaar [105] acknowledge the disparities between natural and artificial ecosystems, but argue that the usefulness of the metaphor is based on those aspects of strong similarity between natural ecosystems and innovation ecosystems. They argue that acknowledging the complexity of systems, the interactions between entities and their evolutionary nature in both natural and innovation ecosystems support the analogy [105]. They further argue that the analogy is not flawed in the role of governance in artificial ecosystems (governed by procedures and rules), as Oh and colleagues [31] suggest, because natural ecosystems are also governed (by the laws of nature) [105].

This research study adopts the view that the innovation ecosystem perspective is a suitable lens for innovation management when focusing on the similarities between natural and innovation ecosystems, on which the analogy is based [91], [105]. Previous research studies have

successfully applied this perspective to investigate the functioning and management of IPs, proving that it is an appropriate lens to this end. In the next section, the research draws on how the perspective is applied to IPs as the unit of analysis to leverage the advantages of using this perspective.

3.2.2 How the lens is used

Dondofema and Grobbelaar [105] adopt the ecosystem structuralist perspective on innovation ecosystems towards developing a framework for the management of innovation ecosystems. The ecosystem structuralist perspective views the ecosystem as consisting of diverse actors who coordinate to achieve a common set of objectives, and it considers activities, actors, positions and links as elements for analysis [117].

Both Grobbelaar [24] and Dondofema and Grobbelaar [105] have viewed an IP as the central node around which an innovation ecosystem develops. Grobbelaar [24] studies a university as the platform leader of an IP which mediates between stakeholders in an ecosystem, with local communities included as stakeholders in this ecosystem. Dondofema and Grobbelaar [105] in their study also select the platform leader as the focal firm.

The IP is considered to have the significant role of managing the concertation and coordination of stakeholders in the ecosystem [24]. Researchers have additionally used the evolutionary aspects of the innovation ecosystem perspective to recognise the different life cycle phases of IPs, using the functions relevant to each phase to better manage IPs [24].

Table 14 summarises the characteristics of applying the innovation ecosystem perspective to analyse IPs. These characteristics will guide the application of the perspective in this research study.

Table 14: Characteristics of applying the innovation ecosystem perspective to IPs

Characteristics of applying the lens to IPs	Source
Systems view of innovation with IP as the unit of analysis	[24], [115]
Activities, actors, positions and links are elements considered for analysis	[105]
The innovation ecosystem forms with an IP as the central node	[24], [105]
The IP mediates between stakeholders in the innovation ecosystem	[24]
The IP manages the concertation and coordination of the innovation ecosystem	[24]
Evolutionary features of relationships and interactions between individual IP participants are understood	[24]

3.3 Stakeholder engagement and participation

The true participation of stakeholders in decision-making processes is essential for any I4ID initiative, where participation is motivated by goals of empowerment, equity, trust and learning [48]. A review of the field of stakeholder participation gives insight into its development as it was applied in various domains over more than five decades [48]. The review contains the challenges which are present in the pursuit of genuine participation, especially in issues of social change and development [47], [48]. A framework for stakeholder participation is presented and various important aspects of the framework as they relate to this research are elaborated on. These are stakeholder analysis, levels of participation and evaluation of participation. The review presents various terminologies which have been adopted throughout this document.

The development of participatory approaches has seen the idea being misused and its benefits misrepresented, resulting in "stakeholder tyranny" rather than "emancipation" [118]. In the next section we argue that this is not acceptable when considering the commonly marginalised. Many have called for the institutionalisation of processes and a better articulation of the need for participatory approaches and their potential for development [48], [118]. Participation must be the end goal, not the means to an end, viewing it as a process to achieve the goals of inclusive development.

3.3.1 The emergence of stakeholder participation

3.3.1.1 Political participation: from 'government' to 'governance'

Political modernisation has seen the transformation of democratic institutions as citizens and non-governmental organisations (NGOs) have become increasingly involved in politics and government processes [119]. Traditional power structures have eroded as citizens, NGOs and even subnational governments no longer simply accept the authority of the state.

Van Tatenhove and Leroy [119] describe the transformation as a shift from 'government' to 'governance'. Pierre [120] defines governance as maintaining coordination and coherence among diverse actors, each with their own objectives, including citizens, political institutions, businesses and international organisations. This requires a common understanding to be formed among these actors. Van Tatenhove and Leroy [119] identified governance procedures which resulted from the intersection of the state and civil society, where actors have the opportunity to influence policy both reactively and proactively by communicating their views at the various stages of the policy development process. Additional procedures are identifiable in the intersection of the state and business where these influence regulations and, consequently, policy development, governance and participation [119].

Political modernisation has allowed society to be viewed not as something which is distinct from the state and governed by it. Rather, the state engages with civil society to develop and implement appropriate policy [119].

3.3.1.2   Mainstreamed participation: a means to an end

First emerging in the 1960s from an increasing awareness of the effects of organisations on society and the environment, then on to incorporating local perspectives in the 1970s, the 1980s saw participatory approaches in development initiatives being mainstreamed [48], [118]. This was attributed to a growing understanding that local knowledge and the participation of the beneficiaries of development initiatives have significant value [121]. Consequently, participatory procedures became a requisite for development initiatives [118].

In this time, participation was regarded as a 'quick fix' for dealing with inequality and social change [48], [118]. Major international organisations and institutions endured heavy criticism for using participatory approaches to depoliticise development as participation was seen only as a means to an end [118]. That is, participation was used to gain credibility, satisfy funder requirements, or to meet legislative requirements. Alternatively, participation was used to improve project quality and reduce costs. Participation thus offered very little opportunity for empowerment as the approaches used failed to address the inequalities and issues of social justice [118]. All the while governments and institutions continued to use participation as a tool to pressure and manipulate actors and increase productivity [118].

A lack of theory explaining and guiding the role of participation in development initiatives led to participation being viewed as a means to an end [121]. And despite its mainstreamed application, its potential as a process for transformation was not fully understood [121], [122]. A clear articulation of the role of agency is necessary to move participation from being viewed as a "technical device" [118] to a process for transformation and empowerment [48], [118].

3.3.1.3   Participation as the end goal

Rather than simply serving as a means to an end, participation is to be the end in itself [118], [123]. Focus should be placed on participation as a process [48], [118], [123]; a process which "awakens levels of consciousness, constitutes self-transformation and develops and strengthens the capacity of beneficiary groups in development initiatives" [123]. Nelson and Wright [122] explain that there are very different power relationships attributed to these two views, where the latter offers greater opportunities for the empowerment of citizens. Participation as the goal requires people to be at the centre of a development process and is critical to a democratic society that allows citizens to influence development [118], [122].

Despite all its potential, it is clear that the true participation of local people in development initiatives rarely achieves the goals of empowerment and transformation which are promised [118]. This is

because true representation of the marginalised sectors of society is rare, and citizens rarely enjoy equal power and control over participatory processes in the development sphere [118], [124]. This no doubt contributes to the increasing levels of marginalisation, exclusion and poverty which we observe in developing nations, including South Africa [125].

3.3.2 Defining key terms: stakeholders and stakeholder participation

Many researchers in the field of stakeholder theory use Freeman's [126] definition for stakeholders as: "any group or individual who can affect or is affected by the achievement of the organization's objectives". This definition offers a holistic view of the individual actors and actor groups who have a common interest or a stake in development processes and their outcomes.

Stakeholder participation can be defined as "a process through which stakeholders influence and share control over development initiatives and the decision and resources which affect them". [127] Public participation is commonly associated with governance and policy development, whereby non-government entities are able to participate in decision-making processes [118], [119], [128]. For development initiatives, the public is viewed as a specific stakeholder group and so the term stakeholder participation is used rather than public participation [47], [129].

The definitions for stakeholders and stakeholder participation as given above will be applied consistently throughout the research document. The issue of identifying stakeholders appropriately and establishing their level of participation in the development initiative will be discussed in Section 3.3.5.

3.3.3 Benefits of stakeholder participation

In his literature review of stakeholder participation for environmental management, Reed [48] lists a variety of benefits which are documented in the stakeholder participation literature. The benefits of participation for society, citizenship and equity include [48]:

1. More stakeholders are included in decisions around issues which affect them, and active citizenship is promoted, addressing the issue of marginalisation of stakeholders;
2. Increased public trust if participatory processes are transparent and consider the views of all stakeholders;
3. Empowering stakeholders through the cogeneration of knowledge and increasing their capacity to use the knowledge;
4. Improved perception of a holistic and fair process where diverse needs and values are accounted for;
5. Shared learning is promoted as stakeholders and wider society begin to appreciate the legitimacy of each other's views and learn from one another.

Shared learning, also called social learning, is one mechanism that delivers benefits for the quality and durability of development initiatives [48]. Reed [48] found that other practical benefits of participation for development initiatives are:

1. Intervention activities and technologies are better suited to the social and cultural contexts, increasing their potential to meet local needs and realise effective solution adoption and dissemination;
2. Robustness of research is improved by providing better information inputs;
3. Project design is improved by incorporating a variety of ideas, perspectives and priorities;
4. Decisions can be based on more complete information and may anticipate negative outcomes, improving their quality;
5. Trust is developed and adversarial relationships restored as participants find common ground and work together;
6. A sense of ownership amongst the stakeholders which improves the support and implementation of decisions and may reduce implementation costs.

There are clear benefits of participation for the development initiative and the stakeholders themselves; however, it is worth reiterating the difficulty of achieving these benefits entirely [48], [118]. This may be attributed to the risks involved with stakeholder participation approaches. These are addressed in the next subsection.

3.3.4 Criticisms and risks of stakeholder participation

Several criticisms and risks associated with participatory approaches are apparent from the literature [47], [48], [130]:

1. Empowerment does not take place in a 'power vacuum', and empowering marginalised stakeholders may have unexpected negative interactions with existing power structures;
2. Participation may reinforce existing privileges and empower already important stakeholders;
3. Group dynamics could limit the expressions of minority perspectives, resulting in a false consensus;
4. Participatory activities may be undertaken only to be seen (tokenism);
5. Poorly facilitated participation processes may create the impression that stakeholders' involvement has little influence on decisions that affect them;
6. Poorly facilitated participation may create ambiguities and delay intervention activities, making it a time-consuming process;
7. Participants may not be representative of the full variety of stakeholders;
8. Stakeholders may have insufficient expertise to participate in highly technical decisions, which may call into question the legitimacy of these decisions;
9. Maintaining continued engagement of stakeholders may be challenging;

10. Participation may prove to be an expensive process;

11. Participatory processes may divert resources away from project activities;

To mitigate the risks associated with stakeholder participation, a well-designed stakeholder engagement process is needed; one which is able to leverage the benefits of stakeholder participation and overcome its limitations to realise the necessary empowerment of stakeholders, and develop a complete understanding of the needs and priorities to be met [47].

3.3.5 Approaches to stakeholder participation

In response to the call for stakeholder engagement to be regarded as a process and to better understand its potential and role in development initiatives, researchers have begun to focus on various components of the participation process to institutionalise it [47], [48], [128]. This has seen the emergence of best practice principles for stakeholder participation and frameworks for implementing participation. These best practices are presented next, after which Luyet and colleagues' [47] framework to implement stakeholder participation is presented and the various components are discussed.

3.3.5.1 Stakeholder participation best practice

Reed [48] and Luyet and colleagues [47] present a number of principles which underlie the successful implementation of participatory processes [48], [129]:

1. Participation must be underpinned by an I4ID philosophy, promoting empowerment, equity, trust, learning and respect;

2. Participation should be considered from an early stage and continue throughout the process;

3. Stakeholders should be included systematically after analysing the appropriate stakeholders;

4. Clear objectives need to be established at the start and all stakeholders agree with the objectives;

5. Clear rules of engagement need to be established and agreed upon from the start;

6. Participation mechanisms must be appropriate to the context, considering the stakeholders, the objectives and the appropriate level of participation;

7. Skilled and experienced facilitation is critical;

8. Scientific knowledge should be integrated with local knowledge;

9. Adequate resources need to be available, including financial resources and time;

10. Participation needs to become institutionalised.

Building from the good and bad practice principles identified in their review of stakeholder participation literature, Luyet and colleagues [47] developed a framework for the design and implementation of stakeholder participation. This, and other frameworks (see for example [130]),

will be helpful to guide the stakeholder participation process considering the important principles for success.

3.3.5.2 A framework for the implementation of stakeholder participation

Luyet and colleagues' [47] comprehensive framework for stakeholder participation (see Figure 9) is structured as a process. The process of implementation begins with the identification of stakeholders. The stakeholders are subsequently characterised and organised according to distinguishing features and assigned a level of participation [47]. The process continues to select a participation technique that is appropriate to the specified level of participation [47]. The framework is designed to be flexible, allowing for stakeholders to have differing levels of participation by implementing different participatory techniques in parallel [47]. Finally, the implementation of participatory techniques must be evaluated in the final phase of the process [47], [48], [130].
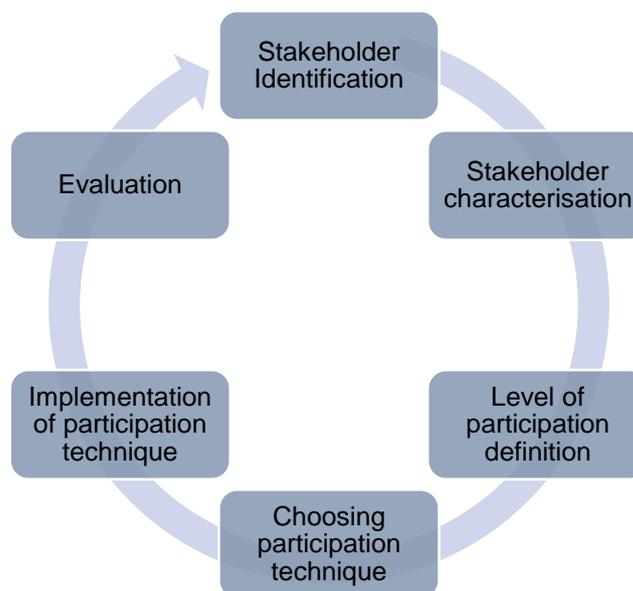
Figure 9: Framework for stakeholder participation (Source: [47]**. Adapted)**

The framework gives insight and guidance into the 'who' and 'how' of stakeholder participation; as for the 'when', it is suggested that the framework be applied in every identifiable phase of a project's life cycle, e.g. analysis and identifying objectives, designing solutions, decision-making, implementation and evaluation [47].

There are a number of techniques which can be applied in the different phases of the stakeholder participation framework [47]. Generally, a specific technique is chosen according to the project's context and objectives [47], [48]. The review of stakeholder participation continues by introducing and discussing some techniques which may be appropriate to the phases within in the framework.

3.3.5.3 Stakeholder analysis: purpose and techniques

Remaining with the framework in Figure 9, stakeholder identification and stakeholder characterisation are processes related to stakeholder analysis. Reed and colleagues [128] posit that stakeholder analysis is a significant first step in any stakeholder engagement activity, yet often stakeholders are identified and selected on an ad hoc basis. During the evaluation of the preliminary framework for stakeholder engagement (see Section 6.3), semi-structured interviews were conducted with subject matter experts and very few interviewees reported on using a standardised stakeholder identification and selection process. An impromptu approach risks excluding important stakeholder groups, biasing results and threatening the support and sustainability of a project [128]. To mitigate these risks, a standardised process using various methods for stakeholder analysis is beneficial [128].

Stakeholder analysis is a process that: (1) defines aspects of a social or natural phenomenon affected by a decision or action; (2) identifies individuals, groups and organisations who can affect or are affected by these aspects of the phenomenon; and (3) prioritises the individuals and groups for involvement in the decision-making process [128], [130].

In their review of stakeholder analysis techniques in natural resource management, Reed and colleagues [128] identified 10 techniques which are used for stakeholder identification, stakeholder differentiation and categorisation, and investigating relationships between stakeholders (these can be sequential steps in a stakeholder analysis process). The techniques may be used for more than one of these purposes, but most are used for a single purpose. Figure 10 summarises the different techniques under each primary purpose [128].
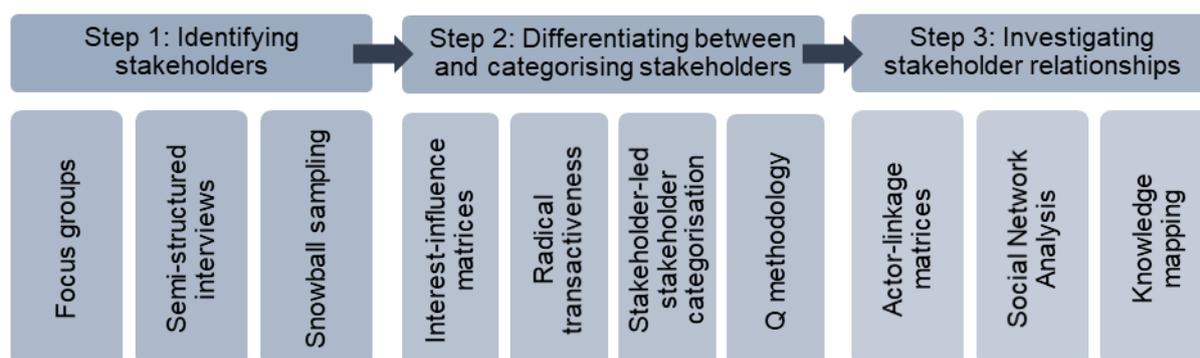
Figure 10: Stakeholder analysis techniques (Source: [128]**. Adapted)**

A description of each stakeholder analysis technique in Figure 10 is given in Appendix B. Each technique may be applied with or without the participation of stakeholders. Provided enough documentary evidence exists or analysts have sufficient knowledge of the individuals and groups with a stake in the issue, the stakeholder analysis itself need not be a participatory process [128]. Again, various levels of participation can be applied to the stakeholder analysis techniques, ranging from "passive participation" to "active engagement" [128].

3.3.5.4 Stakeholder identification

Stakeholder identification is the starting point of the stakeholder participation framework [47]. An inclusive view of stakeholders is critical to address marginalisation and inequality [131]. To appropriately identify who has a stake in an issue, the boundaries and scope of the issue must be properly understood [128]. The stakeholders that emerge will depend on the adopted view of what a stakeholder is [47], and criteria must be carefully selected to facilitate who is chosen as a stakeholder [47], [128]. The criteria may include geographical proximity, economic interest, social principles, legitimacy, urgency and demographic criteria [47], [128]. These criteria should enable a balance of interests, views and opinions represented by the stakeholders, though this may be difficult to achieve in practice [130].

One or more of the three techniques for stakeholder identification in Figure 10 can be used, and the process should see the addition of stakeholders in an iterative fashion [128]. This reduces the risk of omitting stakeholders [128] whose addition at a later stage may disrupt the participation process [47]. Ideally, all stakeholders should participate [47]. Realistically, however, this is not necessarily viable as including every single stakeholder may result in the project becoming too complex, requiring immense resources of time and money [47], [128]. Luyet and colleagues [47] propose that a balance must be found between the risks of over- and underrepresentation of stakeholders. Finally, after applying their framework to a case study, these authors report on the importance of identifying both current and potential stakeholders of the project [47].

3.3.5.5 Stakeholder categorisation

Stakeholder identification is followed by the categorisation of the identified stakeholders [47], [128]. The characterisation gives insight into the power relations between stakeholders and establishes their specific interest in the project [47]. While characterisation is done by applying carefully selected criteria, systematic approaches do not exist [47]. The criteria used depend on the context of the project [47]. Luyet and colleagues [47] found that stakeholders are characterised according to one or more of the following:

1. Their attitudes and interest toward the project;
2. Potential conflicts and coalitions between stakeholders;
3. Conflicting and agreeing objectives;
4. Stakeholders' access to resources;
5. Political influence over the project;
6. Degree of implication;
7. Stakeholder power, urgency, proximity and legitimacy;
8. Level of influence.

Despite the use of criteria, caution must be taken when forming stakeholder groups, ensuring that the process is transparent and limits bias [47].

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3.3.5.6   Levels of participation

The third phase of the stakeholder participation framework is to assign the appropriate levels of participation to the stakeholder groups [47]. A stakeholder's degree of involvement influences which participation mechanisms are appropriate for implementation and so also affects other processes of the project [47]. Assigning an inappropriate level of participation to a stakeholder risks selecting an unsuitable participation mechanism which may give that stakeholder too much or too little power [47]. The level of participation assigned to stakeholders must always align with the desired goal of participation; to empower stakeholders and to address marginalisation, exclusion and inequality [48], [118].

Various typologies for participation have been proposed (see [132]–[135]). A well-known typology is that of Arnstein [133], whose "ladder of citizen participation" has for many years been regarded as the benchmark for stakeholder participation [136]. The typology has eight levels (or rungs) of participation which are assigned to one of three groups according to the amount of control allowed to participants [133]. The first two rungs of the ladder, manipulation and therapy, are grouped as non-participation [118], [133]. The next three rungs, informing, consultation and appeasement, are deemed as tokenism [118], [133]. Tokenism implies the efforts are only symbolic, where top-down planning uses participation as a tool to lend credibility to decisions already made [118]. The top three rungs are partnership, delegated power and citizen control. These represent true participation where citizens are afforded the power to fully contribute in the decision-making process [118], [133].

Penderis [118] categorised the "intensity levels of participation" of four well-established participation typologies according to participation as a means and participation as an end. Table 15 shows these groupings.

Table 15: Levels of participation as a means or as an end

	Arnstein (1969) [133]	**Pretty (1995)** [134]	**White (1996)** [135]	**IAP2** [132]
Participation as a means	Manipulation Therapy Informing Consultation Appeasement	Manipulative participation Passive participation Consultation Participation for material benefits Functional participation	Nominal Instrumental	Inform Consult Involve
Participation as an end	Partnership Delegated power	Interactive participation	Representative Transformative	Collaborate Empower

	Citizen control	Self-mobilisation		

<div align="right">(Source: [47]. Adapted)</div>

Most of the participation levels of all typologies fall within the category of participation as a means. This reiterates the discussion in Section 3.3.1.2 that participation is often used only to lend credibility, meet organisational requirements or to satisfy donors of development initiatives [118]. It becomes merely a "pretence mechanism" [118]. Table 15 is useful to guide the selection of participation mechanisms that have the potential for transformation and empowerment [118].

Adapting Arnstein's [133] typology, Luyet and colleagues [47] propose five levels of participation. These are [47]:

1. Information: The project is explained to stakeholders;
2. Consultation: The project is presented to stakeholders who can make suggestions, after which decisions proceed with or without considering stakeholder input;
3. Collaboration: The project is presented to stakeholders who can make suggestions, after which decisions proceed while considering stakeholder input;
4. Co-decision: Cooperating with stakeholders to agree on solutions and implementation procedures;
5. Empowerment: Stakeholders make decisions regarding project development and implementation.

These levels are more descriptive than the other typologies included in the review and lend a deeper understanding of their potential for stakeholder involvement and the participation mechanisms which may be appropriate to each.

Once stakeholders have been categorised according to certain criteria and the levels of participation are understood, there remains the issue of assigning the appropriate level of participation to each stakeholder category. A decision must be made regarding how involved each of the groups of stakeholders is going to be. It is unlikely that all stakeholder groups will be assigned the same amount of participation potential [47], although the highest level of participation that is appropriate should be assigned. Luyet and colleagues [47] suggest using a number of individuals who are familiar with the context of the phenomenon, including some stakeholders and experts, in the process of assigning the levels of involvement to stakeholder groups. This process cannot be underestimated and can only be deemed legitimate if it is based on the insights from a range of stakeholders [47].

3.3.5.7   Selecting the appropriate participation mechanism

Selecting the participatory mechanisms to apply is phase four of the stakeholder participation framework [47]. The objectives of the participatory approach and the level of participation of the

stakeholders must be established before selecting participation mechanisms [47]. The selection of the appropriate participation mechanisms depends on the level of participation assigned to stakeholders, the type of stakeholders, local social norms, past events, timing of the participatory process and the knowledge and experience of the facilitator [47].

Many participation mechanisms exist, and to document each would be infeasible. Luyet and colleagues [47] selected a handful of techniques and mapped them relative to the participation levels they proposed. Table 16 shows a selection of participation mechanisms and their participation potential.

Table 16: Some participatory techniques and the corresponding participation levels

Participation mechanism	Information	Consultation	Collaboration	Co-decision	Empowerment
Newsletter	X				
Reports	X				
Presentations	X	X	X		
Interviews, questionnaires, surveys	X	X	X		
Field visits	X	X	X		
Workshops		X	X	X	X
Focus group			X	X	X
Role playing			X	X	X
Scenario analysis		X	X	X	X

(Source: [47]. Adapted)

There seems to be consensus in stakeholder participation research that the primary cause of a failed participation process is the selection of an inappropriate participation mechanism [47], [48], [118].

3.3.5.8 *Implementation of participation mechanisms*

Implementing the selected participation mechanisms is the fifth phase in the framework for stakeholder participation [47]. Here the various best practice frameworks for stakeholder participation are of significant value (see Section 3.3.5.1). Some principles that are of importance are early participation, establishing clear rules of engagement and formulating common objectives [47], [48].

At implementation it becomes important to consider how to sustain stakeholders' interest in the project as a lack of interest may lead to ineffective engagement and even to losing participants [47]. Transparency and casting a long-term vision for the involvement of stakeholders may help to maintain their interest, along with raising awareness of their involvement using, for example, publicity techniques [47]. Participation must be properly managed throughout the project to minimise the risks of stakeholder frustration and mistrust, which would be detrimental to the processes and outcomes of a project [47].

3.3.5.9   *Evaluating stakeholder participation*

The final phase of the framework for stakeholder participation is the evaluation of the participatory process [47]. The purpose of evaluation is to gather experiences and outcomes which may be used to improve similar applications in the future [47], [130]. Evaluation also allows for an improved understanding of the impact and consequences of the participatory process on stakeholders [47], [130].

It may be useful to reflect on the original objectives of stakeholder participation when attempting to measure its success and impact [130]. Evaluation of participatory processes generally use criteria from one of three categories [47]:

1. Criteria related to the process, such as communication, conflict resolution, early involvement, equity, transparency, influence, representativeness of stakeholders and alignment with interests and priorities;
2. Criteria related to the outcomes of the process, including accountability, capacity development, knowledge building and shared learning;
3. Criteria linked to the political, social, cultural, historical and environmental context.

Reed [48] found that the number of investigations which seek to evaluate the participatory processes and test the claims made for stakeholder participation is limited. The few investigations that have been made tend to focus on the process of stakeholder participation, with too little attention given to its outcomes [48].

Qualitative and quantitative techniques are applied to evaluate participatory processes, including interviews with stakeholders and analyses of reports and meeting minutes [47]. As no standardised procedures exist, the criteria for evaluation must again be carefully selected according to the project goals and the purpose of the evaluation [47]. The evaluation process is not to be treated as an afterthought [47], [48]. A good evaluation is planned at the beginning of the stakeholder participation process and should integrate the three categories of evaluation criteria discussed above.

There are strong arguments for the application of participatory evaluation techniques where stakeholders select and apply the evaluation criteria [137]. This idea is also common in the IP literature (see [138]–[142]). One way to do this is to derive criteria from theory and have stakeholders prioritise the criteria by means of questionnaires [48]. In one such investigation, stakeholders indicated that "using the best available scientific information, having a genuine influence on decisions, promoting communication and learning, and treating all [stakeholders] equally" are criteria that must be prioritised [143].

The results of one study which evaluated participatory processes show that the extent to which the goals of the participatory process are met relies strongly on the standard of facilitation, communication, clarity of the objectives and the quality of planning activities [144]. Another study shows that strategic representation positively influences the quality of the planning activities and decisions taken [145]. Yet another study shows that there is a noticeable influence on the decision-making process only when stakeholders have a high interest in the issues at hand [146]. Influence is also linked to the presence of strong social networks between stakeholders and so time and effort should be directed to the development of these [146].

Not all the studies that have attempted to evaluate the outcomes and the processes of stakeholder participation are included in this review (see [48] for a more complete list of studies). A small number of researchers have attempted to evaluate some of the claims which have been made for stakeholder participation; it is satisfying to see that evidence to support these does exist [48]. One condition is clear: the quality of the outcomes depend on the quality of the processes that lead to them.

3.3.6 Concluding discussion on stakeholder engagement and participation

Participatory approaches to research and development have immense potential to transform the current landscape of marginalisation, inequality and economic exclusion experienced by many stakeholder groups in developing countries. Caution must be exercised to avoid using participation as a means to an end, which has proven to tyrannise stakeholders rather than empower them [118]. Stakeholder participation must be regarded as a process which complements developing initiatives, where the goals of participation are centred around the stakeholders [48]. The project then benefits because of these goals rather than directly seeking project benefits through participation. To realise the benefits of participation, the process must be managed carefully and evaluated critically, and the process must remain transparent [47], [48], [130].

3.4   Conceptual tool development

Tools are a valuable mechanism to implement the goals of research [147]. Put another way, they are a useful means of translating research into practice. A discussion on conceptual tools developed from conceptual frameworks is presented in this section of the conceptual review. The

researcher realised that although there is value in a conceptual framework for stakeholder engagement in IPs, the immense amount of information contained in the framework may be overwhelming. The framework's potential to be disseminated and used in practice likely relies on presenting it in a way designed to guide its user through the framework's insights with ease [89].

As an introduction to the discussion, Table 17 summarises a selection of tools, their typologies and a description of their design.

Table 17: Tool typologies and design description

Tool type	Description	Reference
Evaluation tool	A comprehensive e-Health evaluation tool based on a conceptual framework for evaluating e-health programmes.	[148]
Management tool	A tool for evaluating and subsequently managing supply chain resilience. The tool draws from elements of a supply chain resilience and management framework.	[86]
Outcomes assessment tool	A patient-based, disease-specific outcomes tool to inform dysphagia research. The tool is based on results of data analysis of focus group discussions with samples of target respondents.	[88], [89]
Measurement tool	A tool designed to measure the absorptive capacity in pharmaceutical companies. The tool draws from elements of an existing conceptual framework of absorptive capacity in organisations.	[149]
	A tool to measure the access to, and use of, medicines at a household level. This tool draws from various conceptual frameworks developed during previous research efforts.	[150]
Self-assessment tool	Intended to assist institutions to assess and guide the strengthening of research mentorship. The user is prompted to develop their own tool by interpreting for themselves how best to utilise a conceptual framework for research mentorship.	[90]
Diagnostic tool	Diagnoses the performance of health system functions by uncovering the root causes of weak performance. The tool is customisable by its users who set the purpose and scope, and define performance questions, indicators and targets.	[151]
	A tool to perform health checks on engineering and technology projects. The tool is based on a conceptual framework of diagnostic characteristics for project management of these engineering and technology projects.	[152]

The diversity in the tools and their application areas is apparent from the examples presented in Table 17. Most of the tool typologies incorporate a method for comparing the as-is condition of a phenomenon to the should-be, or best, condition of that phenomenon. Other tools expand on this and guide the user in interpreting strategic next-steps to improve the current condition. This is likely

the case of a management tool. Some tools are designed to improve the quality of data collection for research. What is important to notice is that each example describes a tool that is developed from a strong theoretical foundation. Most of the tools use conceptual frameworks as that foundation, drawing from all or some of the elements of these frameworks.

Some examples in Table 17 allude to researchers developing conceptual frameworks themselves before embarking on tool development. Other researchers opt to base their tools on existing conceptual frameworks developed in studies independent to their own. Additionally, while most researchers opt for a single framework for tool development, others investigate several frameworks for the development of their tools, consolidating elements of different frameworks into a single tool.

It seems that tools can be developed for any purpose and by a multitude of means, but there is consensus that tools need to be developed using a scientific method [87], [148]. As the discussion continues, the importance of rigorous research, validity and reliability in tool development will become apparent.

3.4.1 Theoretical foundations for tool development

In some instances, such as the case of website evaluation tools, there exist a multitude of tools that serve the same purpose. However, research continues to develop tools for evaluating the information contained in websites because "virtually none of [the existing tools] derive from a scientific development process" [147].

There is great potential for these tools if they are substantiated by rigorous research. One example is the Agilefant[3] project management support tool for linking business and development [153]. The tool evolved into a web application based on a well-designed conceptual framework and was extensively evaluated across multiple research studies and pilots in software companies. Today it is a fully functioning web application used by many major software companies [153], and its success is almost certainly because its development is backed by years of research and improvements of the concept.

Among several advantages to developing tools from conceptual frameworks is the rigorous research approach that underlies the development of a conceptual framework. Conceptual frameworks then serve as comprehensive platforms for tool development [148]. Khoja and colleagues [148] highlight that the strengths of their evaluation tool are actually founded in the quality of the conceptual framework on which it is based; that is, the quality of the theoretical foundation of the tool.

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[3] www.agilefant.com/company/

Development processes for conceptual frameworks make provision for evaluation and improvement of a framework before developing a tool. This is indeed the case with the framework development process adopted by this research (see Section 2.3). The benefits of this are apparent in the case of McHorney and colleagues [88], [89], who began their process of tool development after only analysing data from focus groups, opting not to improve the quality of their analysis using additional data collection methods or evaluation by other subject matter experts. Despite spending three months meticulously developing the items for their tool, a questionnaire, initial testing of the tool reduced its content by almost 50% [88], [89]. Following a more rigorous approach for the theoretical foundation of the tool may have led to a better initial tool that required fewer improvements after testing.

In the case where explicit measurements are absent in social phenomena, Keyser and colleagues [90] posit that a conceptual framework can itself be useful to evaluate current performance against what may be deemed desirable. They encourage potential users of the framework to create a self-assessment tool for themselves, in this case for measuring an institution's support for research mentorship, using their framework as the basis [90]. Conceptual frameworks allow for flexibility in the tools that may come from them, depending on the design requirements and areas of focus.

This notion of flexibility is supported by the work of Khoja and colleagues [148] who developed four separate tools from a single framework, each tool being developed in line with different parts of their framework. Each of these tools also has subcomponents for different, yet predefined users [148].

3.4.2 Approaches to tool development

When developing a tool from pre-existing frameworks, selecting the appropriate framework is of critical importance [150]. As a tool draws on elements of a framework, it too will focus on those concepts, themes and variables that the framework deems most important. When more than one conceptual framework has been developed for the same phenomenon, it may be that these frameworks have a different theoretical focus. An example of this is the conceptual frameworks for health services usage developed independently by Penchansky and Thomas [154], and Andersen [155], which emphasise different variables as determinants of access to medicine [150]. It then becomes important for researchers to decide which theoretical focus they wish to adopt. Where frameworks adopt the same theoretical focus but are developed with a specific context in mind, such as low-income countries versus middle- or high-income countries, the tools will be appropriate to those contexts also [150], [151].

These contextual and theoretical focus-issues are not a concern for researchers who develop the conceptual frameworks themselves, as is the case in this research. This review focuses on tool development after the development of the conceptual framework.

Tool development involves translating framework content into a format that is appealing to its intended target audience [148]. However, not all elements of a conceptual framework may be translatable into the paradigm of a tool [147]. Despite this, it should be clear how a tool relates to the framework from which it is developed [148]. The design and development of a tool should be defined and described in enough detail and rigour to help users decide whether the tool is appropriate for their application purpose. This is also necessary for the user to understand how they are to interpret results and glean value from them [87].

Upon consolidating the various approaches researchers have taken to develop qualitative tools from conceptual frameworks, a general procedure for tool development is proposed in Figure 11.
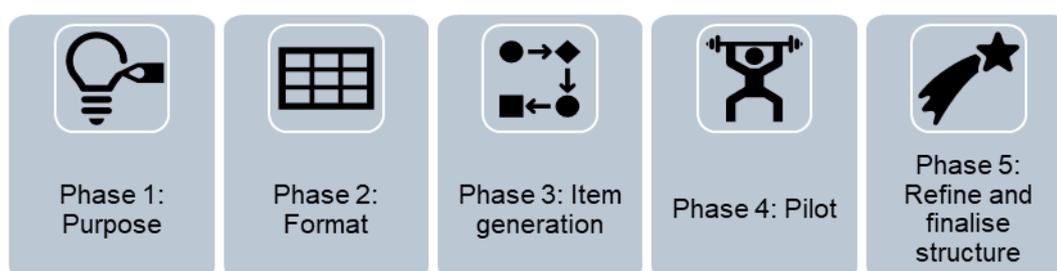
Figure 11: Procedure for conceptual tool development

The first phase establishes the use of the tool. It involves deciding on the nature and purpose of the tool [87], [89], [148]. It is important to ask, "who will be the user?", and, "what will the tool try to achieve?". Spruyt and Gozal [87] posit that tools for social phenomena may be used to measure or influence knowledge, attitude, emotion, cognition or behaviour. These design decisions are important to establish which elements of the conceptual framework will be translated into the tool. They are also necessary to ensure the development of a tool that is "clear, unambiguous, and uniformly workable" [87].

In their development of a tool to support dysphagia research, McHorney and colleagues [89] adopted specific design requirements to guide the development of a valid tool. In addition to the tool's intended purpose, the tool's content, reading level and administration time had to be acceptable to the target audience [89]. The design requirements continued to address issues of content scope, the nature of the information that will be gained from using the tool and how to analyse it [89].

In the second phase, decisions regarding the format of the tool need to be made. This is important if the tool is going to produce the outcomes and results that it is intended to [87]–[89]. Here researchers must consider how users will be guided by the tool to obtain information or relay information founded in the framework [87]. The format of the items (questions, discussion guidelines, prompts, etc.) which make up the tool need to be decided in this phase, along with the means by which respondents interact with the tool.

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The third phase comprises generating the items. Items are the questions, discussion points and other prompting mechanisms which emerge from a process of translating the necessary elements of a conceptual framework. The second and third phases are codependent as the items must be appropriate to the adopted tool format [87]. This process may be complemented by insights gleaned from expert opinions, brainstorming sessions and additional reviews of literature [86]–[89].

A tool's visual presentation will impact the adoption of that tool and influences the attitudes of the user and respondents [87]–[89]. As far as possible, a single response format should be kept, and fonts should be applied consistently. The reading style should be familiar to the user. For questionnaires, the order of questions is very important [86], [88], [89].

Considering again McHorney and colleagues [88], [89], they specified various criteria for item development. These criteria included considerations of language use, grade of reading level, number of attributions per item, item length, inherent bias, the presence of double and implicit negatives, and items prone to non-response [88], [89]. The adoption of appropriate criteria for item generation contributes to a robust tool development process and benefits the quality of the tool.

Phase four captures the need to test the tool by means of a trial use [87], [90], [153]. This helps researchers assess to what extent the tool meets its design requirements [89], [90]. This phase of the tool's development often sees a sample of its target audience involved by means of pilot implementations, interviews or focus groups, where shortcomings of the tool can be identified and recommendations for improvements made [87]–[89].

In the fifth phase, the elements of the tool that need improvement are addressed. The structure of the tool is finalised, with consideration again being given to the format and overall appearance of the tool [87]. The tool should now be ready for use in research and practice. Researchers recognise the importance of keeping a developed tool updated with new insight to ensure it remains relevant over time [156]. This responsibility may fall on the adopters of the tool to ensure that it remains relevant to their specific context [156].

The process of a tool's use will become standardised over time; adopters of the tool will begin to develop norms regarding the use of the tool in their specific contexts [87]. It may be that these norms are distinct from those in other contexts.

3.4.3 Validity and reliability in tool development

Ensuring that a tool is valid and reliable is essential if it is to benefit research and practice [86]–[88]. A valid tool sufficiently satisfies its design requirements, and a reliable tool can consistently produce the same output [147]. The validity and reliability of qualitative tools greatly depend on the scientific rigour of the tool development process, relying on objective, systematic criteria that are applied consistently and reliably [89]. It should not be presumed that developing a tool from a

satisfactorily valid and reliable framework will inevitably result in a valid and reliable tool. It should be clear from the tool development process that evaluating, testing and refining the tool is important for the development of the appropriate tool [86], [88], [89], [147].

3.5   Concluding remarks: Chapter 3

Chapter 3 introduces and develops discussions around concepts important to the research. These include the innovation ecosystem perspective, stakeholder engagement and participation, and conceptual tool development. The conceptual review supplements the research investigation, providing much needed understanding for data analysis and the overall process to develop the conceptual framework and tool.

The innovation ecosystem perspective provides a lens from which the researcher may 'observe' the development and functioning of IPs and their stakeholders. The review of stakeholder engagement and participation enables a richer analysis of the primary publications that capture the presence of this phenomenon in the context of IPs.

With the review of these important concepts in hand, the research could commence with the development of a conceptual framework. The systematic literature review was the departure point and was necessary to identify appropriate primary publications for analysis. The systematic literature review and the analysis of the primary publications is reported in the next chapter.

Chapter 4: Systematic literature review

Chapter 4 comprises a detailed description of the systematic literature review procedure. The chapter details the protocol for identifying, screening and selecting publications to populate a dataset of primary literature. The chapter continues to report on the findings from the documentary analysis of the primary publications. Chapter 4 captures the CFA phases 1 through 5.

Chapter outcomes	
	1. Discuss the purpose of a systematic review of literature
	2. Present the search strategy
	3. Present the criteria for screening of documents
	4. Describe the development of the primary dataset for review
	5. Present descriptive review results
	6. Present conceptual review results
	7. Discuss the role of the review results for the continuing research

4.1 The case for a systematic literature review

A systematic literature review looks to achieve a thorough and fair review of literature by following a transparent and orderly process [67]. The systematic literature review synthesises existing research studies in an attempt to: (1) understand the overall picture created by the evidence presented in existing research [66]; (2) identify gaps for further research [66], [67]; and (3) provide context to position new research appropriately [67]. A systematic literature review must follow a search strategy developed prior to the review [67]. The search strategy aims to find all the literature relevant to the research question [67]. Documenting the search strategy allows readers to evaluate the completeness of the search and it contributes to the transparency and replicability of the process [67].

For all their potential, systematic literature reviews come at a price. Their completion requires substantially more effort compared to traditional literature reviews [66], [67]. Researcher bias remains a possibility in systematic literature reviews, although to a lesser degree than in traditional literature reviews [67].

The systematic literature review has been favoured by several researchers who wish to trace the development of research concepts and investigate their impact on a research field (see as examples [31], [32], [94], [97], [100], [157]). When presented with all publications relevant to a concept, researchers not only review the content but also perform a bibliometric analysis of the dataset to supplement their investigation of research trends in the literature [32]. As seen in this chapter, bibliometric analyses may highlight insights from publication timelines, geographical focus areas, research disciplines, research aims, and analytical lenses used by researchers. Investigating the research disciplines and research aims brings to the fore different research streams along which a concept may have developed. This provides the necessary context to position future research.

At the commencement of this study, the researcher was unfamiliar with the research landscape and a systematic literature review was selected to explore existing studies relevant to the research area. The researcher was able to position their work to address certain research gaps while ensuring the research is consistent with previous research in the field. The systematic review aimed to: (1) identify fundamental concepts for stakeholder engagement practices in IPs; (2) identify further research gaps in the IP literature which may be addressed; (3) investigate the relationships shared between concepts; and (4) build the path for continuing research.

4.2   Search strategy

The procedure for the systematic literature review is based on that of Petticrew and Roberts [66] and has been discussed in Section 2.4. The following sections report on the search strategy employed.

4.2.1 Literature types considered

The primary literature sources used in the research are peer-reviewed literature, including journal articles, conference papers and theses. Grey literature is included as a secondary input to the research. Grey literature is not peer-reviewed and consists of unpublished research papers and publications by researchers and practitioners in the field. Including grey literature serves to limit publication bias and to promote the multidisciplinary nature of the literature sources.

4.2.2 Databases

Peer-reviewed literature is searched using the Scopus electronic abstract and citation database. Full papers are retrieved from the publishers' websites. Grey literature is obtained from a Google search using the same search strings as in the peer-reviewed literature search. Only publications from development organisations and accredited research organisations are included as grey literature.

4.2.3 Search terms

The search terms should present all relevant literature related to IPs and their application in developing countries. It is important for the development of the conceptual framework that literature relating to various disciplines, especially healthcare, are retrieved [52]. An iterative 'trial and error' method is used to develop appropriate search terms.

Various search terms are combined to form three search strings. The terms in each search string are joined using the appropriate Boolean operator 'OR' to link terms of the same category. The operator 'AND' is used to link different categories. This ensures that the search results contain the necessary terms in the title, abstract or as keywords in the documents. The search terms are given in Table 18.

Table 18: Search terms per category for different search strings

	Category	Search terms		Search position
Search string 1	Innovation platforms	'innovation platforms'	'multi-stakeholder partnerships'	Title, Abstract, Keywords
	Developing countries	'developing country'	'developing countries'	Title, Abstract, Keywords
Search string 2	Innovation platforms	'innovation platforms'	'multi-stakeholder partnerships'	Title, Abstract, Keywords
	Actor	'actor'	'participant'	Title, Abstract, Keywords
		'stakeholder'	'player'	
	Role/responsibility	'role'	'responsibility'	Title, Abstract, Keywords
		'task'	'function'	
Search string 3	Innovation platforms	'innovation platforms'	'multi-stakeholder partnerships'	Title, Abstract, Keywords
	Innovation for inclusive development	'innovation for inclusive development'	'inclusive innovation'	Title, Abstract, Keywords
		'frugal innovation'	'base-of-the-pyramid'	
		'inclusion'		

4.2.4 Documenting and reporting the search

The literature review process must be transparent and reproducible [67]. To facilitate the documentation of each search, a database worksheet is populated with the necessary information regarding the search, including the search string used, the number of documents returned, and any additional filters applied to the search.

4.3 Screening criteria

4.3.1 Selection criteria

The search results are 'cleaned' using a set of initial selection criteria. The criteria are:

1. Duplication: exclude documents that are repeated in the search results;
2. Language: exclude documents that were not originally published in English;
3. Relevance: exclude documents that appear to be irrelevant;
4. Full text availability: exclude documents where it is not possible to find the full text.

Relevance is established by reading the title and abstract of each document. Where the relevance of the content is not clear, the whole document is read extensively. The remaining documents are tested against the inclusion criteria to identify the appropriate data sources for the CFA procedure.

4.3.2 Inclusion criteria

The final step in selecting the data sources for the CFA is to test the remaining documents against the inclusion criteria. Both peer-reviewed and grey literature are assessed against the inclusion criteria. Any documents that do not meet the required inclusion criteria are excluded.

The inclusion criteria are listed below:

1. The content must contain information about innovation platforms, defined as a group of individuals who aim to drive learning and change by collaboratively identifying challenges and developing opportunities to address these challenges. The participants come from various backgrounds and have different interests, often conflicting and divergent [21], [23]. A similar definition may be implied by the terms 'multi-stakeholder (innovation) partnership', 'innovation network' and 'innovation coalition' [11].
2. The content must show that those actors who are usually on the sidelines of innovation activities are included as participants in the platform. Innovation platforms that are underpinned by an innovation for inclusive development philosophy are especially relevant, where innovation for inclusive development suggests including economically marginalised groups and individuals as participants in the innovation platform as the platform seeks to identify challenges and develop appropriate solutions [33], [34].
3. The content must focus on innovation platforms or aspects of them.

The full texts of all documents that meet the inclusion criteria are acquired and stored for analysis.

4.4   Developing the dataset

Figure 12 illustrates the process of screening and finally selecting the data sources for the CFA from the search results yielded by applying the process described in Section 4.2. Eliminated publications appear in red blocks alongside the reason for their exclusion. Blue blocks show the number of publications that passed the initial screening process and the final selection criteria.

The Scopus search yielded 108 documents. The title and abstract of each document are read thoroughly, and the initial selection criteria applied to each. Following testing for language, duplication, relevance and full-text availability, the number of documents is reduced to 52. Testing the remaining documents against the strict inclusion criteria excludes another 24 documents. The remaining 28 documents are selected to serve as data sources for the CFA. A further 11 grey literature documents are added. The dataset contains a total of 39 publications and a list of these is included in Appendix A.

The dataset of IP literature is not significantly large; however, the dataset size is comparable to that of an existing research study which conducted a systematic review of IP literature [83], [158]–[160]. The descriptive statistics of the dataset publications (see Section 4.5) show that the IP literature is still in its infancy. This contributes to the small number of publications in the dataset.
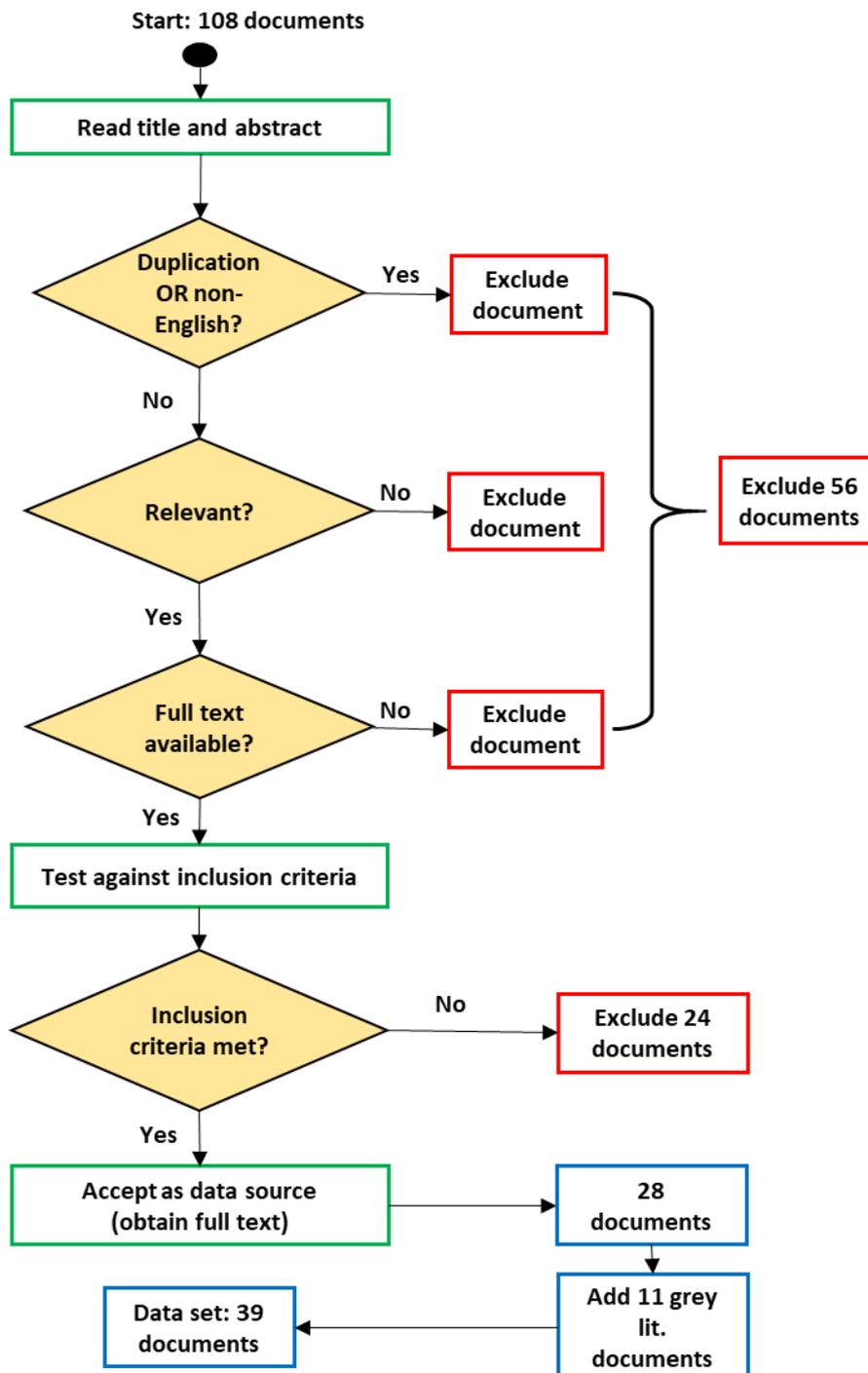
Figure 12: Systematic screening and literature selection process

4.5   Descriptive statistics and analysis

The descriptive statistics give a holistic view of the dataset of literature sources pertaining to IPs which incorporate an I4ID approach. Journal articles account for the most publications, followed by research briefs. Most publications in the dataset were published in 2013. Additionally, most publications focus on the development of the theories and concepts that underlie IPs.

4.5.1 Timeline of publications
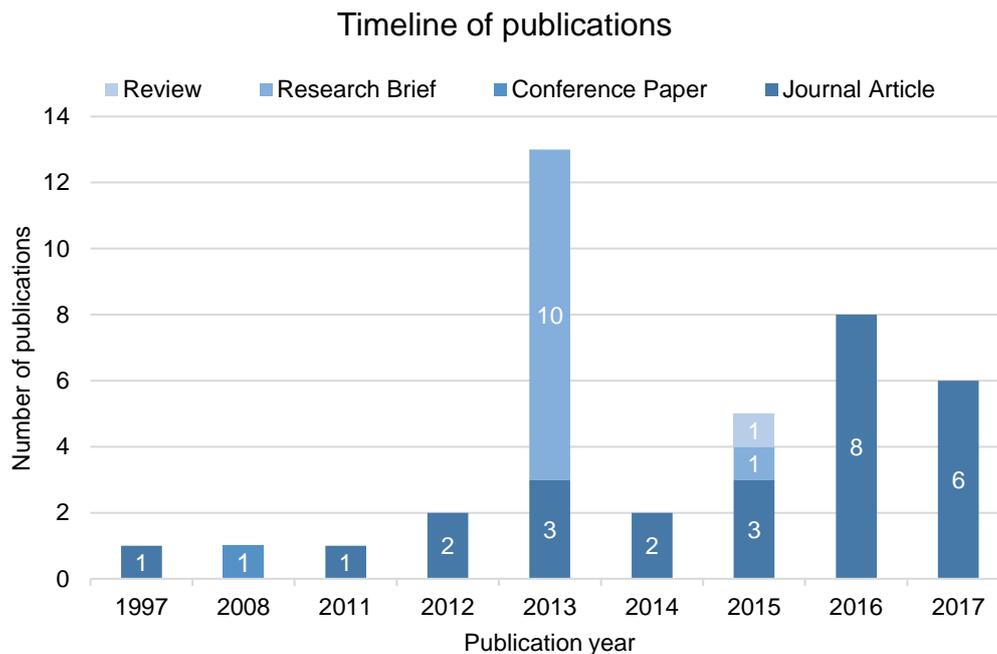
Figure 13: Timeline of publications, document types and number of documents

Figure 13 displays the timeline of the publications and the number of publications of each document type that appeared in a specific year. Despite already appearing by 1997, it is apparent that the IP literature remains in its infancy as a larger number of publications appear only in 2013 and onwards. Additionally, the number of publications per year, even in 2013 where the most publications appear, is small. It is important to notice that the journal publications have seen an increase in later years, pointing to the growing interest in the value of IPs among researchers as a valuable driver of dissemination of innovations and research in practice.

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4.5.2 Disciplines considered

Disciplines of study
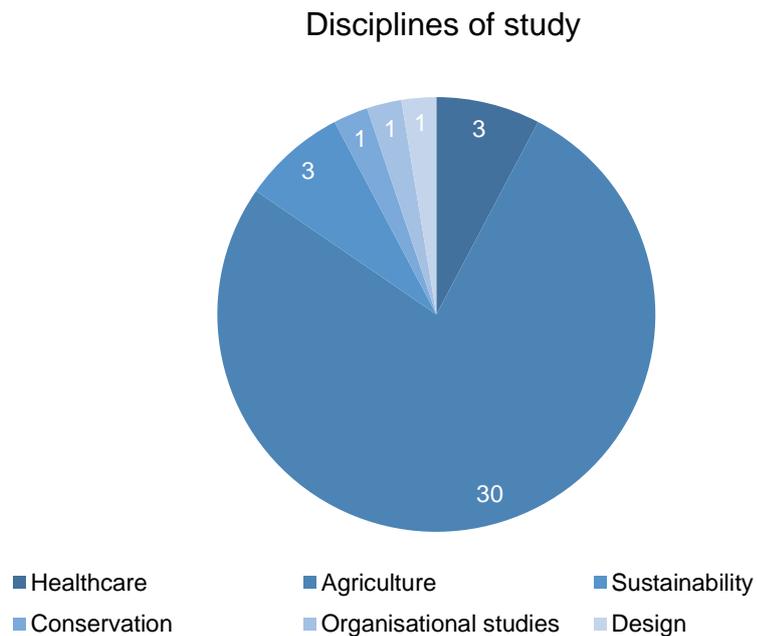
Figure 14: Number of publications per discipline

Figure 14 displays the various disciplines under which the publications fall and the number of publications per discipline. The benefit of a multidisciplinary approach to the research is apparent here as only three documents relate to the healthcare sector. Focusing on this sector alone would not provide enough data for the research findings to be of significant value. Most of the publications fall in the agricultural sector, with 30 publications. This alludes to the important impact that the multi-stakeholder partnership approach has had on smallholder farmers in developing countries. The roots of the IP from business [25] is echoed by the small number of publications relating to organisational studies. The approach has also been documented in the areas of sustainability, conservation and design.

4.5.3 Geographic focus areas

Geographical focus

Legend: ■ Africa ■ Asia ■ Europe ■ North America ■ Global
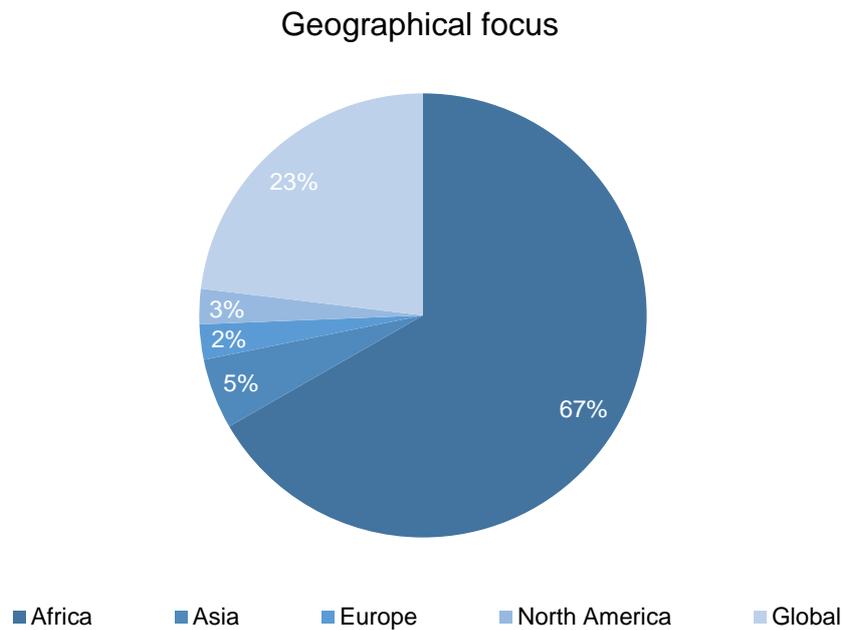
Figure 15: Geographical focus areas of publications as percentages

Figure 15 displays the geographical areas considered in the publications. Where no mention was made of a country or continent, the publications were assumed to have a global focus. The existing implementations of IPs in developing countries is again portrayed as most publications focus on Africa (67%). Asia, Europe and North America also appear but in significantly fewer publications. The rich presence of developing countries in the dataset is favourable for the research because of the intention to address challenges in the healthcare sectors of developing countries, especially of sub-Saharan Africa.

4.5.4 Purpose of publications

Publication purpose
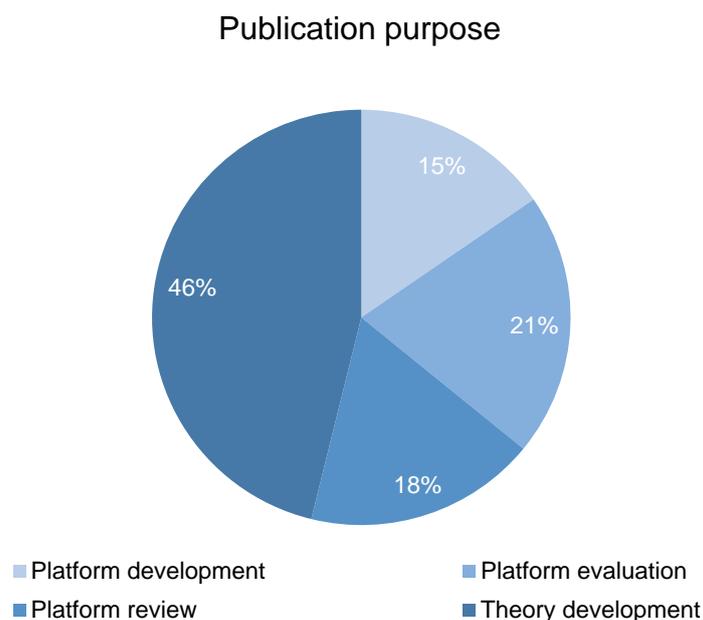
Figure 16: Percentage of publications per primary publication purpose

Building upon a categorisation procedure for IP literature from an existing research study on IPs in healthcare [160], the primary purpose of each document in the dataset is categorised. The categories are platform development, platform evaluation, platform review and theory development. The definition and distinction between each of these categories is given in Table 19.

Table 19: Categorisation of publication purpose

Purpose of publication	Definition
Platform development	Publications focus on the formation of IPs and the different components that are required for an IP to function. Includes publications which identify components that are critical to the functioning of IPs.
Platform evaluation	Publications consider how well an IP has performed. An analysis of the successes and failures of the IP in meeting its objectives results in the identification of best practices and requirements for success of the IP.
Platform review	Publications describe a specific IP's activities and the processes and mechanisms used to achieve the IP objectives. Allows for reflections and discussions on potential downfalls and apparent successes of the IP.
Theory development	Publications focus on the development and application of key concepts in the IP literature. Publications hope to achieve improved understanding of the concepts and their relevance. Publications may focus on a single IP concept or attempt to develop several concepts.

(Source: [160]. Adapted)

Figure 16 displays the percentage of the dataset publications which appear under each category. The primary purpose of most of the publications is theory development, with 46%. Another 21% of

the publications focus on platform evaluation. Platform review publications account for 18% while the remaining 15% of the publications focus on platform development. The theory development publications will assist in identifying which IP concepts are yet to be better developed and properly understood. From the platform evaluation and platform review publications, an idea can be formed of how effective IPs are in achieving their goals. Platform development publications highlight important components which are necessary for the formation and functioning of IPs.

4.5.5 Gap analysis

To position the research appropriately within the existing body of knowledge on innovation for inclusive development (I4ID), stakeholder engagement and innovation platforms (IPs), the peer-reviewed publications in the dataset are analysed to identify research gaps in the literature.

The publications are categorised according to the analytical perspectives or research paradigms in which the authors position their work. These paradigms indicate in which research area a contribution is being made. The unit of analysis[4] and the unit of observation[5] of each publication are noted for analysis.

With these elements of each publication noted, research gaps related to the unit of analysis and the unit of observation can be identified. A gap for the positioning of the research within a new research paradigm may also be identified.

Appendix BC contains the table which results from the grouping of the peer-reviewed publications according to their research paradigms and units of analysis and observation. The table is used for the gap analysis as discussed below.

4.5.5.1 Discussion: trends in the literature

The 28 peer-reviewed publications are grouped into 10 categories according to their research paradigms and perspectives. These are complexity science, innovation systems (IS) approach, integrated agricultural landscape management (IALM), learning alliances, learning environments, netchains, policy development, research to practice (r2p), supply chains (SC) and value co-creation. Three studies had not been positioned within any research paradigms by their authors.

Some publications were grouped according to perspectives based on the IS approach, namely, agricultural innovation systems (AIS), integrated agricultural research for development (IAR4D), components and functions perspectives and multi-level interactions. Similarly, five policy development perspectives emerged; the whole-of-society approach, economic development

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[4] The entity that frames what is being studied [215].

[5] The object about which information is collected and a subset of the unit of analysis [216].

policy, global policy framework, health policy and agricultural development policy. The SC perspective that emerged incorporates sustainable agricultural SCs.

From the publications, five distinct units of analysis emerged; these are IPs, multi-stakeholder partnerships (MSP), agro-entrepreneurship, policy systems in health and international partnerships. The terms 'innovations platform' and 'multi-stakeholder partnership' may imply the same idea [11]; this research adopts the term 'innovation platform'. Thus, the distinction of IPs and MSPs is maintained only according to the terminology used by the authors in their studies.

Considering only IPs and MSPs as units of analysis, Figure 17 shows their presence in the different research paradigms. It is interesting to note that the use of the IP term is most common in agricultural research studies while studies in other sectors use the term MSP. The AIS approach is applied by most of the studies when IPs and MSPs are the unit of analysis. Interestingly, despite being a common construct in innovation management literature [31], [32], [92], the value chain (VC) construct is not present in the list of research paradigms that emerged.
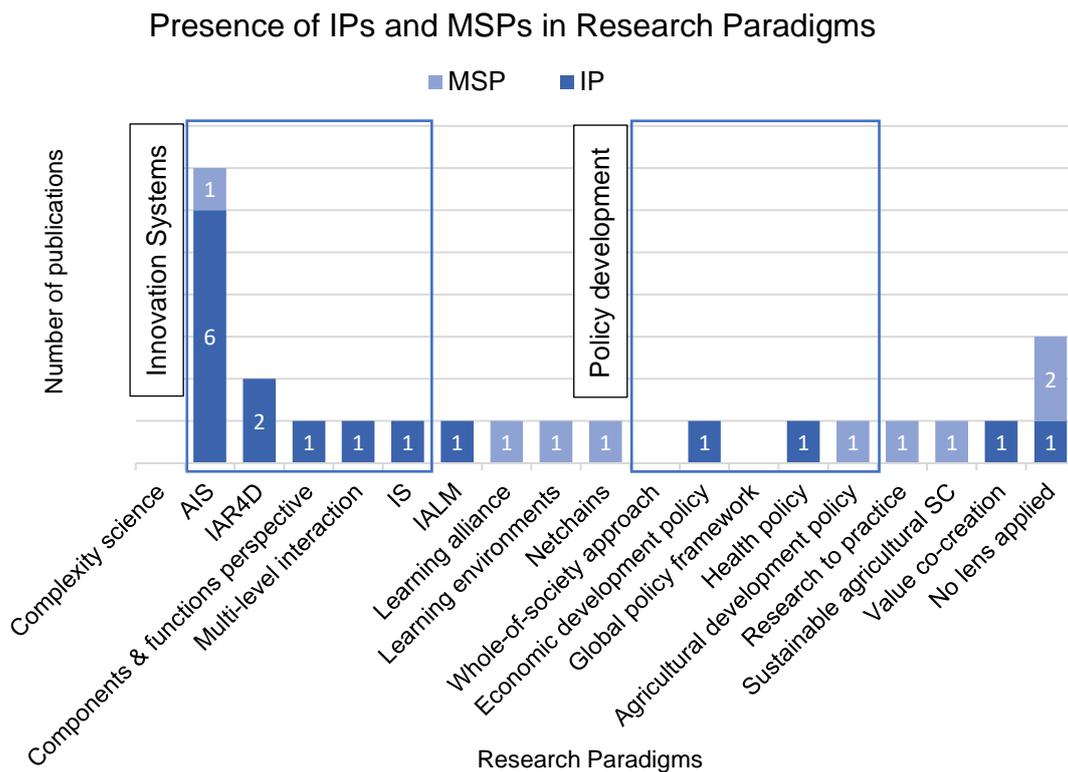
Figure 17: Presence of IPs and MSPs as units of analysis in different research paradigms

Among the presence of IPs and MSPs as units of analysis, 17 distinct units of observation emerged from the peer-reviewed publications. Some of these are displayed in Figure 18. The figure uses the analogy of a wall to represent the unit of analysis while the individual bricks which make up the wall represent the different units of observation. This analogy highlights that several units of observation may be contained in a single unit of analysis.
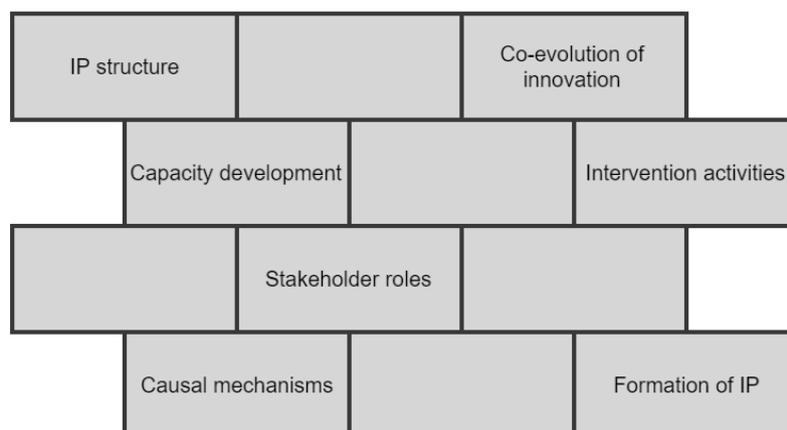
Figure 18: Some units of observation with IPs and MSPs as the units of analysis

Three research gaps emerged for the positioning of this research study: (1) investigating IPs in healthcare; (2) applying the innovation ecosystems perspective to IPs; and (3) selecting practices of engagement as the unit of observation.

4.5.5.2   Research gap 1: Investigating IPs in healthcare

In Section 4.5.2, it is reported that three publications in the dataset fall under the healthcare discipline. Only two of these publications have considered IPs as their unit of analysis [161], [162]. IPs have already been acknowledged as effective in the agricultural sector to develop the capacities of smallholder farmers, improve food security, promote sustainable agricultural practice and to bring research to practice [140], [163], [164]. There exists a gap to further investigate the role and potential of IPs as drivers of innovation and change within the healthcare sector. The role that IPs have in strengthening the capacities of communities to better manage their health may drastically reduce the burden on the public healthcare sector, while participation of the beneficiaries has the potential to guide the development of appropriate health policies.

This research will contribute to reducing this gap by considering IPs as its unit of analysis, with specific attention given to the relevance and potential of IPs in healthcare.

4.5.5.3   Research gap 2: applying the innovation ecosystem perspective to IPs

The IS approach to innovation management is most common in the dataset of peer-reviewed publications, specifically the AIS approach (see Figure 17). The innovation ecosystem approach expands the IS approach by adding to it important dimensions for considering innovation [115]. These include a focus on the interconnectedness of stakeholders in the innovation process and recognising the evolutionary nature of stakeholder networks and their interactions [24], [98]. Figure 17 shows that the innovation ecosystem perspective is not present in any of the dataset publications.

There is a gap for the application of the innovation ecosystem perspective with IPs as the unit of analysis. Section 3.1 contains an extensive discussion on the development of the innovation

ecosystem perspective while Section 3.2 discusses its potential for the study and management of IPs. Two studies have already begun to address this gap (see [24], [105]). Following the guidelines for positioning IPs in an innovation ecosystem (see Section 3.2.2), this research will contribute to reducing this gap by positioning the research in the innovation ecosystem paradigm.

4.5.5.4 *Research gap 3: practices of engagement as the unit of observation*

Out of the 17 units of observation where IPs and MSPs are units of analysis, only a single publication considered stakeholder engagement [165]. The paper is set in the IS literature and considers how the engagement of stakeholders positioned at various societal levels fulfils seven key IS functions [165]. However, the paper does not explicitly consider how stakeholders are engaged in an IP, and consequently, the barriers to effective stakeholder engagement are not addressed. Concepts describing the engagement practices present in IPs are not present in literature. These concepts may be useful to better understand and manage stakeholder engagement in IPs, contributing to the effective identification, inclusion and participation of appropriate stakeholders.

Because of the inclusive nature of IPs and the presence of diversity among participants, the topic of stakeholder engagement is an important one. This research will investigate the stakeholder engagement practices present in IPs to attempt to address this research gap. The research will continue to investigate the dynamics present in applying these concepts in practice, then report on the common barriers to stakeholder engagement in IPs, and how to overcome them.

The next section reports on the identification of engagement themes that emerged from the analysis of the primary publications. These engagement themes are founded in the many descriptions of stakeholder engagement activities present in IPs.

4.6 Fundamental themes of engagement

The analysis of the primary publications focused on the descriptions of interactions between the diverse stakeholders who partner in an IP. This diversity is especially prominent in IPs underpinned by an I4ID philosophy, where the involvement of socially and economically marginalised stakeholders increases the significance and risks of stakeholder interactions and its consequences [47], [48].

The fundamental 'themes' for stakeholder engagement form the building blocks to effective interactions between platform stakeholders. They may prove useful to better understand the complexities involved with the successful engagement of stakeholders to meet the IPs shared goals and objectives.

The analysis of the 39 primary publications revealed 16 themes of stakeholder engagement. Figure 19 displays the prominence of each theme in the dataset. The most prominent theme is resource

and capacity, which was identified 127 times in the primary publications. This is followed by alignment and then strategic representation, which were identified 96 and 86 times, respectively. The theme with the least mention is visioning and planning, which was identified only eight times. This is interesting, considering that the very nature of an IP requires a shared vision and objectives. In fact, visioning and planning are critical to an IP's functioning [166]. This already reveals an area of potential contribution by this research by bringing greater attention to the necessity of this theme.

Concept frequencies
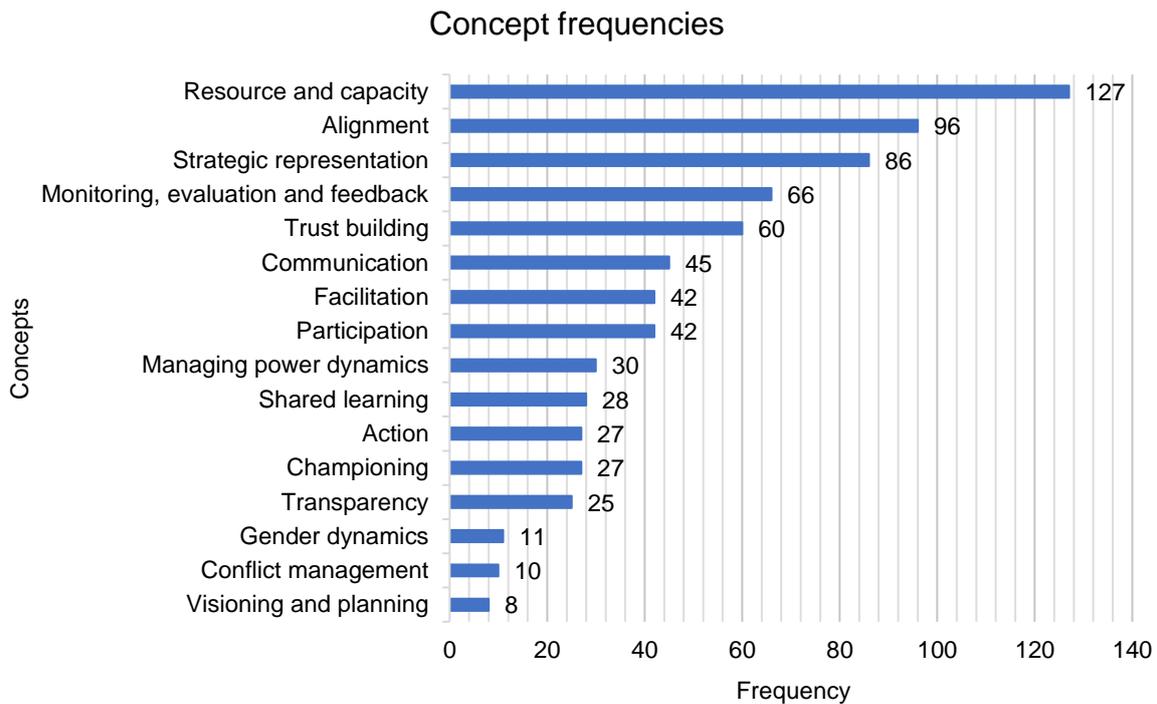
Figure 19: Frequency of appearance of concepts

Figure 20 shows the number of publications containing the identified themes. Despite resource and capacity being the most prominent theme, it is alignment which appears in most of the publications (26). Alignment is again a key characteristic of an IP as diverse stakeholders interact in a mutually beneficial partnership and depend on one another to realise their own objectives [161], [164], [167].

Publication per concept
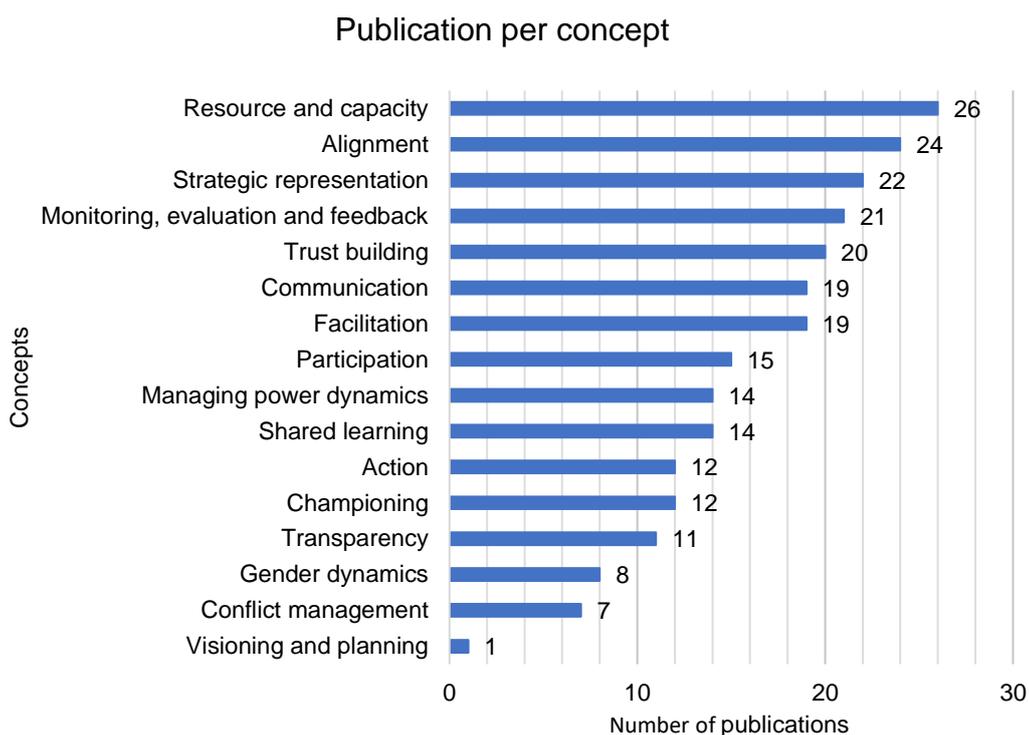
Figure 20: Number of publications in which each concept appears

The complete list of concepts is described in Table 20. The concepts have been named 'practices of engagement' (PoE).

Table 20: Practices of engagement (PoE) concepts

PoE concept	Definition	References
Action	The culmination of various planning activities into functional activities of practical value. Action gives the IP something to show for its efforts.	[11], [22], [106], [139], [141], [161], [162], [165], [166], [168]–[170]
Alignment	Developing needs-driven platform objectives which are rooted in the interests and needs of the platform participants. Also, the coordination of the activities, expectations, interests and knowledge of the platform participants towards realising the platform objectives.	[11], [22], [161]–[167], [169]–[171], [23], [172]–[177], [106], [116], [138]–[142]
Champion-ing	The role taken up by platform stakeholders to perform critical platform activities with outstanding vigour. Champions are motivated by their eagerness to see the platform operate successfully and to see the platform objectives realised.	[142], [161], [178], [179], [162], [163], [165], [169]–[172], [174]
Communication	The articulation of information. Communication is critical to establish and maintain stakeholder relationships. Communication is the power source to any partnership [173]. Includes both formal and informal channels of communication. A broad range of communication practices using different types of media is included.	[11], [23], [162], [165], [166], [168]–[171], [173], [175], [178], [106], [116], [138]–[142], [161]

PoE concept	Definition	References
Conflict management	The mitigation of potential misunderstandings and issues which may lead to conflict between stakeholders. Conflicts are addressed immediately. The objectives of conflict management include maintaining collaboration and alignment amongst stakeholders.	[11], [23], [138], [139], [141], [161], [166], [169]
Facilitation	The process of maintaining a healthy platform through mediation. Facilitation oversees the implementation of the other PoE concepts. Facilitation is often an assigned role in the platform.	[11], [23], [166]–[168], [173], [174], [176], [178], [180], [181], [116], [138], [140], [142], [161]–[163], [165]
Gender dynamics	Deals with ensuring that inclusivity among gender roles is achieved. The interests of women are represented, and women have a voice in the platform. Requires an understanding of cultural norms.	[181]
Managing power dynamics	The equity among platform stakeholders is maintained by managing power dynamics. This serves to counter the effects of self-interest and competitiveness among stakeholders. Weaker platform participants are empowered.	[11], [23], [173], [176], [180], [182], [106], [141], [161], [165], [166], [169], [170], [172]
Monitoring, evaluation and feedback	The processes and techniques coupled to the continuous tracking of platform activities, the appraisal of these activities, and reporting the outcomes. Allows for problems to be identified and improvements to be implemented. Participants who are responsible for various platform activities are held accountable.	[23], [106], [163], [165], [166], [168]–[170], [172]–[175], [116], [176], [183], [138]–[142], [161], [162]
Participation	The engagement of stakeholders with various platform activities. Stakeholders contribute their knowledge and skill sets towards realising the platform objectives through participation. Participation is required for real inclusion to be realised [34].	[11], [106], [170], [174], [176], [182], [138], [139], [141], [142], [161], [162], [165], [166]
Resources and capacity	Considers the physical, financial and human resources which are critical to a platform's functioning. Additionally, considers the existing capacities of the platform stakeholders and how these capacities are to be leveraged and further developed towards increasing the platform's own capacity.	[11], [21], [162], [165], [166], [168]–[174], [22], [175], [179], [184], [185], [23], [106], [138], [139], [141], [142], [161]
Shared learning	Refers to the effects of the continuous flow of information within and across platform boundaries. Includes the sharing of knowledge between platform stakeholders. The partnership approach of the platform encourages the sharing of new ideas and the development of improved solutions. The consequence of shared learning is the increase in capacity of the stakeholders.	[11], [20], [171], [172], [179], [180], [185], [106], [139], [141], [142], [162], [165], [169], [170]

PoE concept	Definition	References
Strategic representation	Linking diverse stakeholders to form the platform. Careful consideration is given to which stakeholder groups should be represented in the platform. Strategic representation empowers I4ID. Desirable stakeholders should be strategically identified using stakeholder analysis techniques.	[106], [116], [167], [169], [170], [172]–[176], [179], [182], [138], [185], [139], [141], [142], [161], [162], [165], [166]
Transparency	The free flow of information across platform borders. Transparency includes honest and accurate reporting on the implementation of platform activities and the consequences thereof. Transparency also relates to the interactions of platform stakeholders. Nothing that is of relevance to the platform and its stakeholders is withheld.	[106], [139], [175], [142], [161], [163], [165], [166], [170], [172], [173]
Trust building	Efforts made to develop and maintain relationships of trust among platform stakeholders. Also, to develop and maintain a feeling of trust in the platform and its intentions itself. Trust influences a person's willingness to be honest and cooperate. In a partnership approach, trust is both the glue that holds the partnership together and the lubricant that allows it to operate effectively [139], [140], [168], [177].	[11], [106], [167]–[172], [175], [177], [186], [138]–[140], [161], [163]–[166]
Visioning and planning	The development of a "roadmap" [106], [170] of what the platform is looking to achieve and how. Visioning is followed by the planning of executable activities towards realising the vision. If visioning and planning are not followed by action, the platform has little to show for its efforts.	[11], [106], [161], [165], [166], [170], [182]

4.7 Understanding the practices of engagement themes

In this section, each theme is discussed individually to give the reader a deeper understanding of the theme and its relevance in the context of IPs and the engagement of stakeholders.

4.7.1 Communication

Communication is an important component of stakeholder engagement for facilitating partnerships [23], balancing power asymmetries [141], and knowledge and experience sharing between stakeholders [165], [170]. Even amidst the increasing importance of information and communication technologies, traditional channels of communication remain important to inter-firm relationships [187]. These traditional channels refer to face-to-face discussions and physical visits. The IP literature stresses the importance of embracing formal and informal channels of communication in stakeholder engagement [165]. Formal channels refer to planned engagements like meetings, conference calls, workshops and site visits. Informal channels are emails, phone calls and dialogue outside of a planned engagement setting. Informal communication channels should not be overlooked when considering stakeholder engagement [141], [162], [169], as the presence of interpersonal communication builds interpersonal relationships between individuals

[161], [169], [187]. Informal channels serve as an effective means of information dissemination to the broader ecosystem of stakeholders [162].

Partnerships must encourage open dialogue between all stakeholders [138]. Engagement of marginalised stakeholders may be supplemented by interventions that ensure these stakeholders have a voice [141], [161]. Accepted norms of communication are likely to differ across a diverse stakeholder grouping. These norms need to be acknowledged and reformulated, where appropriate, to form a common understanding [169]. A common understanding and shared codes of conduct promote effective collaboration [169]. Suggested norms for engagement of marginalised stakeholders may be honesty and transparency in communications [170] and clear, specific and simple articulation [140], [178]. Communication serves a key role in fostering alignment among stakeholders as they express their needs and negotiate in the partnership [22], [139], [141], [170].

4.7.2 Trust building

In his review of marketing and business relationship literature, Cadilhon [187] posits that the individual stakeholders in partnerships, like IPs, need to trust one another if they are to solve problems which are common to them all [187]. He continues to categorise trust as general trust, where individuals are bound by certain norms and conventions, and trust based on reputation [187]. A global review of trust found that it is a more important consideration for populations of developing countries than for those of developed countries [188], which allude to the importance of establishing trust relationships when engaging marginalised stakeholders.

Trust is an abstract concept with psychological foundations involving emotionality [177]. In his work on IPs, Cadilhon [187] adopts the definition of trust as "the belief that each party was interested in the other's welfare and that neither would act without first considering the impact of his or her actions on the other" (see also [171]). The review of the IP literature revealed that trust guides the choices made by stakeholders regarding their level of honesty and their willingness to cooperate.

Trust building is the result of a general show of trustworthiness [161], [177], [186]. Specific to the context of stakeholder engagement, stakeholders should be approached with care after sufficient time has been spent observing and understanding their accepted social norms [138], [140]. Stakeholders are more likely to be interested in initiatives where clear linkages between actions and benefits can be recognised [138], [165]. The development of trust needs time [11], [169], [177], [186]. Literature strongly suggests that partnerships should start small, with modest goals that are easily achievable [138], [161], [177]. The benefits are thus quickly realised, and the goals can grow in complexity over time as trust between stakeholders grows. Marginalised stakeholders should be empowered, acknowledging their existing capacities and building on these [138]. This, coupled with early and sustained participation of the marginalised stakeholders, contributes to healthy trust relationships between stakeholders [138].

4.7.3 Managing power dynamics

Power dynamics can be defined as the relationship between those stakeholders with different and competing interests and with different types and levels of power [169], [176]. Power imbalances are present in partnerships involving diverse stakeholders and are more prominent when marginalised stakeholders are present. Economic positioning, resource capacity and social assets may contribute to power imbalances [170]. When embracing the inclusion of marginalised stakeholders, these non-traditional participants of the innovation process are often less powerful than traditional actors, who may carry greater influence and have more resources [176]. It must be acknowledged that their combination creates power imbalances [176]. In the context of IPs, poorly managed power dynamics can intensify inequalities and problems instead of solving them, relationships may be crippled and trust destroyed, and the decisions and activities which are prioritised may be skewed [165], [173], [176], [182].

Managing power dynamics seeks to ensure that each stakeholder is seen as equally important to the platform [176]. Decision-making power must be shared equally [161], while local knowledge is respected and promoted [176]. The IP literature contains practical ways towards managing power dynamics. When setting up an IP, careful consideration must be given to stakeholder representation to ensure that all groups are represented [176]. Potential power imbalances which exist between the stakeholders must be identified by investigating the economic, political and cultural contexts of the stakeholder groups [176]. Careful consideration must be given to what is prioritised, especially regarding the entry points of innovation solutions and the design and adoption of these solutions [176]. The intentional distribution of responsibility for activities to non-traditional stakeholders is commonly used to manage power dynamics [169]. Interventions on the side of the less powerful may be encouraged to strengthen their posture for participation [141].

4.7.4 Strategic representation

Ensuring proper representation in IPs is not as simple as including masses of people. This remains true when including those stakeholders who are marginalised from traditional innovation processes. Representation should rather be strategic; configuring stakeholder groups in the best possible way towards achieving the desired functions at each stage of the innovation process [161], [165]. Representation is dynamic [11], [106], [142], [165], [166]. The platform's needs and desired outcomes change as it moves through the different stages of the innovation process. With this, new stakeholders join as they become interested while others terminate their participation as they lose interest. New stakeholders are linked when their capacities become beneficial to the platform's functioning.

Therefore, strategic representation is not a mechanistic process of participation [141]. The roles of the stakeholders emerge when considering how their capacities can address the current platform needs [141].

In the context of I4ID, representation must challenge existing norms of traditional representation structures in innovation [179]. Strategic representation empowers I4ID and proper alignment with stakeholder's needs [138], [165]. I4ID looks to leverage the participation of strategically selected representatives of the commonly marginalised stakeholder groups. These may include grassroots level stakeholders and even the youth [138], [162], [166], [179]. This inclusion allows for a better understanding of the beneficiaries of the innovation output and their context [106], [173], [182]. It means that local cultures are better understood, and that local knowledge and institutions are acknowledged as relevant to inform the innovation process. This empowers proper alignment with the needs of the beneficiaries [138], [166]. Innovation solutions are thus more easily adopted and implemented, while feedback may be obtained directly from the beneficiaries [182], [185].

Beyond I4ID, the strategic engagement of key stakeholders increases the capacity and presence of the partnership within specific economic and social sectors, uplifting the stakeholder groups represented in the partnership [139], [165], [166], [175]. The presence of high-level stakeholders expands the resource pool of the partnership and may promote buy-in from prospective participants [106], [170], [175].

For strategic representation to be realised, it is necessary for stakeholders to be understood; some stakeholders may act as mediators to the innovation process while others will create barriers [166], [170], [174], [176]. It is necessary to know who serves as appropriate representatives for different stakeholder groups, what the agendas and expectations of stakeholders are, what potential roles they may fulfil in the innovation process and what skill sets and knowledge they bring [166], [170], [174], [176]. This means that the presence of stakeholders in the partnership is justified and that their roles and responsibilities are understood [138], [139], [141], [166], [170].

Stakeholder identification and analysis is important for the identification of appropriate stakeholders [106], [116], [142], [162], [166], [167], [170], [172], [174], [176]. There is evidence in the IP literature that stakeholder analysis should be a participatory process, where stakeholders share what they can offer and help to identify other potential stakeholders [170], [174]. This was found to be true when subject matter experts were asked to comment on the processes they follow for stakeholder identification.

4.7.5 Participation

It is necessary to distinguish between stakeholder representation and participation because representation does not inherently result in the involvement of the stakeholders of the innovation process [34], [176]. Participation is marked by a clear engagement of the represented stakeholders with the activities and processes associated with achieving the partnership's objectives, including clear inputs of resources, the contribution of competencies, risk sharing and scaling of activities [170].

True participation should foster a feeling of ownership of the innovation process and the solutions which are developed [11]. In the context of I4ID, participation empowers stakeholders and builds their capacities as they engage in the problem-solving process, deconstructing the challenges and constructing solutions [141]. For empowerment to be realised, the participation of commonly marginalised stakeholders cannot be limited to problem identification; participation should include the construction and implementation of the solutions [141] and equitable participation should be facilitated [161].

Participation can be facilitated by clearly defining the responsibilities of the different stakeholders who are represented, and it is important that stakeholders agree with the roles and responsibilities assigned to them [138], [142], [161], [165], [166]. Stakeholder roles and responsibilities should align with their interests and existing competencies [166].

Stakeholder motivation may be considered when looking to move from representation to active participation. Effective participation is often incentivised, especially when the benefits of participation may not at first be clear to the different stakeholders [165]. Additionally, support structures may be put in place to promote the participation of resource-poor stakeholders. This is one way to consider equity in participation. Motivations for participation are best considered during stakeholder identification and analysis to strategically link stakeholders who are self-motivated with the partnership. Stakeholders should be enthusiastic in uncovering the need for innovation in the specific context considered [162], [174]. Stakeholders may even be prompted to participate due to the potential risks associated with not participating, such as regulatory action induced by policy changes (see [161]).

Potential constraints to participation may be present; strict programme timelines may hinder the participation of marginalised stakeholders and the beneficiaries, incentives for participation and its benefits may be unclear and participants' resources may be engaged elsewhere [162].

To facilitate participation, the coordination of roles and responsibilities between stakeholders should also be considered [142]. Coordination considers how stakeholders fulfil their roles without impeding the responsibilities of other stakeholders [139]. Stakeholders would be required to work together in ways that may be unfamiliar to them [161].

4.7.6 Alignment

It is apparent from Section 4.6 that alignment is the theme which is most grounded in the IP literature. Alignment refers to participants of the IP or partnership committing to a common set of goals and objectives and a shared vision [23], [138], [139], [142], [161], [170], [175], [177]. In turn, the goals and objectives are chosen to meet the demands of participant stakeholders and the stakeholder groups (communities, organisations, etc.) which they represent [11], [106], [116], [166], [173]. The desired outcome of alignment is the development and implementation of

innovation solutions which are relevant and appropriate to the context of the beneficiaries [11], [139]. Furthermore, alignment extends to meet the needs of the wider platform ecosystem; the communities or organisations represented by the stakeholders [106], [166].

Before participating in the IP, stakeholders may already have competing or codependent roles within an economic sector. Potential distrust might be present among these stakeholders, and they must learn to trust one another [167], [171]. By helping stakeholders recognise that they depend on one another for realising their own objectives, these stakeholders begin to understand that there is mutual benefit in their participation and so align their vision and efforts [161], [164], [165], [167], [170], [172]. Within South Africa's healthcare sector, the restoring of trust relationships and alignment is attempted through the establishment of partnerships between the public and private healthcare sectors [1].

The review of the IP literature makes it clear that alignment is not something to be implemented, but rather it is constantly facilitated [23]. Alignment is cultivated progressively and maintained throughout the life of the IP [166], [172]. It requires people's norms and perceptions to be managed and challenged [139], [166]. For example, the perception may exist that the patients visiting a community clinic are not educated and therefore are not suitable to participate in the innovation process.

The use of appropriate communication methods is important to facilitate alignment [165], [173]. The platform must provide the space for participants to voice what their needs are [171]. Additionally, it may be necessary to promote the intentional expression of stakeholders' demands using diagnostic exercises, needs assessments and visioning discussions to allow for needs to emerge as they are perceived by the stakeholders [106], [116], [162], [175]. Participants may need to negotiate with one another, which directs the development of the desired outcomes and the activities chosen to achieve them [22], [139], [141], [170].

The IP literature strongly promotes the use of participatory approaches to foster alignment. All participants should jointly identify emerging needs and challenges and analyse them to develop appropriate research questions [161], [162], [165], [172], [174], [175]. Thereafter, participants should be purposefully included in the development and coordination of platform activities towards meeting the needs and addressing the challenges which emerged [11], [106], [142], [162], [165], [171], [174]. Because stakeholder representation is dynamic, alignment will require platform participants to reconfigure their roles and responsibilities throughout the life of the IP, and as such these participants must be willing to adapt [116].

Sensitivity to the effects of power dynamics is critical to the alignment of the platform's goals and objectives with the needs of the stakeholders, especially the intended beneficiaries [106], [165]. Power dynamics must be managed well so as not to skew the prioritisation of platform activities.

This is often seen where the funding organisations have an agenda which does not fully align with the true needs of the beneficiaries; if the situation is not handled with care, the beneficiaries may lose their trust in the platform's intentions or the funders may pull out.

4.7.7 Resources and capacity

To better describe the theme of resources and capacity, it is beneficial to distinguish between two aspects of the theme, namely, resource mobilisation and capacity development (see Figure 21). These two aspects reinforce one another; greater availability of resources increases the platform's capacity and the potential for capacity development, which in turn increases the resource pool of the platform [179].
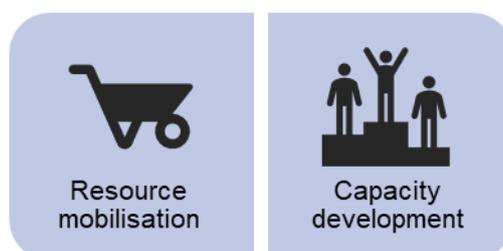
Figure 21: The aspects of resources and capacity in IPs

4.7.7.1 Resource mobilisation

The resources available to the platform direct the approaches and tools which can be used in the innovation process [165]. Resource availability determines the flexibility of the platform and the scale and intensity of the efforts to meet the needs of the beneficiaries [165], [173]. Importantly, the resource pool of the IP influences the long-term sustainability of the platform and its interventions [138], [166]. Figure 22 shows the different resource types commonly present in an IP's resource pool [22], [166].
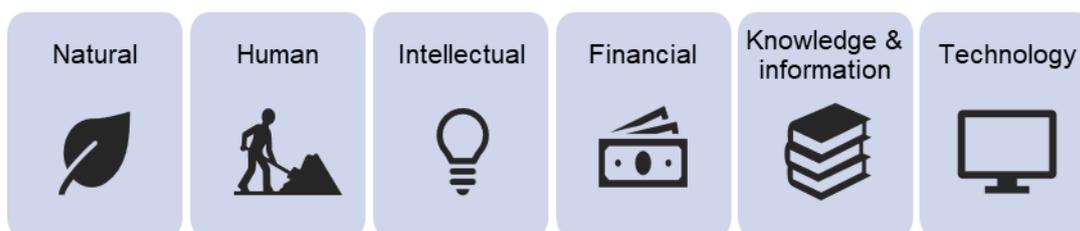
Figure 22: Resource types commonly present in IPs

The resource positioning of the platform is heavily influenced by the representation and participation of key stakeholders [139], [175]. The platform should leverage the participation of resource-rich stakeholders who are able to make decisions and commitments on behalf of the stakeholder groups which they represent [166], [172], [175], [185]. In the case where resources come from within the platform, that is, from the participants themselves, a sensitivity to power dynamics must be practised [165]. A link between a stakeholder's resource-richness and their level

of influence over platform activities must be decoupled; power to influence must not be skewed based on stakeholders' resource contributions [106], [161], [165], [169].

Planning for the resources which are required by the platform is important [166]. For instance, the required resources should reflect the ambitions of the platform, including the scale of activities, time frames, the level of participation of stakeholders and the prospects for capacity development of the beneficiaries and other stakeholders [138]. It is necessary to understand what resources are available in the network of stakeholders [166], reiterating the important role of stakeholder analysis in the IP formation process. The participation of key stakeholders has the potential to activate the mobilisation of their resources [169].

Once the resource requirements are understood and stakeholders' potential resource contributions are known, the resources need to be secured for the platform's benefit [166]. This may require an understanding of tenure systems and rights of ownership, depending on the nature of the resources required [138]. The use of resources by platform participants should be a facilitated process with adequate control over the accessibility and allocation of resources [106], [138].

Cases may exist where the platform relies on the provision of resources by stakeholders who do not directly participate in the activities of the platform. These are commonly funding organisations. To secure funding from these organisation, the intentions of the platform must be clearly communicated, and it must be clear that the platform's goals and objectives are defined by the needs of the beneficiaries [106], [175]. However, the demands of resource providers must not be taken lightly, and power dynamics must be managed to ensure a continued relationship and access to resources [106].

Within the I4ID context, resource mobilisation would play an important role in empowering marginalised stakeholders to better manage their own resources, teaching them to leverage what they have and to do so in a sustainable fashion [138].

4.7.7.2 Capacity development

Here it is necessary to distinguish between the capacity development of the individual stakeholders and stakeholder groups, and that of the IP. The two are closely linked and share a reinforcing relationship, and it is beneficial to note different aspects to achieving each of them.

Capacity development of the individual participants includes the development and strengthening of their capabilities. Put simply, strengthening the capabilities of the stakeholders is to empower them [141]. This is a process where the initial interactive participation of stakeholders evolves into self-organisation; stakeholders become agents of their own change [141]. IPs would do well to involve key stakeholders as early as possible and to ensure that their involvement is sustained as long as the platform permits their strategic participation [138].

Capacity development of the marginalised stakeholders, especially the beneficiaries, is important in the context of I4ID. Boogaard and colleagues [184] suggest that, in addition to self-organisation and learning new skills, strengthening an IP's innovation capacity includes changing attitudes and perceptions, developing a holistic view and learning to value the contributions of other stakeholders [184]. They continue to describe that an ability to adapt to change, recognising emerging opportunities, creating new ideas, being proactive and being future-focused are important considerations for stakeholders to have when considering an IP's capacity to innovate [184]. The advantage of the diversity among IP participants is that acknowledgement is given to existing local institutions and knowledge of the stakeholders involved [11]. This increases the platform's innovation capacity as it should build on existing knowledge and indigenous ideas [106], [138], [184].

In the context of I4ID, it is important to identify focus areas for the capability development of the marginalised stakeholders [11], [140], [142]. This can be supported by mapping the existing capabilities of the stakeholders [106]. For many marginalised stakeholder groups, learning and applying improved sector-related activities would greatly increase their capacity [22], [140]. In addition to this transfer of knowledge, introducing technologies which are new to the stakeholders' context may serve to increase their capacities in their sectors [166].

Capacity development of platform participants may include additional mechanisms to support the stakeholders in their own sector-related activities, such as mentoring and coaching, providing opportunity for experiential and shared learning, and establishing channels of information sharing [23], [106], [140]–[142], [171], [173].

Figure 23 depicts how improved access to resources and the strengthening of stakeholders' capabilities combine to develop the capacities of the platform's stakeholders [22], [166], [171]. Figure 23 uses the resource types described in Figure 22.
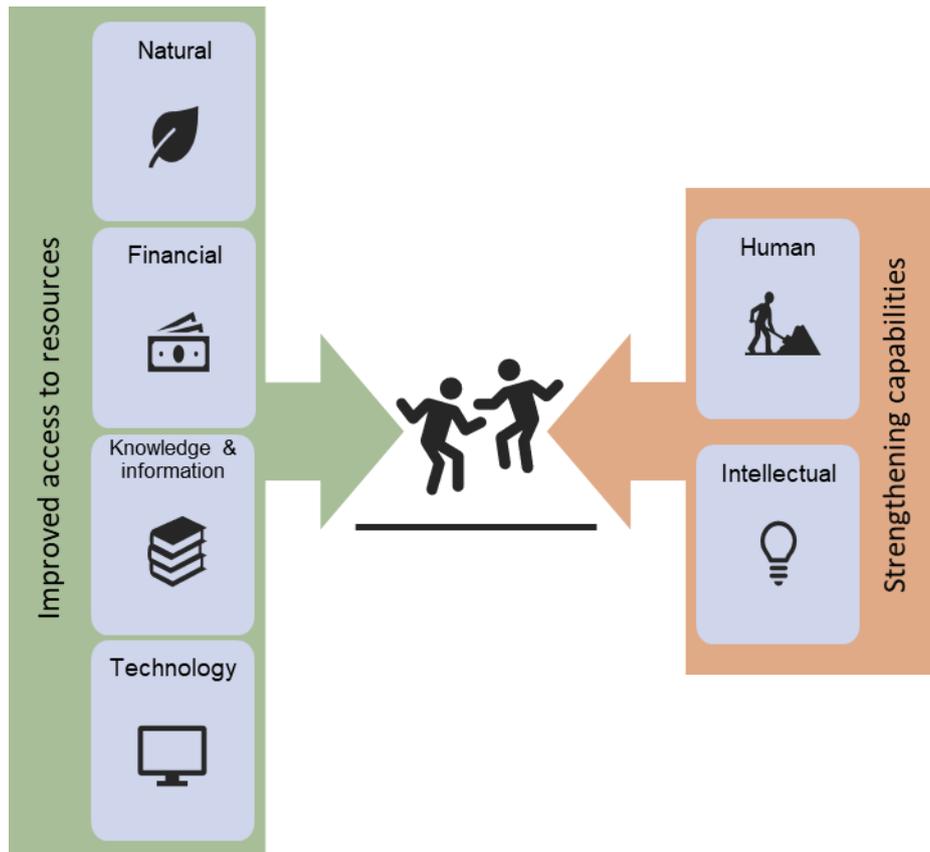
Figure 23: Capacity development of platform stakeholders

It has already been alluded to that efforts for capacity development should extend beyond the platform participants and focus on developing the capabilities of the stakeholder groups represented by the participants as well [141]. Additionally, caution must be exercised so as not to disempower the stakeholders by limiting their participation to problem identification or by ignoring the importance of sustainable platform outcomes [141], [175].

Strategic representation positively contributes to the innovation capacity of an IP [170], [172], although its innovation capacity is influenced by various other factors in addition to the capacities of its participants. A greater network of stakeholders allows the platform access to a larger and more diverse resource pool [171]. The platform's capacity can be strengthened by strategically coordinating the linking of stakeholders [168] to allow for increased knowledge diffusion within and across the platform boundaries [106], [165].

An IP may engage with stakeholders at various levels of society, thus strengthening its legitimacy at these levels [165]. For example, an IP formed around improving general health practices in the households of a local community might gain legitimacy from national government if interested parties within the National Department of Health (NDoH) are linked to the platform. This would constitute vertical linkages across levels [21].

Horizontal linkages across levels refers to the linking of stakeholders who operate at the same level of society with the platform [21]. This supports the involvement of communities and other stakeholder groups who are commonly marginalised as they are encouraged to be agents of their own change [168]. Additionally, horizontal linkages strengthen the implementation and dissemination of successful innovations [21].

Developing both horizontal and vertical linkages positions the IP as a voice for its beneficiaries; the IP's capacity allows its participants the opportunity to relay their opinions for change and information about their situations to even the highest levels of government [172]. The IP may gain exposure to policy environments which would empower the marginalised stakeholders to influence policy development [21], [139].

It is necessary to plan for the desired scaling of the platform interventions as this determines the capacity desired [174]. The IP literature suggests that the platform should start small with easily attainable goals, and continue to build on initial successes [138], [165]. This encourages trust in the platform's intentions and activities, which in turn raises awareness among other interested stakeholders [142], [161], [165]. This would contribute positively to the IP's legitimacy gained with stakeholders at higher societal levels.

From the discussion above, an IP's capacity may be described to have three contributing factors; namely, the availability of resources, the capacity of the platform participants and the size of the network of stakeholders (see Figure 24).
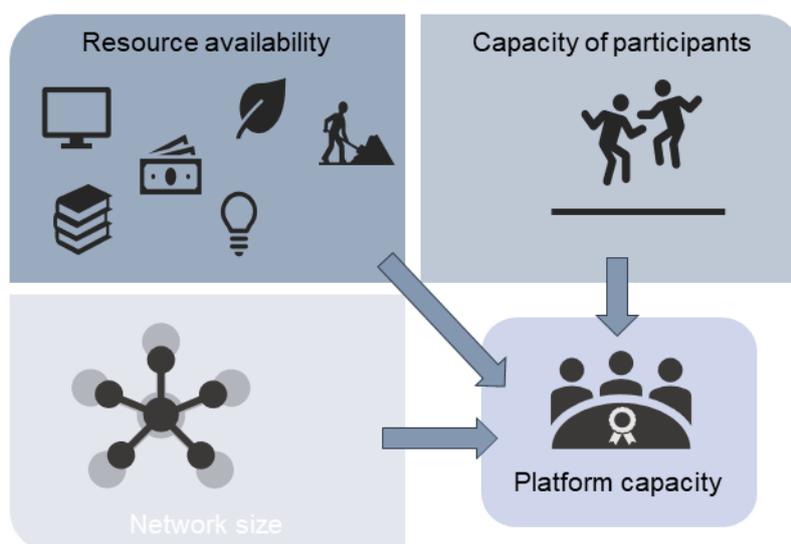
Figure 24: Contributing factors to the capacity of an IP

4.7.8 Monitoring, Evaluation and Feedback

This Practice of Engagement theme encompasses three aspects, namely, monitoring of platform activities, evaluation of platform activities and the feedback of results and insights.

4.7.8.1   Monitoring and evaluation of platform activities

Monitoring is to document changes and to keep a check on processes and activities [183]. Evaluation is to assess the indicators of the monitored activities against desired outcomes to judge performance [142]. Monitoring and evaluation are often grouped together because they support one another. Monitoring and evaluation of platform activities is regarded as a necessity for the development of an institutional memory of platform activities and achievements [173]. Monitoring and evaluation improve management of the platform and its intervention activities and allow the platform to promote larger-scale changes by keeping track of the platform's direction [183]. Power dynamics in the platform are better managed because the prioritisation of activities is being tracked [176]. Information about participants is gathered and used, ensuring that each participant is indeed fulfilling the roles and responsibilities allocated to them [138], [170].

Monitoring and evaluation should track the results as well as the impacts of the platform intervention activities [142], [170], to ensure that trust in the platform is built [116]. It helps stakeholders to understand what the platform has achieved and its value [173]. Additionally, weaknesses in the strategy are fed rapidly back into the platform for necessary adjustments to be made [139].

As an alternative to traditional approaches to monitoring and evaluation, IPs would do well to apply a participatory approach in their monitoring and evaluation activities [106], [138], [140], [142], [183]. This could even include self-monitoring and self-evaluation, where participants of the platform monitor and evaluate their own performance [139]. Through participatory monitoring and evaluation, marginalised stakeholders develop skills in developing arguments and negotiating [141].

Monitoring of platform activities should be an ongoing process [138], [170], [176], whereas the evaluation of monitored activities should be conducted with periodic repetition throughout the life of the IP [174]. Monitoring should use simple techniques which are easily understood by the participants [138], while these techniques must be flexible enough to adapt to the dynamic contexts around which IPs form [142]. The design of platform activities should include monitorable indicators of progress and performance, such as key objectives, to allow for effective monitoring of these activities [106]. The monitoring and evaluation of these activities must take into account the limitations present in the political, social, cultural and economic context [106], [138], and be mindful of the resources and time available [142]. These limitations may be used to develop a standardised set of monitoring parameters which are relevant to the context around which the platform is formed [138].

It is important to clearly define who is responsible for the monitoring and evaluation of the respective platform intervention activities, and platforms may opt to form monitoring and evaluation

committees [142], [168]. Results and insights must be communicated timeously and appropriately [106]; thus feedback of platform activities is equally as important a consideration.

A range of techniques for monitoring and evaluation emerged from the IP literature (see [106], [116], [142], [166], [173], [176], [183]). There are often distinctions made between the techniques for monitoring and the techniques for evaluation. These techniques are summarised in Figure 25.
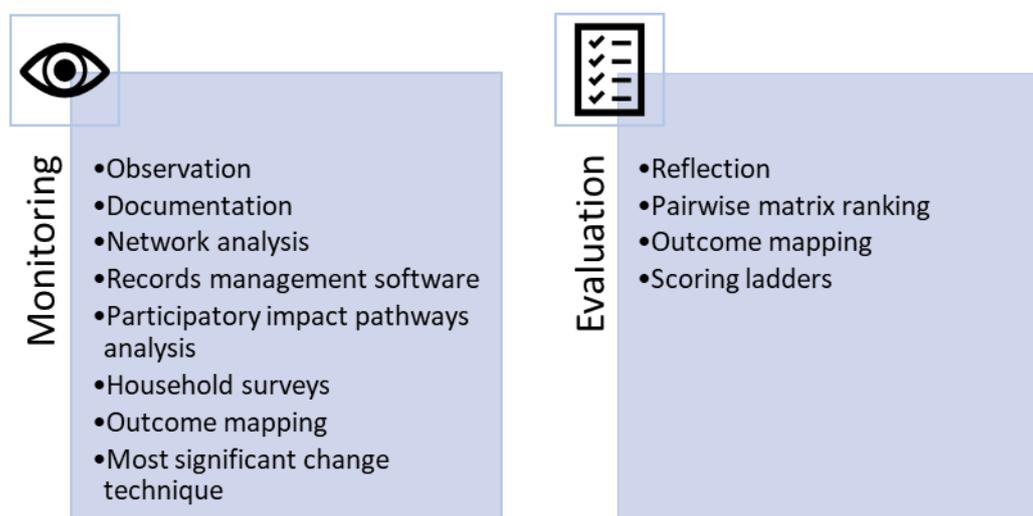
Figure 25: Different techniques used for monitoring and evaluation in IPs

4.7.8.2   *Feedback of platform activities*

Feedback is characterised by the rapid and ongoing relaying of information into the platform [138], [183]. It is driven by effective communication among platform participants and among the wider ecosystem of stakeholders [170]. Feedback is best achieved by participatory approaches where all platform participants discuss results and develop insights [138], [139], [142], [172]. IPs may use reflection meetings and feedback sessions to facilitate these discussions [165].

Feedback is important to maintain awareness of aspects of the platform's health, such as how the activities are performing [142] and whether alignment is being maintained [23]v. Lessons can be learnt from mistakes to inform future activities [163]. Feedback informs the development of sustainable and comprehensive solutions while directing any adaptations necessary to follow an improved innovation path [139], [142], [162], [165], [166], [170], [172]. It allows for ongoing and shared learning between the platform participants, and insights and lessons are disseminated to the wider ecosystem of stakeholders [140], [142], [172]. These new insights and adaptations are relayed back to the 'hands on the ground'–those stakeholders who are responsible for implementing the platform intervention activities [142].

Feedback must be transparent and honest, reporting on the positive as well as negative consequences of the platform activities [170], [172]. Platform participants will need to learn to embrace failure so as to counter any false reporting [163]. Additionally, accountability must be

exercised, and platform participants will have to take responsibility for the reported outcomes and its effects [172]. Ultimately, the platform must take responsibility for the actions, especially where failures have occurred, or expectations have not been met. This works towards increasing the trust of the stakeholders outside of the platform [170], [172].

Feedback should leverage the capacity of the platform to communicate profound insights and suggestions to stakeholders positioned at higher societal levels [142], [165], [172]. In this way, feedback empowers advocacy by the platform on behalf of its participants, which is an important consideration in the context of I4ID. An example is leveraging the capacity of the platform to make policy recommendation on behalf of the stakeholders [142].

Other common methods of disseminating the insights gained from feedback to the wider ecosystem of stakeholders is through report documents and publishing results and experiences in research journals [142], [163].

4.7.9 Visioning and planning

Visioning and planning describes developing the roadmap of the platform's intended outcomes and how they will be achieved [106], [170]. As in any partnership, visioning and planning is critical to the healthy functioning of an IP [166]. The theme is strongly supported by the feedback from monitoring and evaluation activities which allow for new insights and discoveries to direct the innovation path.

Visioning and planning incorporates the development of clear goals and objectives along with clear benefits [170]. In this way, it is critical to establishing and then maintaining alignment in the platform [161]. Defining the future steps which the platform plans to take directs the platform participants and gives external stakeholders insight into the platform's intentions [165], [170].

Ramos Castro and Swart [170] posit that visioning and planning are often participatory to an extent, where only the most highly motivated IP participants (innovation champions) are involved [170]. This may be due to the important role of leadership in visioning and planning activities [170]. However, IPs that seek to support I4ID may consider sharing the outcomes of visioning and planning activities with those platform participants who did not participate in these activities before implementation. These participants can then discuss the outcomes of the visioning and planning activities and give feedback. This allows all participants to have an input in guiding the platform's focus and direction; creating opportunities to develop their capacities in decision-making and planning and may serve to strengthen alignment within the platform.

Ramos Castro and Swart [170] suggest that visioning and planning should be present from the early phases of IP formation [170]. Lamers and colleagues [165] further suggest that it must be

present throughout the lifetime of the platform [165]. The focus in visioning and planning activities will shift regularly and as necessary due to the dynamic context around which IPs are formed [11].

Visioning and planning are of practical relevance to the scaling of IP activities and to resource procurement [106]. The planning of the activities should incorporate measurable indicators which can be monitored and evaluated [182], and trade-off analyses should be conducted before implementation of the activities [139].

4.7.10 Championing

The presence of innovation champions is regarded as a very important component of successful IPs [161], [178]. Howell and colleagues [189] describe innovation champions as those platform participants who contribute to the innovation process with noteworthy enthusiasm and apparent action throughout the critical stages of the process [189]. Championing can be exercised by many participants who take initiative in different ways and are able to operate autonomously, while still aligning with the platform's vision [163], [178]. Innovation champions typically step up and lead in their own spheres of operation [163], [179]. They leverage their own capacity, such as a personal reputation, in these spheres, to promote awareness of platform activities, thus increasing the interest of other stakeholders to participate [161], [172], [179]. The presence of innovation champions reduces the need for knowledge and resources external to the platform [162].

It is up to the participants themselves to identify which functions they can champion [142], and they coordinate the actions around these functions amongst themselves [171]. Despite it being common and desirable for participants to take up championing in an informal fashion, some platform participants may be appointed to fulfil a leadership role around a specific set of platform functions, whereby their championing role is formal [161], [165].

From the IP literature, motivations for championing include participants' desire to change existing situations and solve community problems [142], [162], scarcity of resources [142], ego [142], personal development and learning [142], [162], and a desire to develop relationships across different societal levels [162]. Innovation champions are well suited to participate in the platform's visioning and planning activities [170]. The rewards for the presence of innovation champions in an IP may be in the form of resource procurement, innovation implementation and maintaining a collaborative atmosphere [161], [165], [169].

Klerkx and colleagues [178] identified four types of innovation champions commonly present in IPs, though there may be more than one type present in any platform at a given time. They identified the power champion, technology champion, process champion and network champion [178]. The power champion rallies support for the platform by exerting social and political effort [178]. Power champions may have limited involvement with platform activities [178]. The technology champion advocates the adoption of technologies by the sector [178]. The process

champion organises the platform activities, serving as a facilitator of innovation [178]. Finally, the network champion links relevant stakeholders across different levels to the platform [178].

4.7.11 Shared learning

The development of stakeholders' capacities through the participatory nature of IPs is captured by the shared learning theme. Shared learning should be a marker of the I4ID philosophy. Shared learning is powered by the exchange of knowledge, information, skills, experiences and ideas between platform participants [20], [139], [142], [162], [169]–[171], [179]. Shared learning further includes an exchange of these learning components between platform participants and stakeholders in the wider ecosystem [142], [169].

Shared learning should be nurtured by facilitating stakeholder interactions [142], [165] and will be strengthened by a safe and non-competitive learning environment, where the constructive relaying of learning components can happen [106]. Such an environment is conducive to the development of respect and appreciation for the capacities and roles of the different platform participants [185]. Communication is critical to shared learning, and the presence of informal communication channels should not be underestimated for creating an environment conducive to shared learning [141], [162], [170].

Knowledge and experiences gained from the implementation of platform intervention activities are important to guide future activities and make better-informed decisions [11]. The documenting of processes and publishing of results aids the dissemination of the information and promotes shared learning [20]. Participatory monitoring and evaluation further strengthen shared learning as participants track processes and activities and determine the reasons for successes and shortcomings [140]. Feedback of the results of monitoring and evaluation activities is important for shared learning [106], [170]. Experimentation is another popular means to develop insights which are shared and which guide future activities [179].

Shared learning promotes the development of new ideas [169]. The ideas are developed into intervention activities with guidance from experts willing to share their knowledge [142]. Shared learning serves to reduce uncertainties around the context of the challenges the platform hopes to address [11]. It is also beneficial to inform suggestions for policy development [180]. Additionally, transparency is promoted by the sharing of information and experiences.

Malley and colleagues [142] differentiate between three types of learning present in IPs; individual learning, group learning and organisational learning [142]. The participants of the IP may strongly influence what shared learning looks like as they decide what to learn, how to learn, with whom to learn, and how to disseminate knowledge [172].

4.7.12 Transparency

Transparency is another theme of engagement that strongly reflects an IP's motives for intervention in the challenge landscape. For platforms underlined by an I4ID philosophy, transparency is very important to ensure that the platform can be held accountable for its activities involving marginalised communities. It is important for the beneficiaries and commonly marginalised stakeholders to be aware of how the platform plans to achieve its goals and what their role is in achieving these goals [166]. Therefore, transparency influences the functioning of an IP [170].

Transparency is possibly most notable in communications with stakeholders [170]. It is the flow of information between and across the IP borders which determines the level of transparency of the platform [173].

The IP controls the level of transparency with which it handles its dealings in the information flow across its borders; what the platform shares with stakeholders in the wider ecosystem. This information includes results of experiments, survey outcomes and the positive and negative impacts of intervention activities [106], [139], [163], [165], [170], [172]. This information raises awareness of the platform and its dealings, potentially increasing the platform's access to resources as stakeholders begin to trust the platform more [106], [161], [165], [170].

Additionally, transparency can be promoted or hindered by individual participants in the platform who control the information flow between the platform boundaries. This includes personal experiences and insights gained [106], [139], [163], [165], [170], [172]. The reasons for representation of each participant must be communicated and understood while non-traditional participants are informed of their importance and potential in the innovation process [166], [172]. This promotes a healthy partnership culture where all participants are respected and treated as fundamental to the platform's functioning. This personal transparency includes the participants sharing their aspirations and feelings of frustration and self-interest [139]. Transparency within the platform borders can be promoted by participatory monitoring and evaluation activities, supplemented by participatory feedback and reporting [139], [142], [170].

Exercising transparency is beneficial for dealing with disagreements and conflicts within and around the platform [139]. Additionally, it allows for clarity in the planning and visioning of the platform, whereby all necessary parties are aware of how the platform intends to achieve its goals [175].

4.7.13 Action

This theme of engagement encompasses the importance of sustaining stakeholder interest by translating vision into tangible action [166], [170]. Action gives the platform something to show for all its efforts. IP literature posits that activities are better understood when their successes can be

seen [106], [161], [165]. Action is realised when planning and visioning are focused and processes to implement the planned actions begin [161], [170]. Successful IPs commonly have a learn-by-doing approach [106]; participants are encouraged to quickly start doing something, trying things out, and acting [106]. This may be in the form of pilot activities and experiments [141], [170]. Continuous monitoring, evaluation and feedback of the activities inform the process of formulating the next steps [165]. In this way, the platform learns from the successes and failures of its actions.

The learn-by-doing approach should still be complemented with strategic planning of activities before implementation [165]. The timing of implementing intervention activities must be appropriate [165]. Planning of activities should include an appropriate strategy for participant involvement [165]. Actions should begin where conditions are most conducive, such as where local community involvement is most likely [170]. To this end, the most relevant and motivated participants should be targeted for the activities [165].

It is important for platform activities to move towards meeting the needs and expectations of the intended beneficiaries while aligning with the interests of other stakeholders [11], [139], [162]. As such, trade-off analyses should precede implementation [139]. The tasks and activities should be identified by the participants themselves to best match participants' interests and capacities to the platform's current vision and needs [165]. Again, the role of participatory monitoring, evaluation and feedback of platform activities allows for the activities to be reformulated and improved as necessary [106], [139]. The implementation of planned actions is supported by establishing the roles of participants and ensuring that the benefits of the actions are quickly apparent [165].

Action must not be limited to activities that promote shared learning [168]. Actions should lobby for change and serve as drivers of tangible social and economic benefits [22], [168]. Action promotes the development of new institutions, making change possible [169]. It drives the wider dissemination of innovations, and that of new knowledge and experiences [161], [168].

4.7.14 Gender dynamics

The gender dynamics theme is mentioned in only one publication in the dataset of IP literature analysed in the SLR. This publication was authored by Mulema and colleagues [181]. In the context of I4ID, gender dynamics is a very important consideration when we acknowledge that marginalisation is not limited to an entire stakeholder group, like a local community, but that there may be members within the stakeholder group who are themselves marginalised by the group (see [190]). It is common for women to be regarded as having a lower social status in developing countries.

Thus, I4ID looks to address the institutions that lead to the marginalisation of stakeholders due to gender by strategic representation of these stakeholders in the IP. It is necessary to analyse and understand the gender dynamics which exist within local communities and other stakeholder

groups before these institutions can be addressed [181]. Platform participants need to understand cultural norms around the roles of men and women, including domestic duties, social status, and access to and control over resources [181].

To represent the interests of women, there must be women from the stakeholder group serving as participants in the platform [181]. As women engage with other platform participants, the power dynamics which exist need to be carefully facilitated to position these women as respected members of the platform who are given a voice [181].

4.7.15 Conflict management

Conflict management is a necessary engagement practice in IPs to mitigate potential issues, misunderstandings and conflicts [166]. Conflict management is about addressing power plays as they arise to maintain alignment and focus collective action on the platform participants' common interests [23], [161]. Participants are reminded that collaboration is in their best interest [23].

Kefasi and colleagues [139] posit that formal conflict resolution mechanisms should be in place, and that these mechanisms should be decided upon beforehand [139]. IP literature continues to appoint the facilitator to the role of managing conflicts which arise within the platform [23], [161]. The facilitator must serve as a neutral mediator between stakeholders with different interests [23].

An awareness of the power dynamics present in and around an IP is necessary to recognise potential issues that may lead to conflicts [141], [166]. There is an aspect of negotiation within conflict management to maintain alignment of stakeholders, while stakeholders must be willing to compromise [161]. It would benefit the collaborative atmosphere significantly if stakeholders and platform participants can learn to compartmentalise issues that are unrelated to the platform activities, ensuring that focus on the common interests is sustained [161].

4.7.16 Facilitation

The role of the platform facilitator is regarded by researchers in the IP landscape as critical to the healthy functioning of the platform [140], [166], [167]. Facilitation is regarded as a formal leadership position in an IP which may be filled by a trustworthy individual or small team [161], [162]. As an alternative to controlling the participants of an IP, facilitators act as an intermediary for the autonomous interactions between platform participants as they guide conversations and manage dialogues to establish and maintain the alignment of participants [23], [116], [163], [174]. Due to the dynamics of the innovation process, facilitators need to be flexible and adaptive; able to respond to the dynamics of co-evolution of innovation [23], [116]. The role of platform facilitator may itself change hands over time as different individuals or teams are appointed to the role to replace previous facilitators [11].

The platform facilitator must have sufficient experience to have developed management and people skills, which are important for the governance of the platform [140], [167]. The facilitator must be a neutral leader in the platform to effectively manage the dynamics of participation and ensure that participation is evenly distributed, especially considering the presence of champions and 'normal' participants [178]. The facilitator must then allow for the active involvement of stakeholders in the development of their own capacities and that of the platform [138], [140]. It is the facilitator's responsibility to monitor and manage power dynamics in the platform to ensure that a climate of collaboration and mutual respect is maintained among platform participants [161], [176]. The facilitator must be sensitive to cultural and gender dynamics present in the platform, assisting weaker participants to navigate the forces at work in a participatory approach to innovation [181].

Communication is they key driver of facilitation as the facilitator looks to exercise transparency when coordinating interactions between participants and mediating negotiations and conflicts [116], [140], [166], [174]. The facilitator has an important role in identifying, engaging and linking stakeholders as prospective participants to the platform to extend the platform's network of stakeholders in the wider ecosystem [116], [161], [165], [168]. The facilitator is further tasked with managing the prioritisation of tasks and activities and to maintain the focus on the collective goal [23]. In this way, facilitation has a responsibility to intentionally drive the scaling up and out of the platform intervention activities and innovation solutions [168].

Figure 26 shows the presence of the platform facilitator (in red) among the participant interactions. Some key responsibilities of the platform facilitator are also given in Figure 26 [23], [116], [163], [166], [168], [174], [178].
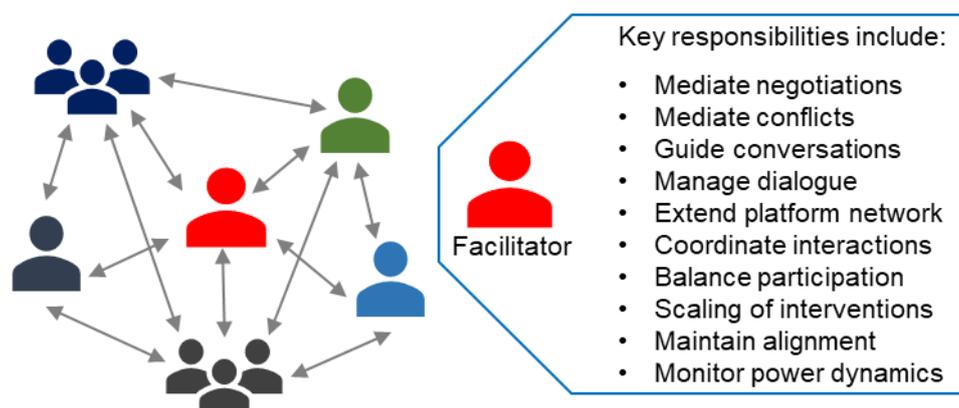
Figure 26: Facilitator presence in an IP and some key responsibilities of the role

4.8 Concluding remarks: Chapter 4

The systematic literature review sought to identify appropriate literature positioned at the intersection of the fields of IPs, I4ID and stakeholder engagement. A document search of the

Scopus database using carefully constructed search strings returned 108 results. A preliminary screening of the results for language, duplication, relevance and full-text availability reduced the count to 52 documents. The remaining documents were tested against inclusion criteria designed to ensure the most appropriate literature was identified for analysis. This process finally brought 28 peer-reviewed publications and an additional 11 grey literature documents to the fore. Subsequently, bibliometric and content analyses were conducted.

A significant portion of the literature was positioned within the innovation systems (IS) paradigm, the agricultural innovation systems (AIS) approach being most prominent. This presents a gap for the use of a new perspective; the innovation ecosystem perspective. This perspective builds on the traditional IS perspective [115] and provides a useful lens for investigating stakeholder engagement in IPs. The ecosystem perspective highlights the interconnected nature of stakeholders in the innovation process [24], [98]. It is useful to describe the evolutionary nature of stakeholder networks [24], [98].

Only two publications considered IPs within the context of healthcare. This provides yet another opportunity for the research to contribute to the IP body of knowledge, broadening its multidisciplinary scope. Also, the literature presented very little focus on the engagement practices of the stakeholders in IPs. This further encourages this research to develop a clearer understanding of the concepts related to stakeholder engagement within this context.

From the documentary analysis 16 fundamental themes emerged related to stakeholder engagement in the context of IPs. The themes have been called 'practices of engagement' (PoE). The themes capture various engagement practices leveraged by stakeholders when participating in the partnership approach to innovation co-creation. The themes offer insight into the dynamics of stakeholder interactions, such as power imbalances and conflict. Several interaction mechanisms have emerged among the themes, including communication and facilitation. The PoE themes serve as handles to understand the complexities associated with interactions between stakeholders. Associated with each engagement theme are many engagement mechanisms at work with several intended benefits for an engagement activity.

The next chapter explores these engagement mechanisms and their purpose and an inventory of these is compiled. The next chapter also reports on the processes and results of the preliminary evaluation of the research.

Chapter 5: Inventory framework and preliminary evaluation

Chapter 5 presents an inventory of several engagement mechanisms and their intended benefits for engagement activities. These have been grouped according to each practices of engagement (PoE) theme. The engagement mechanisms emerged from the documentary analysis of primary publications. The chapter continues to report on the start of the progressive approach to evaluating the research. The preliminary evaluation comprised a theoretical case study and one subject matter interview. The outcome of these proved valuable in guiding the research towards the construction of the preliminary stakeholder engagement framework.

The evaluation of the inventory via the case study was presented at the 2019 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC) in Sophia Antipolis, France [191]. The conference paper was published on the IEEE Xplore digital library on 12 August 2019.

Chapter outcomes	1. Describe the concept of engagement mechanisms
	2. Introduce the inventory framework of engagement mechanisms
	3. Describe the preliminary evaluation approach
	4. Present the preliminary theoretical case study and results
	5. Discuss the preliminary semi-structured interview and results
	6. Report on findings from the case study and interview
	7. Describe the screening of inventory items for a conceptual framework

5.1 Engagement mechanisms and their benefits to IPs

During the analysis of the primary publications, special attention was given to the 'how' and the 'why' of stakeholder engagement in the context of IPs. This means that when authors described an instance of engagement, the nature of the interaction and the mechanisms used to facilitate the engagement of stakeholders were noted. The analysis continued to identify the intended purpose for each interaction mechanism and its benefits for the IP's functioning, where these were provided in the text. By categorising these according to the respective engagement themes, the role that each theme plays in cultivating effective stakeholder engagement in IPs becomes apparent. The function of each PoE theme has already been introduced in Table 20 of Section 4.6, and discussed at length in Section 4.7.

An inventory of mechanisms for interactions between stakeholders and other engagement practices is given in Appendix D. These are grouped according to the individual PoE themes, along with their intended role in strengthening the IP.

The dataset of primary publications covers a range of IPs with different purposes and operating within different contexts. The authors of the publications adopted a variety of different approaches when analysing IPs, with different research objectives in mind. Analysing the insights of these

authors develops a deeper understanding of the significance of stakeholder engagement mechanisms in different contexts and even at different stages of an IP's life cycle.

The engagement mechanisms, their purpose and benefit to a functioning IP provide the theoretical foundation for the development of a conceptual framework for stakeholder engagement.

5.2   Additional data gathering and preliminary evaluation of findings

Section 2.8 introduced the progressive evaluation approach followed in this research to present a valid and reliable research output. Triangulation was adopted to guide this process, whereby a variety of different data gathering methodologies corroborate the propositions developed from the analysis of the data [53], [78].

The progressive approach to evaluation began with a preliminary evaluation of the PoE themes. The preliminary evaluation had two components: (1) a case study to assess the confirmability of the identified PoE themes and to provide additional insight into the role of stakeholder engagement in an IP; and (2) a semi-structured interview to further assess the confirmability of the engagement themes, here considering their appropriateness to the South African health context. The case study focuses on the engagement and empowerment of economically and socially marginalised stakeholders through their participation in a community network and health interventions. The interview participant has managed community health interventions in the South African health context where these interventions aim to engage and empower economically marginalised stakeholders.

This first part of the evaluation considers the credibility of the research output. Both the case study and the interview additionally serve to assess the completeness and the applicability of the engagement practices. The case study and interview are reported in the sections that follow.

5.3   The case of the Safe Water and AIDS Project (SWAP)

A documentary analysis of case literature was performed for this case study. The purpose was to evaluate the confirmability of the PoE themes by mapping them against the instances of engagement reported in the case literature. The case study provided an opportunity for valuable insight to be gained into stakeholder engagement in IPs.

The Safe Water and AIDS Project (SWAP) was selected as an appropriate case study to inform the research. The case is located in the health context within a developing country, while the interventions promote a participatory approach that aligns with the I4ID philosophy. Importantly, enough case literature was available to inform the research and included research publications of

SWAP intervention activities, the organisation's own annual reports and case literature produced by the Social Innovation in Health Initiative (SIHI)[6].

5.3.1 Introducing the Safe Water and AIDS Project

5.3.1.1   *Background to the case*

The Safe Water and AIDS Project (SWAP) is a non-governmental organisation (NGO) focusing on the improvement of primary healthcare practices and the empowerment of marginalised community members in western Kenya's Nyanza province [192]. SWAP uses I4ID practices to operate an inclusive empowerment initiative for marginalised women living with HIV [190]. The SWAP initiative is known to have strengthened the uptake of public health interventions in households of the target communities [193]. The organisation facilitates partnerships with a variety of stakeholders, including national government, research organisations, community support groups and community leaders, to ensure the sustainability of the intervention activities [190], [192].

Nyanza province has Kenya's highest incidences of HIV and infant mortality [192], [194]. Poor water quality and inadequate access to sanitation aggravate the effects of diarrhoea and poor general health on the communities [190], [194]. Providing adequate access to the necessary health products and services remains a challenge faced by the Kenyan government [194].

Those people, especially women, who are living with HIV, are marginalised by members of their community. They are perceived as a burden [190]. This perception makes it difficult for these women to be economically active and earn a sustainable income. Through its social entrepreneurship initiative, SWAP looks to improve the poor health of the communities and address the marginalisation of women living with HIV.

5.3.1.2   *Community health networks*

The SWAP initiative focuses on developing a community health network that educates the community on healthy living practices. Through this network they empower community health promoters (CHPs) who become economically self-sustaining through the marketing and selling of hygiene and other health products to the community [190].

SWAP first strategically identifies women living with HIV, who already belong to community support groups, as potential participants in the network. The women are recruited and trained as CHPs by SWAP, the facilitating organisation. Trained CHPs visit households in their community to educate the residents on improved health practices. The CHPs earn an income from selling health-

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[6] www.socialinnovationinhealth.org

promoting products to these households and educating them on the correct use and benefits of these products [190].

5.3.1.3 Interventions to support community health and empower stakeholders

The products sold include water treatment products, soap, insecticide-treated bed nets, condoms, contraceptives and sanitary pads [193], [195]. The products are distributed to the CHPs on credit at wholesale cost. The CHPs sell the products at retail price. The CHPs report to strategically located community centres to settle their credit and receive new stock. The CHPs keep all profits made from selling the hygiene and health products [190]. Most of the products must be replaced after they have been used, ensuring that there is always demand for them [190].

SWAP operates community centres, known as Jamii Centres, which serve as the central operating location for the intervention activities in each community [190]. The SWAP project officer at each Jamii Centre is responsible for ongoing mentoring and additional training for the CHPs [190].

5.3.1.4 Strategic partnerships

SWAP has entered into partnerships with several stakeholders to support its intervention activities and strengthen the network. A partnership with Kenya's Ministry of Health aligns the intervention activities with the national healthcare strategy [190]. Through this partnership, land was made available for the building of Jamii Centres [190]. Specialised training is provided to the CHPs and SWAP employees by various private partners [190], [192]. Research partnerships enable the review and informed improvement of intervention activities and a stable income for the platform through research publications [195]. Donor funding still forms a large part of SWAP's revenue streams and donor organisations are important stakeholders in the network [196].

It is apparent from the case literature that the intervention activities cannot be successful without the strategic involvement of key stakeholder groups. This partnership-centred approach, and the alignment of the intervention activities with the needs of the marginalised communities, qualifies the SWAP initiative as an appropriate case study to inform the research. The I4ID philosophy which underpins the IP is apparent from the inclusion of marginalised community members as key participants in the platform's intervention activities.

5.3.2 Investigating stakeholder engagement in SWAP

The documentary analysis of the case literature looked to first identify the relevant stakeholders before mapping their level of involvement in the network. Thereafter, the interactions between stakeholder groups were identified. This was all necessary before the PoE themes could be evaluated from the case study. An ecosystems perspective was used to analyse the SWAP initiative to investigate the nature of interactions and relationships between stakeholders in the network. The ecosystems perspective highlights the interconnectedness of stakeholders and the evolution of the network with time.

5.3.2.1   Mapping stakeholders and their involvement in the network

In the analysis, focus was on the stakeholders involved in the innovation process to investigate the interactions between them. There are 14 stakeholders identifiable in the case literature. These are given in Figure 27.
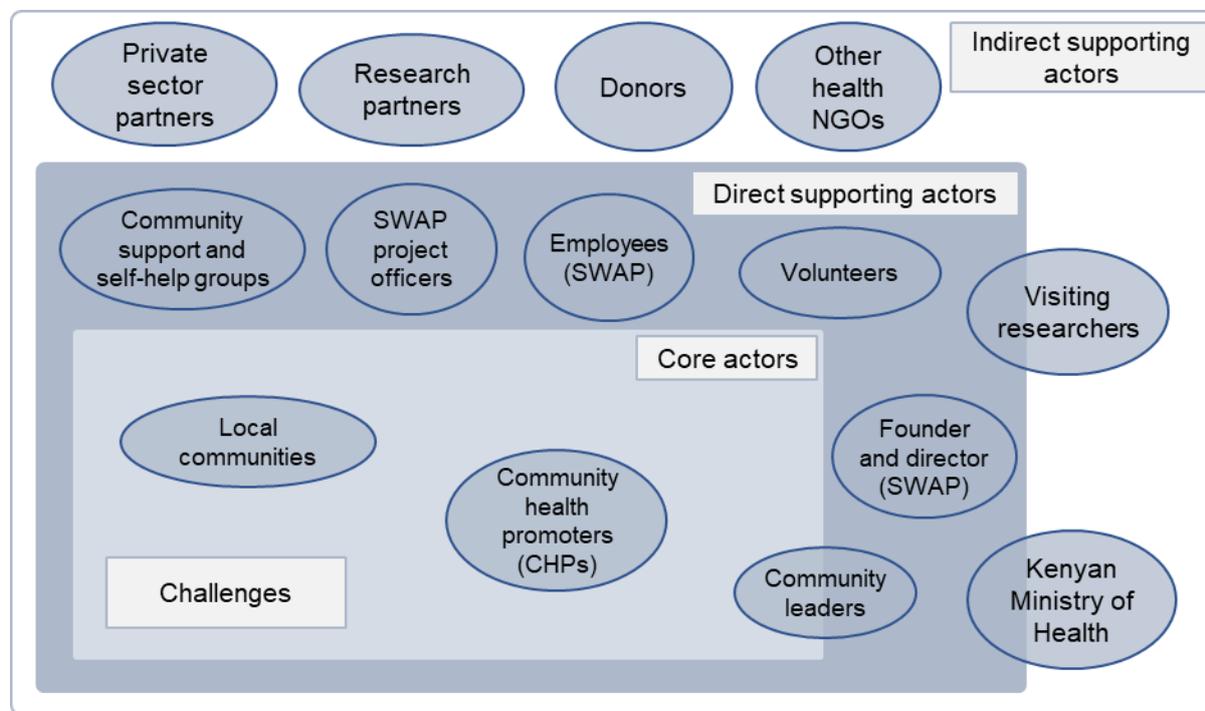
Figure 27: Stakeholder groups and their position in the network

The level of stakeholder involvement in intervention activities was mapped around the challenge landscape. Stakeholders were categorised according to three contributor types; core actors, direct supporting actors and indirect supporting actors. Figure 27 above presents the output of the mapping process.

Core actors are directly involved with the intervention activities; they are responsible for executing actions in the field. Those stakeholders who are not directly involved in executing intervention activities but directly support these intervention activities (e.g. managing the Jamii Centres and restocking the CHPs) are direct supporting actors. Indirect supporting actors are further removed, providing support services to the network with no involvement in either the intervention activities or their support activities.

In Figure 27, the core actors are the CHPs, who distribute health promoting products to households and educate them in their communities on healthy living practices. The community members who benefit from the intervention activities are also core actors. The community leaders are both core actors and direct supporting actors; core actors because they too benefit from the intervention activities, and direct supporting actors because they are the gatekeepers for the launch of a project in their communities.

The direct supporting actors are those stakeholders who are affiliated with the facilitating organisation, SWAP, including SWAP's founder and director, project officers and employees. SWAP also has volunteers, and these are included as direct supporting actors. Identifying potential CHPs from members of existing community support groups makes these groups an important part of the platform's strategy, directly supporting the intervention activities.

Indirect supporting actors contribute to the capacity development of the entire platform by supplementing the platform and its activities with the necessary training, funding and links to national government, among other things. The case literature mentions various private sector partners, research partners, donors and other health NGOs who adopt these roles in the network.

Visiting researchers are positioned as both direct and indirect supporting actors; indirect supporting actors due to their link with the platform's research partners, and direct supporting actors because their presence at the facilitating organisation directly supports the intervention activities through the monitoring and evaluation of platform activities and advisory feedback. The facilitating organisation's close relationship with the national Ministry of Health (MoH) allows for visibility and legitimacy of the platform's activities. This develops the platform's capacity, positioning the MoH as an indirect supporting actor. The MoH is also positioned as a direct supporting actor because of its contribution of land for the Jamii community centres. These community centres are central to supporting the CHPs and the intervention activities.

5.3.2.2   *Mapping stakeholder interactions in the network*

The links between stakeholders and their interactions became apparent after grouping stakeholders from similar contexts. The purpose each stakeholder group serves in the platform also became apparent. In Figure 28 these interactions are described visually; arrows indicate the presence of interactions between different stakeholder groups, the dashed line shows the boundary of the network of diverse stakeholder groups interacting to achieving a common set of goals [11], and interactions with the intervention activities are indicated by arrows which cross this boundary. The interactions are labelled A to H for reference in the discussion.
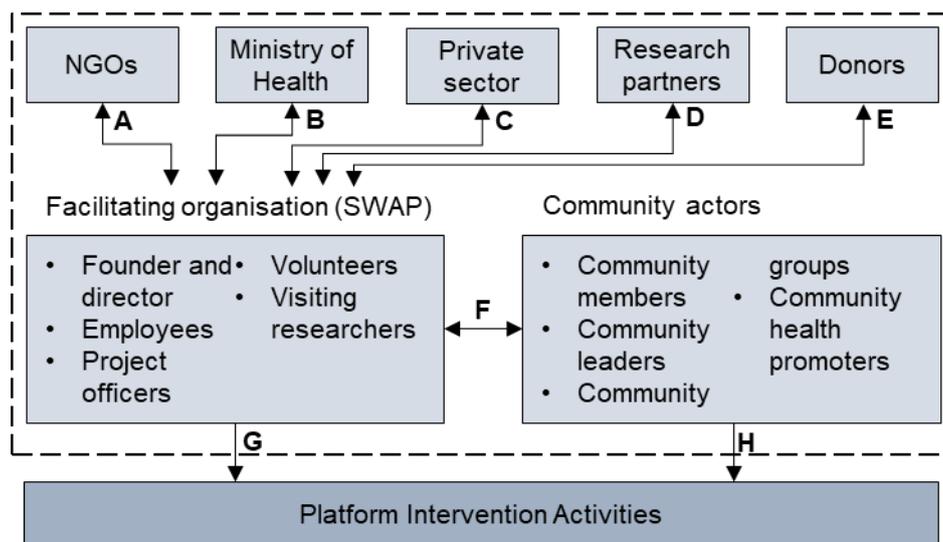
Figure 28: Interactions between stakeholder groups

In Figure 28, the stakeholders who interact with the platform only through the facilitating organisation (SWAP) are indirect supporting actors. These are interactions A, B, C, D and E. The documentary analysis did not reveal any direct interactions between these stakeholder groups and the platform intervention activities. There is also no evidence from the documentary analysis to suggest that direct interactions exist between these stakeholders.

The inclusion of the community actors is directly facilitated by SWAP (interaction F). The network engages the challenge landscape via the intervention activities through the facilitating organisation (interaction G) and the community actors (interaction H).

5.3.3 Using the PoE themes to describe stakeholder engagement

It is necessary to understand how the PoE themes can be used to inform our understanding of stakeholder engagement in the context of IPs. Considering this, the PoE concepts which emerged from the IP literature were applied to the interactions in Figure 28 to describe the nature and purpose of the interactions. This helped to establish the confirmability, applicability and completeness of the list of concepts.

5.3.3.1   Preparing the PoE themes for use in the case study

There were 16 PoE themes that emerged from the analysis of the primary publications. Each theme emerged with various interaction and engagement mechanisms which together have an important role in facilitating effective engagement with stakeholders in an IP. However, the large amount of information captured in the inventory of engagement themes (see Appendix D) posed a challenge to apply alongside the findings of the documentary analysis of case literature. To overcome this challenge and to facilitate an informed assessment of the themes through the case study, modifications were made to the inventory of engagement themes to prepare them for use.

The PoE themes were regrouped to encompass 20 themes as opposed to the original 16 themes. This made the insight captured by individual themes more manageable and better described a theme's relevance to a platform. The regrouped themes are displayed in Figure 29.
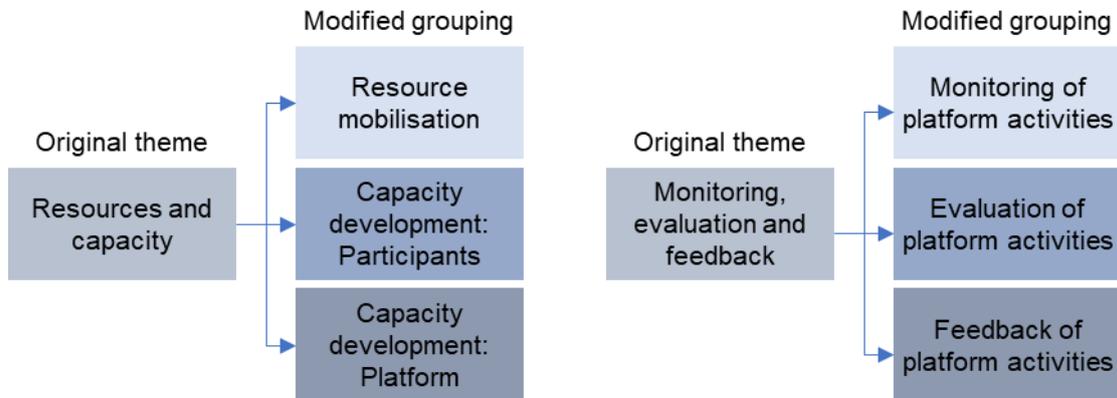
Figure 29: Regrouping of engagement themes for the case study application

Further modifications included translating the insights contained in the inventory of engagement themes, that is, the various engagement mechanisms and their purpose and benefit to a functioning IP, into a more manageable format. The statements as they appear in the inventory (see Appendix D) were translated into considerations. These considerations are significantly shorter statements, usually one to two words, that capture the central idea of each statement as it appears in the inventory. The documentary analysis of the case literature included mapping the presence of these considerations in the SWAP network and initiatives. An extract of the translation of insights into underlying considerations for the communication theme is shown in Figure 30 as an example.
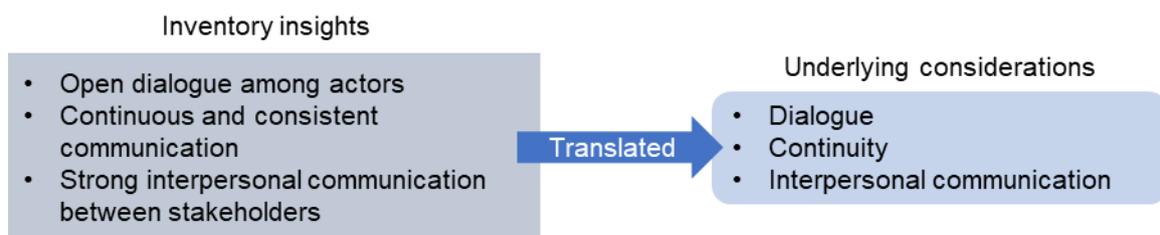
Figure 30: Translating insights into underlying considerations: Communication

5.3.3.2 Applying the modified PoE themes

Of the 20 PoE themes identified, 19 themes could be applied to describe the stakeholder interactions of the SWAP network. The case literature made no mention of how the platform deals with conflict among participants and the conflict management concept was consequently excluded from the analysis.

Table 21 shows how the PoE themes can be used to describe the stakeholder interactions based on the case literature. Some interactions are described by a combination of PoE themes.

Consequently, the themes often apply to multiple interactions. Communication and capacity development are among the most common themes. This relates to the importance of communication in any partnership structure and to the network's focus on developing the capacities of local communities through inclusive participatory practices.

Table 21: How the PoE themes describe stakeholder engagement in the SWAP network

Practices of engagement themes	Stakeholder interactions as in Figure 28							
	A	B	C	D	E	F	G	H
Action								X
Alignment		X						
Capacity development: Participants			X			X		X
Capacity development: Platform	X	X	X					
Championing								X
Communication	X	X	X	X		X		X
Conflict management								
Evaluation of platform activities				X			X	
Facilitation						X	X	
Feedback of platform activities	X	X		X		X		
Managing gender dynamics						X		
Managing power dynamics						X		
Monitoring of platform activities				X			X	X
Participation								X
Resource mobilisation			X	X	X		X	X
Shared learning						X		
Strategic representation							X	
Transparency						X		
Trust building						X		
Visioning and planning						X	X	

The completeness and confirmability of individual PoE themes was assessed using the considerations underlying the themes. Where the case literature contained information related to a specific consideration underlying a PoE concept, this consideration was noted. Considerations were added if they emerged in the documentary analysis of the case literature and were not found in the inventory of engagement themes. The addition of new considerations proves the value of triangulation for qualitative research because despite the multidisciplinary nature of the primary publications, there was still more insight to be gained from other research methods. The considerations per PoE theme relevant to the SWAP network are presented in Appendix E.

Not all the underlying considerations identified from the IP literature appeared in the case literature and it would be beneficial to apply additional case studies to understand how the considerations excluded in this instance may be applied. Additional case studies may further identify missing considerations and present an even deeper understanding of the role of stakeholder engagement in IPs. However, the use of semi-structured interviews with subject matter experts will contribute towards this purpose of an improved understanding.

Those considerations which are found not to be applicable in practice, especially within the South African health context, should be excluded from the final framework. The results of investigating the confirmability, applicability and completeness of the underlying considerations of the PoE themes is discussed next.

5.3.4 Findings from the case study

5.3.4.1 Lessons from the SWAP network
The SWAP network and its innovative approach towards addressing healthcare challenges in rural communities while empowering marginalised women offers many lessons for participatory development initiatives.

The first lesson is that, to truly empower individuals, one must recognise their human value and potential. Empowerment is offering opportunities to people to help themselves, where they play a vital part in the improvement of their lives. This means these individuals take responsibility for the improvement of their situation. The SWAP network's approach to restocking the CHPs requires these women to return to the Jamii centres and pay for the stock they have sold, before collecting new stock. This is the responsibility of the CHPs themselves. The CHPs are responsible for the amount of stock they sell, and hence also the amount of money they make, as they need to display initiative in engaging households in their community. In this way, the women are empowered by the opportunity for them to take responsibility for the implementation of the intervention activities.

The case study teaches that empowerment does not focus only on an improved economic position; it also has social and psychological components. We see this in the SWAP case where the women,

once ostracised and believed to be a burden, are recognised by the community leaders for their important contributions. These women display improved self-confidence because of their pride in what they do for their community.

In the conceptual review of stakeholder engagement and participation (see Section 3.3), the importance of assigning the appropriate level of participation to stakeholders became apparent [47]. The mapping of the network of SWAP stakeholders around the challenge landscape revealed this in the SWAP network, where different stakeholders had different levels of participation according to the role they had in the network.

5.3.4.2   Confirmability, applicability and comprehensiveness of the PoE themes

The exploratory use of 19 PoE themes to describe stakeholder interactions in the SWAP network hints at a comprehensive list of PoE themes which can successfully describe the interactions present in a collaborative network of diverse stakeholders. All the stakeholder interactions identified in the documentary analysis of case literature could be described by at least one PoE theme. Multiple themes were often used to describe a single interaction. This may allude to complexity being characteristic of stakeholder interactions in IPs.

The absence of the conflict management theme does not disqualify it. The theme emerged from the analysis of the primary publications as a very important consideration for IPs underpinned by an I4ID philosophy [138], [166], [169]. Rather, its absence may indicate bias in the case literature which excludes the challenges faced by the network to engage and manage individual participants. The influence of bias on the research may be diminished using multiple research methods for data acquisition as prescribed by the triangulation approach adopted in this research.

The applicability of the considerations underlying the PoE themes indicates how accurately the themes were formulated to describe stakeholder interactions. Although many considerations were not relevant to this case, this does not necessarily render these considerations inaccurate or unimportant. This may only be determined through additional evaluation of the themes. Many new considerations emerged from the documentary analysis of the case literature. While this is in line with the grounded theory approach [60], [64], it should be remembered that these considerations may be relevant only to the context of the SWAP network, with limited generalisability.

The underlying considerations accurately described the PoE themes, now more so after applying them to the case study. The SWAP network's focus lies on capacity development, the intervention activities, financial sustainability and research to inform the platform's functions. This is reflected in Appendix E where these are the PoE themes with the most considerations.

5.3.4.3 Relevance of engagement themes in practice

The PoE themes are functions that should be implemented in an IP towards realising effective interactions between stakeholders. As functions, these themes require deliberate implementation; they require constant attention during the life of a platform. To facilitate the implementation of the PoE themes, they may be assigned as identifiable stakeholder roles. For example, specific stakeholders may be responsible for facilitation, as we see SWAP doing in the case study. Other stakeholders may be involved with the visioning and planning and yet other stakeholders responsible for the monitoring and evaluation within the network. Assigning roles to stakeholder groups allows for a sharing of the responsibilities and for accountability to be exercised in the platform.

Applying the PoE themes to stakeholder interactions gives insight into the purpose of including specific stakeholder groups in the platform. It shows what they can bring to the table. As seen in Figure 28 and Table 21, some stakeholders are included because of their role in developing the capacity of the platform, and others to improve resource mobilisation. The community actors are strategically positioned in the platform to execute the intervention activities. Community actors benefit from the interventions in a number of ways, including improved health, economic self-sustainability and improved self-worth [190], [192]. Furthermore, the consideration underlying each PoE concept should be intentionally implemented. Stakeholders who interact through a specific PoE should themselves use the underlying considerations to discern their responsibilities for the successful interactions with other platform stakeholders.

5.4 Preliminary evaluation interview

The preliminary evaluation of the PoE themes continued with a single semi-structured interview to further assess the confirmability and suitability of the themes. Assessing the relevance of the themes to inform stakeholder engagement in the South African health context was of importance at this stage of the evaluation.

5.4.1 Introducing the interviewee

The interviewee has over 15 years' experience in South Africa's pharmacy industry. At the time of the interview, they were the pharmaceutical services manager at a not-for-profit organisation (NPO) specialising in clinical care and treatment services, and health and community systems strengthening. The organisation is a leader in public health innovation and facilitates direct programme implementation and technical assistance for the South African Government. The interviewee has experience in managing several of these programmes. They work closely with many stakeholders, including local, regional and national government, and local marginalised communities.

The interviewee completed a bachelor's degree in Pharmacy and then attained a Certificate in Advanced Health Management from Yale University, in collaboration with the Foundation for Professional Development's Business School. The interviewee went on to complete a Master of Science degree in Global Health from Northwestern University.

5.4.2 Interview protocol

The semi-structured interview was adopted to collect appropriate data from the subject matter expert to inform the preliminary evaluation of the PoE themes. A focus was on the relevance of the themes in the South African health context. Following the procedure for semi-structured interviews proposed by Creswell [72], a discussion guideline was prepared for use in the interview. The discussion guideline appears in Appendix F.

The discussion guideline focused on a single programme which had a significant impact on the lives of many economically marginalised members of local communities across South Africa. Questions were carefully formulated to probe the interviewee into discussions which would allow the relevance of the PoE themes to emerge.

5.4.3 Findings from the interview

5.4.3.1 The evolutionary nature of development initiatives

The opening questions probed the interviewee to give insight into the development of the organisation's programmes. The organisation always begins with a clear understanding of a problem to develop appropriate solutions to the challenge. Despite this, the initial solutions evolve over time. Focusing on a single initiative, the interviewee shared the nature of the problem which was observed and how their initial solutions developed into the initiative as it is known today. Once a programme begins, the organisation learns from the implementation and adjusts as necessary. These adjustments are informed by an improved understanding of the challenge landscape and the developing capabilities of the stakeholders involved.

It was immediately clear that stakeholders join and leave the network at various stages of a programme's life cycle. This dynamic representation of stakeholders also affects the evolution of the programme, which relies on the combined capacity and resources of the stakeholder network.

5.4.3.2 Importance of stakeholder engagement

The interviewee felt strongly about the importance of stakeholder engagement in inclusive development initiatives but admitted that the consideration is often neglected. The organisation recognised the need for early engagement strategies to make stakeholders, particularly the beneficiaries, sufficiently aware of the opportunities available to them through a programme. But these early engagement initiatives are often not implemented. Time constraints for programme

implementation and funder demands are the common barriers to early engagement of stakeholders.

To engage local community actors, the organisation makes use of community forums and community groups. It recognises that strengthening stakeholders' access to the programmes will increase the effectiveness of these programmes.

5.4.3.3 Assessing the PoE themes

The PoE themes were presented to the interviewee. Questions probed the interviewee into discussions around the presence of the themes in the organisation's stakeholder engagement practices. The questions were focused on a single initiative with which the interviewee is very familiar, but discussions often addressed a variety of the organisation's programmes. This provided insight into the applicability of the engagement themes to a specific initiative but also on the general applicability of the engagement themes in a broader context.

The insights from the interview appropriate to the confirmed PoE themes are summarised in Table 22.

Table 22: Preliminary evaluation: Insights from interview

Confirmed PoE theme	Insights from interview
Action	Smaller organisations may be quicker to act than larger organisations (e.g. NGOs vs Government). Implementation may require changes to the planning and visioning, and organisations must be versatile.
Alignment	Pressure to satisfy both funders and beneficiaries. You receive funding for a certain mandate, and if you can adjust that mandate to better align with the beneficiaries' needs, you should. Platform vision and goals must align with those of the funders, the beneficiaries and other stakeholders. Strong link to managing power dynamics.
Communication	Very important. More communication is welcomed. Things might have, at times, been smoother if clearer communication was practised. Communication gaps led to misunderstandings and conflict. Links to conflict management. Different levels of communication are present; a difference in the communication practices among stakeholders.
Conflict management	Code of conduct is in place and stakeholders are held to it. Memorandums of understanding are signed. Disciplinary actions are taken if necessary. In some cases, corrective counselling is enough to improve participation. Other cases led to termination of stakeholder involvement. Links to the presence of communication.
Gender dynamics	No stipulation to entry was ever made based on gender. Gender of participants must be reported to funders.
Managing power dynamics	Communicate constantly with stakeholders, especially funders. Assess what stakeholders want against what can be offered. Analyse the risks of not meeting expectations. Reporting risks to stakeholders; being open and honest. Always communicate any changes and their influence. Back-and-forth politics are often

Confirmed PoE theme	Insights from interview
	present in stakeholder networks. Key cultural leaders in the community should be involved. If these key cultural leaders understand and are on board, the potential for success of the initiative is better. The more people interact (and the more people who are interacting), the better it is for power dynamics. Strong link to alignment here.
Monitoring, evaluation and feedback	With visioning and planning and then implementation of interventions, constant reviewing must be done to see if any adjustments need to be made. Formal structure of monitoring, evaluation and feedback are in place. Not as formal at first, but the facilitating organisation created a team for M&E. Quarterly reports to funders; what was planned, where the project is now, problems faced, solutions planned, how it is going with stakeholder engagement. Participation in M&E was limited. The value of participatory M&E is acknowledged, although it does get lost amidst the pressure to deliver outputs. Structure around participant reporting is needed.
Participation	Structures must be in place to facilitate participation, as in the case of participatory M&E. Stakeholders participate in identifying stakeholders who should be engaged.
Strategic representation	Getting communities involved with the identification of suitable candidates. A recruitment strategy is in place to identify community participants, to meet candidates and to check their suitability for the programme. Checking compatibility. Additionally, the presence of diversity in the context of South Africa means that BEE compliance is more likely, which is important to the funders and auditors. Representation then becomes an issue of sustainability; another motivation for diversity. However, the person who can do the job best should do the job. As for other stakeholders (partner organisations, etc.), no formal identification process is followed. Relationships have been established over time.
Transparency	Important consideration when dealing with the expectations of stakeholders and the risks which are associated with not meeting those expectations.
Trust building	Forms a large part of stakeholder engagement. Distrust is a problem. Some distrust is historical (based on hurt from long ago) or more recent. Distrust also exists because of the 'unknown'. Cannot push your own agenda, although funders push you to do that. Balancing the funding with the mandate is important. The presence of cultural leaders may promote trust among stakeholders within the context of I4ID.
Visioning and planning	Visioning and planning must be complemented with action. Some stakeholders may be more accustomed to longer periods of V&P before implementation. This may frustrate action-oriented stakeholders. Plans can change after implementation. Necessary to be very good at planning but remain versatile.

Time constraints limited the number of themes which could be discussed, and four themes were not addressed in the interview. These are championing, facilitation, resources and capacity, and shared learning. However, Table 22 contains valuable insights for the research on the 12 themes.

The insight can be incorporated into the development of the conceptual framework for stakeholder engagement. The interview contributed to the researcher's understanding of the dynamics and complexities of stakeholder engagement in the South African health context. Some important findings from the interview are discussed below.

Engaging government stakeholders can be challenging, and this has proved true in South Africa. These stakeholders may often expect more than what is achievable, these expectations not aligning with what has been offered by other stakeholders in the network. Government stakeholders are often experienced as being slow to make decisions and act, likely due to excessive bureaucracy or to official rules and formalities. Nonetheless, government's buy-in to interventions and the representation of government in the stakeholder network has significant benefits for the capacity and legitimacy of an IP and its programmes.

Another important stakeholder in the South African context is funders. South Africa's development initiatives attract the attention of many international funding organisations. The interviewee often returned to the importance of alignment between funders and the programmes they fund. There needs to be a clear communication of what conditions funders link to their support. Realistic expectations of what is achievable need to be communicated simultaneously. Of critical importance is the alignment of the funders' mandates with those of the IP, since the IP is representing the stakeholder network and the beneficiaries of the interventions. Funder mandates should support the collective vision and goals of the IP to empower the marginalised in its context of operation.

Strategic representation has an additional level of importance in the South African context. Here, diversity is often recognised as an indicator of progress considering the presence of such programmes as black economic empowerment (BEE). This has become an important consideration for funders, making diversity an issue of sustainability. Yet another consideration for programmes in South Africa's health context is the buy-in of traditional health practitioners (traditional healers). These stakeholders are important influencers in the lives of many of South Africa's population [197]. The adoption and dissemination of health interventions in marginalised communities can be significantly strengthened if these stakeholders acknowledge the benefit of these interventions to community members.

The interview also highlighted a need for modifications to be made to the PoE themes. These are discussed next.

5.4.3.4 Modifications to the PoE themes

The insight of the subject matter expert revealed a need for two minor modifications to the PoE themes. These were a change in the names of two themes to better describe what the themes entail as they relate to stakeholder engagement in IPs. Table 23 summarises the modifications made and the reason for the modification.

Table 23: Modifications to PoE themes after interview

Original	Modified	Reason
Action	Implementation	The interviewee often spoke of 'implementation' when referring to the execution of planned activities.

Original	Modified	Reason
Gender dynamics	Gender and racial dynamics	When the interviewee was probed to discuss the role of gender dynamics in their engagement contexts, they elaborated on the role that race plays in the South African context. This indicates the importance of including both gender and racial considerations when dealing with stakeholder engagement as both are areas where discrimination may be realised.

5.5 Screening the inventory of stakeholder engagement items

At this point in the research, a large amount of information had been captured by the systematic literature review, the case study and the interview. The information offered valuable insight into stakeholder engagement, the associated engagement mechanisms and their benefits to a functioning IP. However, it was not yet clear how the information would be processed to capture its value in a concise manner and restructured into a conceptual framework.

Conceptual frameworks expand our understanding of a phenomenon by offering guidance to our thinking about it [52]. These frameworks, then, look to simplify the process of understanding an already complex phenomenon, and should offer concentrated value.

During the analysis of the interview data, special attention was given to the interviewee's dialogue when discussing the PoE themes and how these apply to the context of their organisation. An interesting observation was made: the interviewee would often mention one or various PoE themes when describing a single theme. For example, when elaborating on the importance of alignment in the stakeholder network, the interviewee described instances where power dynamics, when left unchecked, posed a threat to alignment. In another example, the interviewee explained how strategically including key stakeholders in the network can increase a community's level of trust in the network and its interventions. This shows how strategic representation can strengthen trust building. Gaining the trust of a community would strengthen the adoption and dissemination of the interventions, and in this way trust building strengthens the implementation of interventions.

Yet another example is the role of communication to prevent conflicts in the stakeholder network. The interviewee described a sequence of events which led to conflict and distrust between important stakeholders in the network, the source of which was traced back to the presence of communication gaps.

This observation offered an opportunity for the PoE themes to be understood even better than before. A new dimension had emerged; one where the complexity of stakeholder interactions in these partnership approaches towards innovation development was revealed. It became clear that the PoE themes should not be regarded as stand-alone functions that may contribute to the various engagement practices present in a network. Rather, they are interconnected; any single instance of interaction or engagement of any form has several engagement themes at work in the

background. Figure 31 depicts the supporting role of conflict management in several other themes as an example of the interrelated nature of engagement in practice.
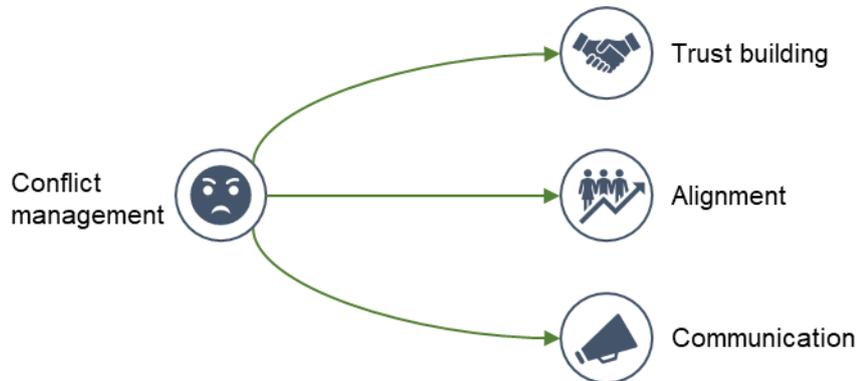
Figure 31: Conflict management supporting trust building, alignment and communication

With this new dimension revealed, the researcher reconsidered the inventory of PoE themes with their engagement mechanisms and functions within the context of an IP (see Appendix D). A process of identifying trends of this interconnected nature between the various themes commenced. This process allowed those items from the inventory which may strengthen the implementation of PoE themes to come to the foreground. These considerations emerged as appropriate for translation into the paradigm of a conceptual framework. The process is represented graphically in Figure 32.
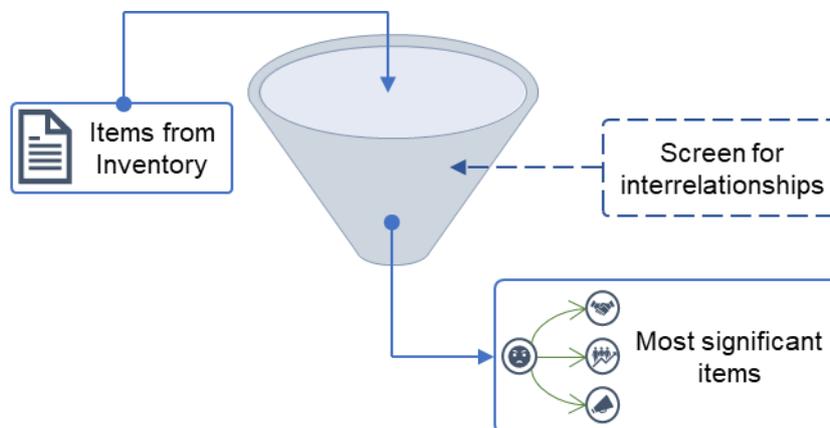
Figure 32: Screening process applied to inventory items

The benefits to the research output of the process in Figure 32 are:

1. The most important items in the inventory of engagement themes – those which may strengthen the presence of other PoE themes – are identified;
2. The amount of information is reduced to a more manageable number of items;
3. The items that came to the foreground are more appropriate for translation into the paradigm of a conceptual framework.

5.6   Concluding remarks: Chapter 5

Chapter 5 presents an inventory of engagement mechanisms and evaluates the inventory by means of: (1) a theoretical case study; and (2) an expert interview. The chapter provides the backdrop for the development of the stakeholder engagement framework.

Important lessons from the case study on the SWAP initiatives includes the importance of recognising human value and potential for true empowerment of the marginalised. Empowering people must allow them to be agents of their own change. They should be presented with opportunities to help themselves rather that receive hand-outs. The case shows that a social and psychological improvement is associated with empowerment and should complement an improved economic positioning of these groups.

The preliminary evaluation justifies that the practice of engagement (PoE) themes are applicable as they successfully described the stakeholder interactions present in the collaborative SWAP network. The themes need to be managed intentionally and some may be assigned as stakeholder roles. Although not definitive, the inventory of themes is comprehensive and captures the dynamics present in such networks. The progressive evaluation approach adopted by this research is useful to verify these findings.

The expert interview assessed 12 of 16 PoE themes. The insights are valuable as the research progresses towards the development of the conceptual framework. Several dynamics important to the South African context emerged from the interview, including the engagement of government stakeholders and funders, and the influence of strategic representation.

The evolutionary nature of projects became apparent. Initial solutions and approaches evolve over time as lessons from implementation are learnt and adjustments made. The evolution is usually accompanied by the dynamic representation of stakeholders, with some leaving the network and others joining at various stages of the network's existence.

Following minor modifications made to the PoE themes, a screening of the inventory items was used to: (1) identify the most important items; (2) reduce the item count to a more manageable number; and (3) identify the most appropriate items for translation into a conceptual framework. With the appropriate items identified, the process of translating these to populate the framework could begin. The output of this process is the preliminary framework for stakeholder engagement. The improved structure provided a framework that is useful to guide discussions during the semi-structured interviews in the second phase of the research evaluation. The next chapter reports on the development of the preliminary framework and its evaluation.

Chapter 6: Framework construction and evaluation

Chapter 6 reports on the progression of the conceptual framework's development from a preliminary framework to an enhanced framework through the comprehensive evaluation of the preliminary framework. The chapter begins by discussing the design requirements for the conceptual framework. The development of the preliminary framework is presented, where specific focus is placed on the process of item generation. The chapter continues to discuss the second phase of the progressive evaluation approach which evaluated the preliminary framework using four semi-structured interviews with a diverse group of subject matter experts. Upon completion of the framework evaluation, several modifications were made to the preliminary framework to develop the enhanced framework. The chapter concludes by presenting the enhanced framework and a complementing framework overview canvas.

Chapter outcomes	1. Discuss the conceptual framework design requirements
	2. Describe the process for generating framework items
	3. Introduce the preliminary stakeholder engagement framework
	4. Describe the evaluation approach
	5. Report on the findings and implications of the evaluation process
	6. Introduce the enhanced stakeholder engagement framework
	7. Introduce the framework overview canvas

6.1   Conceptual framework design requirements

This research adopted the conceptual framework analysis (CFA) approach to develop a conceptual framework for stakeholder engagement. The process is outlined in Section 2.3.

The term 'conceptual framework' is often vague and its use imprecise [52]. This research adopts the following definition of the term: " … a network … of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena." [52] Conceptual frameworks provide structure for thinking about complex phenomena. They serve as the skeletons, or internal structure, that guide explorations of the phenomena, providing a useful basis for observations, interview questions and analysis [198].

The adopted definition suggests that a conceptual framework is more than a collection of concepts; each concept plays an important role [52], [65]. The role of each concept is highlighted by an interconnectedness between them [65]. We found in the previous chapter that a strong interrelationship does indeed exist between the various PoE themes.

As a product of qualitative analysis, conceptual frameworks provide an interpretive approach to understand reality [52]. Also, although the CFA procedure calls for the analysis of multidisciplinary bodies of knowledge, the interpretations of the analysis are synthesised into a conceptual framework for a particular field of study [199]–[201].

The strengths of conceptual frameworks lie in their flexibility and their capacity to evolve [52]. These strengths can only be realised if the framework is constructed using flexible conceptual terms instead of theoretical variables and causal relations [52]. Frameworks can be reconceptualised and adapted as the phenomenon evolves or as additional data becomes available [52].

Finally, and very importantly, conceptual frameworks aim to provide understanding, and are not intended to predict outcomes [52].

6.2 Preliminary stakeholder engagement framework

This section describes the development of the preliminary stakeholder engagement framework. It touches on the generation of items which are used to populate the framework and the importance of language in this process. The preliminary framework is introduced and described later in this section. It is then evaluated in Section 6.3.

6.2.1 Framework item generation

6.2.1.1 Translating items for the framework

The screened items from the inventory required translating into a suitable format before they could be synthesised into a conceptual framework.

Considering the desired flexibility for a conceptual framework [52], the screened inventory items were translated into standards or norms to encourage effective stakeholder engagement in the context of an IP. Effective stakeholder engagement accepts that all stakeholders are assigned an appropriate level of participation and that interactions between stakeholders are constructive, so the IP can function well and meet its goals of empowerment.

The framework items are called implementation criteria. The criteria-format lends the framework the desired flexibility. Criteria can be used to inform one's conceptualisation of stakeholder engagement in IPs by introducing those principles that should be in place. A framework of criteria can be useful as an assessment tool to assess the current state of stakeholder engagement in an existing IP by investigating the extent to which the criteria are met. Such a framework may also be a useful guide for establishing a new stakeholder network and developing an IP. Thus, a framework of execution criteria is not only for improved understanding, but may be useful for planning, and monitoring and evaluation.

6.2.1.2 The role of language in item generation

When translating the inventory items into implementation criteria, careful consideration was given to the purpose of each item to the context of the IP. This was to mitigate the risk of an item's

significance being lost in translation. To this end, special attention was given to the language used when developing each criteria-item for the framework.

The inventory items remain specific to the context from which they emerged, and the language used when translating these for the framework is important to allow for generalisability of the items, and so also the framework. Again, the significance of the items should not be lost in pursuit of generalisability.

Because of the important role that language plays in the development of the framework, it must also be considered for evaluation. Items which fail to deliver their intended meaning must be reformulated. The reformulated items should be easily understood by practitioners while remaining concise, delivering concentrated value.

6.2.2 Introducing the preliminary stakeholder engagement framework

The first iteration of the stakeholder engagement framework is given in Table 24. The implementation criteria have been categorised according to their respective PoE themes. The preliminary framework contains 16 categories (PoE themes) and a total of 135 items (implementation criteria).

Table 24: The preliminary stakeholder engagement framework

PoE	Implementation criteria
Action	• IP activities raise the awareness of challenges faced by the beneficiaries and addressed by the IP and attract interested stakeholders as potential participants in the IP • IP activities encourage a learn-by-doing approach • IP activities are not limited to learning experiences; real socio-economic change is being realised • IP activities display tangible outputs to promote the development of trust in the IP and among stakeholders • IP activities are executed according to the visioning and planning activities; activities show the effectiveness of the visioning and planning activities
Alignment	• IP activities progress to meet the needs of the beneficiaries; certain activities target specific needs • Clear links between IP participant roles and their capabilities; participant capabilities are appropriate for their roles • IP participants opt to work together, continuously discounting their own self-interests • Power plays are managed and minimised to protect alignment • Clear links between benefits and the interests and needs of IP participants to promote involvement • Knowledge and information are shared between IP participants • Displays of trustworthiness among IP participants are apparent; breakdown of distrust and strengthening of participant relationships • IP focus is directed by the needs and interests of IP participants and the needs of the beneficiaries

PoE	Implementation criteria
Championing	• Implementation of IP activities is strengthened by champions in the IP • Champions inspire other IP participants to actively participate • Champions participate autonomously in self-identified areas for championing; they choose where best to champion • Champions mobilise their resources and leverage their capacities voluntarily • Champions leverage their capacity to procure resources; champions reduce the demand for external knowledge and resources • Champions link the IP to multiple societal levels (local, regional, provincial, etc.) • Champions raise awareness of the IP's presence using social and political efforts to increase the IP's capacity • Champions are actively involved in the visioning and planning activities to guide innovation pathways
Communication	• IP participants voice their interests and needs • Alignment of IP participants with the common goals and objectives is maintained with the appropriate communication methods • Stakeholders' resistance to change is managed by openly sharing information using the appropriate communication methods • Communication gaps are identified, and communication is restored to prevent issues • Facilitation of the IP is empowered by directing information to different parts of the platform • Different opinions and perspectives are communicated to balance power asymmetries • Information and results from IP activities are shared with IP stakeholders and ecosystem stakeholders • Communication methods are reformulated to develop a common understanding among IP participants to promote capacity development • IP participants can exchange knowledge, ideas and experiences • Informal communication channels are present and used • Appropriate interaction methods are used for the initial engagement of stakeholders • Appropriate communication channels are followed for information flow between and across the IP boundaries • Trust relationships develop as IP participants interact with other stakeholders in the ecosystem • Decisions made in visioning and planning are accurately communicated to other IP participants, and to ecosystem stakeholders when necessary
Conflict management	• IP participants are encouraged to continuously discount self-interests and to focus on collaboration
Facilitation	• Stakeholder expectations are managed appropriately; risks of not meeting expectations are communicated • IP vision and goals align with the needs and interests of the IP participants and the needs of the beneficiaries • All stakeholders buy into the common IP vision and goals • IP focus is maintained on the common goal • IP participants are accountable for their responsibilities • Facilitator(s) is a neutral participant in the IP; facilitator(s) remains impartial during all interactions in the IP • Facilitator mediates interests as IP participants negotiate

PoE	Implementation criteria
	• Facilitator mediates conflicts • Facilitator is sensitive to gender and racial dynamics present in the IP • There is a constant awareness of power plays; facilitator(s) is equipped to diffuse power plays • Stakeholder involvement in IP activities is equally distributed; involvement of champions and 'normal' participants is balanced • Movement of IP resources is managed • Capacity development of IP participants is intentional; areas for improvement of IP participant capabilities are identified and targeted • A non-competitive atmosphere conducive to the sharing of knowledge and experiences is maintained between IP participants • Interactions (including learning and sharing processes) between IP participants are facilitated continuously • Facilitator(s) is responsible for expanding the network of stakeholders; facilitator(s) identify and link prospective participants to the IP • Healthy levels of trust between IP participants are maintained
Gender and racial dynamics	• Most suitable stakeholders are selected as IP participants irrespective of race or gender
Managing power dynamics	• IP activities are prioritised according to the needs and interests of all stakeholders; prioritisation is not skewed in favour of select stakeholders • Resource allocation is not skewed in favour of select stakeholders and IP activities; allocations of resources are made in accordance with the resource requirements of the prioritised IP activities • Constant awareness of the existing power dynamics within and around the IP • Risks of conflicts between IP participants is mitigated • Interventions in favour of perceived weaker participants (including women) are in place to uplift these participants; involvement of perceived weaker participants is not hindered by the presence of strong participants • Differing cultural norms do not hinder the involvement of IP participants; unique cultural norms are not disregarded • Demands of resource providers (funders, etc.) are treated with the necessary urgency; mandates from resource providers align with the needs of the beneficiaries of the IP interventions • Level of influence is decoupled from resource richness; a stakeholder's resource richness does not skew their level of power within the IP • Access to resources is balanced • Defensive attitudes of self-interest give way as trust relationships between IP participants are developed
Monitoring, evaluation and feedback	• IP activities are continuously monitored; predefined indicators are monitored • Feedback on IP activities is used to guide the formulation of next steps and activities; new insights and discoveries are implemented, and the IP learns from the mistakes and successes of IP activities • Alignment of IP activities and IP participants with the platform goals is monitored • Feedback is used to identify areas where alignment must be restored • Prioritisation of IP activities is constantly tracked to guard against the effects of power imbalances • Feedback of significant successes is shared with external stakeholders to increase the awareness and interest of stakeholders in the IP; • Feedback of IP activities is used as an opportunity to share insights and experiences and to learn

PoE	Implementation criteria
	• Participatory monitoring, evaluation and feedback activities are used to promote involvement and transparency • Results of monitoring, evaluation and feedback activities are shared with IP participants and other stakeholders in the ecosystem • Impacts of IP activities are accurately reported by the monitoring and evaluation activities; impacts are communicated to the beneficiaries and other stakeholders • Research studies are used to prove the impacts of the IP activities; significant insights are published to disseminate the insights and generate income • Accurate accounts of the reports are disseminated to other stakeholders in the ecosystem through feedback activities • Feedback is used to inform the focus of the IP, adjusting the innovation pathways to address emerging trends and needs
Participation	• IP participants identify potential activities and select the activities for implementation • IP participants are motivated to participate in the IP and align their resources and capacities • Involvement of IP participants begins early on and continues throughout the life of the IP • IP participants are involved in strategic planning activities which counters their resistance to change • IP activities rely on the involvement of perceived weaker IP participants, promoting their societal status, economic positioning and self-esteem; perceived weaker IP participants are economically active • IP participants have abandoned self-interest for the common good of the IP and its stakeholders • IP participants are actively involved in participatory monitoring, evaluation and feedback activities • IP participants mobilise their individual resources and capacities and direct these into the platform • IP participants have access to the IP's common resource pool • IP participants access opportunities for capacity development; IP participants gain experience, develop insights and gather information; • Commonly marginalised stakeholders have improved social and economic positioning, and self-esteem; commonly marginalised stakeholders are economically active • IP participants share their experiences and insights with other IP participants • IP participants are involved in the identification of prospective new participants; existing relationships are leveraged to gain new IP participants
Resources and capacity	• IP participants' capabilities are developed to match the needs of the IP activities • IP leverages its capacity to advocate on behalf of its stakeholders (e.g. making policy recommendations) • IP participants mobilise their individual resources and capacities and direct these into the platform • Resource management procedures used in the IP are transparent and trustworthy
Shared learning	• Capabilities of IP participants are developed because of shared learning • IP participants share information, insights and experiences • Improving sense of collaboration and trust between IP participants • Ideas are translated into executable activities • Improving coordination through joint planning activities

PoE	Implementation criteria
Strategic representation	• IP participants include representatives of the beneficiaries so that IP activities address the true needs of the beneficiaries • Technologies and innovations introduced by the IP are appropriate to the context of the need • National level stakeholders are represented; IP goals align with the national goals to support government strategies in the specific sector • Stakeholders with the motivation and capacity to serve as innovation champions are represented in the IP • Stakeholders who may be regarded as commonly marginalised are represented in the IP • The presence of unreasonable stakeholders in the IP is mitigated; selecting IP participants considers their influence on power dynamics • Representation in the IP is leveraged to obtain information directly from stakeholders who implement and disseminate innovation • Resource positioning of the IP is positively influenced by the represented stakeholders • Capacity of the IP is positively influenced by the represented stakeholders; IP has increased presence in various economic sectors and at different societal levels; gains legitimacy • Resource potential of stakeholders is established using the appropriate stakeholder analysis techniques • Capabilities of stakeholders are established and areas for improvement (capacity development) are identified using the appropriate stakeholder analysis techniques • Dissemination of IP interventions is positively influenced by the represented stakeholders • IP participants include stakeholders who are willing to contribute to the exchange of knowledge, experiences and insights • IP participants include those stakeholders who are experts in the necessary sectors • Key stakeholders are represented to promote trust in the platform among the wider ecosystem of stakeholders and encourage involvement in IP activities
Transparency	• Transparency and honesty underlie all communication functions; information is presented completely and accurately and shared within and across IP borders • IP participants share their aspirations, frustrations and self-interest • IP participants are fully aware of the IP activities taking place, decisions being made, and the reasons for these; • IP facilitator operates with neutrality and integrity, sharing all necessary information with the IP participants • Risks are being communicated with the necessary stakeholders • IP operates openly within the innovation ecosystem to raise awareness of platform activities and rally interest from other stakeholders; IP is visible to external stakeholders • All relevant information to guide the visioning and planning activities is made available
Trust building	• Alignment is being strengthened; stakeholders are becoming more willing to compromise and collaborate • Communication channels between stakeholders become more developed; information is shared more easily • Stakeholders become increasingly motivated to contribute from their resource pools

PoE	Implementation criteria
	• Additional stakeholders are drawn to the IP and willing to contribute from their resource pools • Non-competitive environment allows for shared learning
Visioning and planning	• IP activities are identified and planned from appropriate planning and visioning activities • IP activities strategically target areas with the greatest potential for innovation adoption and dissemination; appropriate timing for implementation is considered • IP activities identified for implementation align with the goals of the platform and the needs of the beneficiaries • IP activities are planned to incorporate monitorable indicators to allow for monitoring, evaluation and feedback of these activities • Resource requirements (resource types and amounts) are identified using appropriate visioning and planning • Stakeholder capabilities required for the implementation of IP activities are identified using appropriate visioning and planning activities • Strategic representation is guided by the planned scale of the IP activities and the IP's focus • Dynamic representation of IP participants is strategically guided by the visioning and planning of future activities; the change in representation is pre-empted • Initial IP activities are realistically achievable to develop confidence in the IP and its participants

The first iteration of the stakeholder engagement framework in Table 24 does not display the interrelationships shared by the various PoE themes. Rather, these interrelationships become clear when reading the categorised implementation criteria. The implementation criteria, grouped according to the engagement theme which they support, incorporate many nuanced expressions of other engagement themes.

For example, within the category called 'Monitoring, evaluation and feedback', one criterion reads, "feedback on IP activities is used to guide the formulation of next steps and activities." This clearly speaks to the role that feedback has for visioning and planning activities, captured in the 'Visioning and planning' category.

The benefit of the current iteration of the framework is that it displays the content simply and clearly. Evaluating the framework content can follow a structured approach where each criterion can be evaluated as credible and confirmable. This encourages a holistic assessment of the framework to ensure a valid and reliable research output.

The framework development process is progressive. The framework is set to evolve after it is evaluated since the analysis of the interview data provides additional insight. This insight will allow additional dimensions to be added to the framework to improve the framework's content richness.

The evaluation of the preliminary stakeholder engagement framework is reported in the next section.

6.3   Evaluation of the preliminary stakeholder engagement framework

The second part of the progressive evaluation approach comprised additional semi-structured interviews with several subject matter experts. The evaluation outcomes for the second part of the evaluation include a credible and confirmable research output (see Table 5 on page 30 for an explanation of the evaluation outcomes).

This section presents an overview of the interview approach. The results and conclusions drawn from analysing the interview data are discussed. Finally, the framework additions and modifications are discussed as these culminated in the enhanced stakeholder engagement framework.

6.3.1 Choosing the type of interview

Semi-structured interviews offer the researcher an appropriate amount of flexibility while maintaining enough structure to enable consistency between multiple interviews [53], [71]. Semi-structured interviews are suitable to address specific focus areas, but the open-ended nature of the questions gives insight into how the participants perceive the phenomenon in question [53], [70]. The use of a discussion guideline rather than closed-ended questions allows the researcher to probe the interview participant for more information on certain themes, while the exploration of newly emergent themes is also possible [53], [69].

6.3.2 Interview protocol

Creswell [72] suggests an interview protocol or discussion guideline be developed and used for conducting interviews. The discussion guideline is included in Appendix G.

The discussion guideline was designed to ensure that the interviews were limited to a time of one hour. The first step would be to obtain ethical consent for participation from the interviewee. Thereafter, a short PowerPoint presentation would offer the interviewee an introduction to the research topic and background on the purpose of the interview.

The interview discussion had three parts. The first part was to establish which individuals and organisations the interviewee views as stakeholders in their network. The second part sought to establish whether a need for a stakeholder engagement framework exists. The third part went on to probe the interviewee into discussions which would later be analysed to evaluate the content and structure of the preliminary framework.

The discussion would be supplemented by presenting the interviewee with a summarised framework of PoE themes. This would serve as a probing mechanism for interviewees to discuss points that they may not have thought of previously. The interviewee could comment on the framework which may be valuable to guide the research and be incorporated in the development of the enhanced framework.

The following key questions are incorporated in the discussion guideline:

1. Who are the target beneficiaries and who do you partner with?
2. Is there a need for guidelines or frameworks to assist in managing stakeholder relationships, and do these exist?
3. What are important considerations for managing stakeholder relationships in a stakeholder network?
4. Do you agree with the stakeholder engagement themes contained in the framework?
5. Are these stakeholder engagement themes appropriate to your context?

The discussion guideline was useful to ensure consistency is maintained in the interview process. This is important considering several interviews were conducted over several weeks. The guideline also upholds the quality of the information gathered from the interviewees by keeping discussions within the focus areas of the investigation.

Analysis of the interview discussions was enabled by voice recordings of the interviews.

6.3.3 Interview participant profiles

The second part of the progressive evaluation approach comprised four semi-structured interviews with a diverse variety of subject matter experts. The subject matter experts were carefully identified to have had appropriate industry experience with participatory development initiatives. Individuals with experience managing stakeholder dynamics within a stakeholder network were particularly desirable.

Eight experts were identified and contacted. Of these, two experts expressed their interest, but later became unresponsive to telephone calls and emails. Another two experts were unresponsive to both initial and follow-up communications. This left four experts who had expressed great interest in the research and were eager to participate in the evaluation process. The profiles of these four interview participants are summarised below. The personal identities of the individual interviewees and that of the organisations they represent have been anonymised to meet the requirements for ethical research.

6.3.3.1   *Interviewee 1*

Interviewee 1 is co-founder and director of a well-established NPO and research organisation conducting innovative research to strengthen public engagement in many of South Africa's health research projects. The interviewee has a passion to see marginalised communities empowered using innovative participatory approaches, including participatory visual methods and action-orientated approaches. They have many years of experience working with over-researched communities and navigating the dynamics that are associated with the participation of marginalised

individuals. The interviewee believes that their approach to research should be accessible to others to learn from, improving engagement practices and policy making.

The interviewee holds a PhD in Immunology and Genetics from the University of Cambridge. They have held several research positions both in the United Kingdom and in South Africa.

6.3.3.2 Interviewee 2

Interviewee 2 is an expert in community informatics, specialising in collaborative communities. They have experience in both academic and research and development (R&D) contexts, and consult for a variety of communities, organisations and inter-organisational networks in both the developing and developed world. Their services include community visioning and innovation strategy advice, community network mapping, collaborative sense-making and project management. The interviewee adopts an ecosystems perspective coupled with an innovative stakeholder mapping approach to understand the dynamics of stakeholder networks.

The interviewee holds a PhD in Information Management from Tilburg University. They held several research positions in both the academic and private sector before starting their own business; an applied research consultancy on collaborative communities.

6.3.3.3 Interviewee 3

Interviewee 3 has experience developing volunteer networks in a diverse range of contexts in both the developed and developing world. They have piloted a volunteer platform in a marginalised community in the Western Cape. They have a novel approach to incentivise volunteering to realise tangible community impact and social development. Their passion for people and for technology is combined in an innovative way to realise transformative social impact in marginalised communities. The insight they have into the importance of the initial roll-out phases of development initiatives, and the stakeholder dynamics associated with the early adoption and dissemination of interventions, proved very attractive to inform this research.

6.3.3.4 Interviewee 4

Interviewee 4 is an independent consultant and founder and managing director of an NPO with a vision to provide holistic support to the poor by facilitating the collaboration of other NPOs and channelling crowd efforts. Their experience as a champion to facilitate the collaborative efforts of NPOs within a single community places them at the centre of a larger stakeholder network. Their experience managing on-the-ground issues was attractive to inform the research. Their approach to empower a very marginalised part of society, those living at the BOP and suffering under the realities of homelessness, provides important insight into the dynamics of participatory mechanisms aimed at these members of society.

The interviewee holds a bachelor's degree in Industrial Engineering and has industry experience in management consulting.

6.3.4 Data analysis

Creswell's [69] approach to data analysis in qualitative research was discussed in Section 2.7 and is summarised in Figure 33. As indicated in the figure, the first four steps guide the discussion in this section. The final two steps, representation and interpretation of the data, are discussed in the next section.
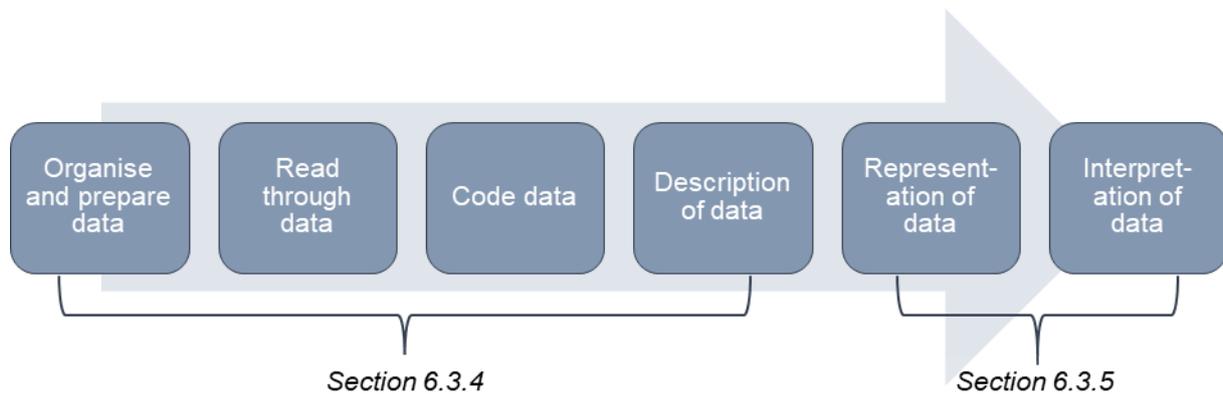
Figure 33: Six-step process for data analysis in qualitative research [69]

6.3.4.1 Coding the interviews

The interview recordings were analysed using the Atlas.ti qualitative data analysis software. There were several cycles of coding applied to each interview. In the first cycle, the entire discussion is coded into four broad categories: (1) understanding the context of the interviewee; (2) establishing the need for a framework; (3) insight used for evaluating the framework and its content; and (4) additional data that may enhance the researcher's understanding of the topic. These categories relate to the key questions contained in the discussion guideline.

Generalisability of the interview data is important. The interview data needs to be decontextualised to appropriately inform the framework evaluation. Each interviewee conceptualises their understanding of stakeholder engagement according to their personal experiences and context of operation. The researcher must be sensitive to the interviewee's context so that they may understand this conceptualisation of the issue and capture the richness of the insight offered by the discussion. Figure 34 offers an illustration of how the discussion is positioned within the interviewee's experiences and context.

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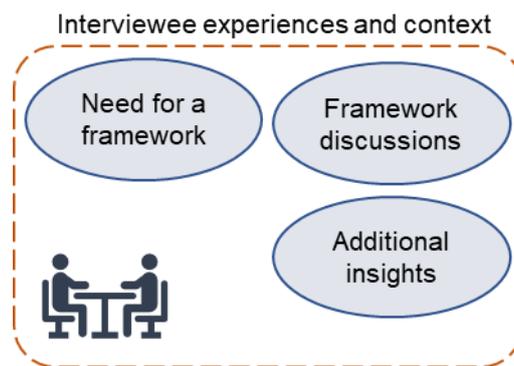
Figure 34: Discussion points framed within the interviewee's context and experiences

A second cycle of coding was performed on the interview discussions aimed at evaluating the preliminary framework. These were coded according to the PoE themes. These code groups could be used to verify the content and structure of the framework and identify theoretical oversights in its content.

6.3.4.2   Using the interviews to evaluate the framework content

The interviews were able to substantiate the inclusion of several items in the framework. The interviews further highlighted numerous framework omissions and guided the formation of additional framework items. In some cases, the interview data disproved the inclusion of framework items, and these had to be critically reconsidered and even removed. The process of confirming, adding, removing and modifying framework items was conducted systematically and accurately reported. This was to ensure a transparent and replicable approach to evaluating the framework.

The interviews were transcribed for the insight to be mapped against the preliminary framework's content. The evaluation was tracked using the Microsoft Excel spreadsheet software and had both a quantitative and qualitative component.

Each item in the preliminary framework was assigned a unique identifier. Upon analysis of the interview data, data appropriately related to a framework item was assigned the identifier that linked it to that item. This enabled the quantitative component of the framework evaluation as the number of times an item identifier was assigned could be tallied. A summary of the interview data associated with each item was carefully formulated to accompany this process. In this way the qualitative component of the evaluation is addressed. An excerpt of the Microsoft Excel spreadsheet can be seen in Appendix H as an example.

Several framework items were addressed more than once and across several interviews. This was desired as it strengthens the corroboration of the framework content. Those items that were addressed only once were revisited, considering the case for their inclusion in the framework. Relating these items back to the systematic literature review and preliminary evaluation from which they emerged, their theoretical grounding could be judged. Many were retained in the framework.

A similar process was used for those items that were not addressed by the interviews. Many of these items were discarded; however, several others were retained. The reason is that the researcher had to be sensitive to the reality that the evaluation approach was not definitive. This means that for framework items to be discarded solely based on their not being addressed in the evaluation, many more interviews had to be conducted. However, because of the nature of the progressive evaluation approach and time constraints, this was not possible.

Though not definitive, the framework evaluation was effective and valuable to the research. Focus was not only on addressing framework items, but also on how interviewees addressed them across the interviews; by paying special attention to the vocabulary used by interviewees when addressing these items, several items could be refined. This simply meant getting their implied meaning across more appropriately.

Though systematic, the framework evaluation process was iterative in nature, with the reshuffling, combining and reassessing of framework items taking place in parallel with the interview analysis.

6.3.5 Results and discussion

The results of the preliminary framework evaluation are presented in this section. A narrative approach is used to represent and interpret the findings. The narrative is supplemented by graphs and figures where appropriate.

6.3.5.1   The need for such a framework exists

Building on this insight, the discussion guideline incorporates discussion points to verify if the need for a stakeholder engagement framework exists.

The first discussion point required interviewees to comment on the nature of the stakeholder identification processes used in their contexts, and whether these are standardised. The responses are distinguishable by whether well-established stakeholder networks already exist. The interviewees whose organisations have well-established networks rely on these networks when looking to expand existing networks or establish entirely new ones. Formalised processes of stakeholder identification are not used even in these well-established networks, with interviewees admitting that the approaches depend on the specific project and setting. Several responses also alluded to the use of word-of-mouth for stakeholder identification, especially within local communities.

Yet the responses from other interviewees show that this is not a benefit afforded to organisations who are not yet known, and who are only just beginning to develop a stakeholder base. These interviewees acknowledge that a considerable amount of effort goes into identifying stakeholders who can be early adopters of a vision towards establishing a network. And again, these interviewees admitted to not using any standardised processes to aid them.

In Section 5.4, the preliminary evaluation interview points to the importance of stakeholder engagement for inclusive development initiatives but also that it is often neglected. The second part of the evaluation builds on this insight as interviewees' view on the importance of establishing and maintaining healthy relationships with their stakeholders, and the effort directed at this, was discussed. The idea that functional relationships must exist between stakeholders within a network for it to operate effectively was unanimous; each response showed that they view this as very important. One interviewee commented, *"If you do not establish good relationships with your stakeholders, it is not going to work."* Interestingly, several interviewees admitted that despite the importance of healthy relationships, this is often neglected or even dismissed. One interviewee admitted that they themselves were not doing enough in this regard, pointing to several other managerial considerations taking up considerable time and effort as the reason.

The discussion has shown that stakeholder engagement, though viewed as a critical consideration for the functioning of stakeholder networks, needs attention in practice. This may already point to the need for a framework that highlights the importance of stakeholder engagement while offering a departure point for improved management of stakeholder engagement. To reinforce this, the interviewees were asked whether they were aware of similar frameworks, and whether they would use them. All responses proved positive for the research in that these interviewees were not aware of such frameworks existing, but that they would find them relevant if they were aware of them.

The responses were particularly positive from those interviewees who were still in the process of establishing their first stakeholder network. One responded with the importance of learning from the mistakes of those who have gone before, and that a framework that captures these lessons will support a culture of knowledge sharing. The interviewee continues to say, *"I would have and probably still would find value in it (a framework)."*

6.3.5.2   Stakeholders present in South Africa's initiatives to empower the marginalised

All interview participants have experience working in development initiatives aimed at empowering socially and economically marginalised groups in South Africa. Though the four interviewees by no means represent the full spectrum of efforts to empower the poor in several diverse ways, exploring the stakeholders included in their networks lends insight into the playing field of partnerships for inclusive development.

Within the context of health research in some of the country's most marginalised communities, innovative participatory research methods have proven beneficial to both the researchers and the community members, and we see the collaboration of universities and research organisations, corporate partners and government (local, provincial and national) come to the foreground.

A network for incentivised volunteering in a marginalised community involved corporate partners, the general public, local small business owners, local farmers and established NPOs from the community.

In an IP formed to provide holistic support to a community's homeless population, one network includes several NPOs offering different and complementary services, the general public, local businesses owners and the local government as important stakeholders.

The discussion suggests diverse stakeholders may be present in these stakeholder networks. We see that stakeholders operating at different societal levels, from community level all the way to national level, may be present in the same network, together forming the platform for innovation and change around a specific challenge.

The beneficiaries themselves are important stakeholders to consider. The marginalised depend on the context under observation, and considering BOP population groups in South Africa, the marginalised often refer to members of township and informal settlement communities. Within these communities, projects have been targeted at disenfranchised youth, informal traders, and the like. Considering the influence of various health determinants, these population groups are vulnerable to ill health. As argued in the opening chapter to this research document, empowering these groups economically and socially alleviated the health burden because of an improved state of health determinants.

6.3.5.3   *Outcomes of quantitative evaluation of framework content*

By tallying the number of times each unique item identifier was assigned when analysing the evaluation interviews and overlaying the number of identifiers assigned to gaps in the framework, an idea of the attention enjoyed by each PoE theme during the evaluation can be obtained. Figure 35 displays the tally of the identifier assignments per engagement theme.
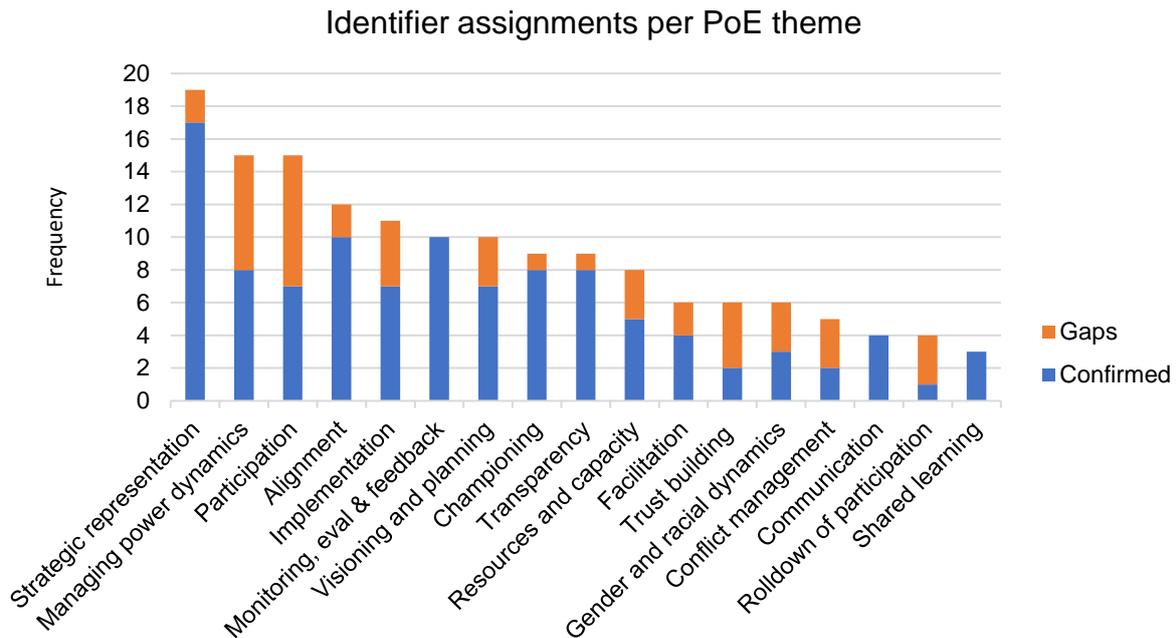
Figure 35: Frequency of PoE themes addressed by interviewees

Figure 35 is not indicative of the number of framework items confirmed and those added to the framework during the evaluation process. Rather, it captures all assignments of the item identifiers, including when identifiers were assigned more than once.

From Figure 35 it is noticed that all 16 PoE themes were addressed at least once during the framework evaluation, while an additional PoE theme, Rolldown of participation, was added.

Strategic representation is the theme which received the greatest number of confirmed items, with several items in this category addressed up to three times. After Facilitation, Strategic representation has the highest number of items in the preliminary framework, alluding to its relative importance as an engagement practice. That the interviewees often addressed this in the discussion may verify this notion.

Participation also enjoyed a significant amount of attention during the interviews. However, despite being the category with the fourth-highest number of items in the preliminary framework, the number of items confirmed in the interviews is relatively low, at only seven out of 13 items. Each of these items was confirmed only once. Despite this, all of them were retained. Participation has the greatest number of items that were retained despite not being addressed in the interviews. Gaps in the framework were highlighted in this category another seven times during the evaluation process. This is the category with the most gaps identified, and items added, and this may be where the preliminary framework was weakest. All of this contributes to this category having the greatest number of items in the enhanced framework (see Section 6.5.1).

The significant attention given to participation in the interviews, and high item count in the framework, may point to the importance and complexity of participation as an engagement practice in stakeholder networks, especially when pursuing the empowerment of BOP stakeholders. The relatively large number of gaps and retained items may be indicative of the challenges associated with participation. This is not surprising since the conceptual review in Section 3.3 already alluded to this. Participation as a process and the end goal must be understood. The evaluation may further indicate that practitioners are well rehearsed in the challenges of participation and the consequences of such challenges, and may have ways to address these, but there remains a void in the understanding of what participation *is* and *how* to apply it in different contexts.

Two important items that the researcher felt were of such significance that an additional PoE theme and framework category was added, emerged from the evaluation. The items address the departure of stakeholders from a network and even the disbanding of the network entirely. If imminent, these events need to be pre-empted and planned for, or else the departure of a stakeholder, or of the network from its involvement in, for example, a marginalised community, may leave a vacuum and undermine the objective to empower stakeholders. The items further indicate the importance of maintaining a good relationship with stakeholders who have left the network as these stakeholders may return to the network at a later stage. To this end, Rolldown of participation was added as the seventeenth PoE theme.

In the preliminary framework, Communication has fourteen items, the third-highest of the categories. Yet it was only addressed four times during the evaluation process. The little attention given directly to communication may not undermine the importance of this engagement practice but may rather relate to its inherent contribution to other engagement practices. Indeed, from the literature we understand that "communication is the electricity that powers the platform" [173]. It may be that communication was deemed an obvious consideration when dealing with stakeholder engagement and thus not explicitly mentioned by interviewees in the discussion.

Figure 36 on page 140 presents a graphical representation of the prominence of PoE themes in the IP literature, as found in the systematic literature review, and compares that to their prominence in the evaluation interviews. The figure compares the frequency by which a PoE theme was coded in the literature to the frequency by which that same theme was coded in the analysis of the evaluation interviews. Relative frequencies are used in the figure to allow the data to be represented on the same set of axes.

Comparative analysis of PoE frequencies
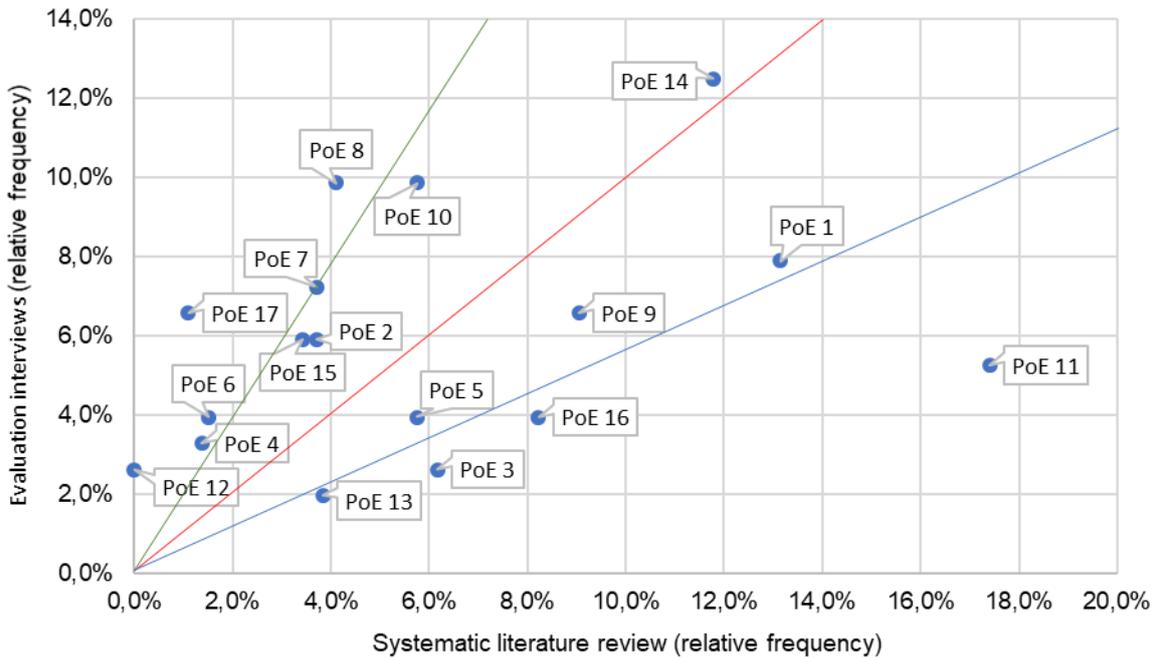
PoE 1	Alignment	PoE 7	Implementation	PoE 13	Shared learning
PoE 2	Championing	PoE 8	Managing power dynamics	PoE 14	Strategic representation
PoE 3	Communication	PoE 9	Monitoring, evaluation and feedback	PoE 15	Transparency
PoE 4	Conflict management	PoE 10	Participation	PoE 16	Trust building
PoE 5	Facilitation	PoE 11	Resources and capacity	PoE 17	Visioning and planning
PoE 6	Gender and racial dynamics	PoE 12	Rolldown of participation		

Figure 36: Comparison of emphasis on engagement practices: literature and interviews

Figure 36 must be used while considering some restrictions. The systematic literature review was extensive, and the results displayed in the figure accurately reflect where the literature lays emphasis on stakeholder engagement in IPs. However, the four interviews conducted for the evaluation are by no means definitive and additional interviews may increase the confidence in the data displayed in Figure 36. Keeping this in mind, the figure allows for insightful contributions to understanding the focus of both research and practice in the stakeholder engagement landscape.

The data plots in Figure 36 form two groupings, separated by the red line. The red line indicates the boundary where the PoE themes are equally prominent in the literature and the interviews.

The first grouping lies to the right of the red line. This grouping contains engagement practices which are more prominent in the literature than in the interviews. The blue line shows the general tendency of the grouping. There is a positive trend showing that PoE themes which have an

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increased prominence in the literature are met with a corresponding increased prominence in the interviews.

The second grouping lies to the left of the red line in Figure 36. This grouping consists of engagement practices which were more prominent in the interviews. The green line displays the general trend for this grouping. As in the previous grouping, there is a positive trend, and themes with an increased prominence in the interviews are met with a corresponding increase in prominence in the literature.

There are seven PoE themes that receive more emphasis in the literature. These are; Alignment, Communication, Facilitation, Monitoring, evaluation and feedback, Resources and capacity, Trust building and Shared learning. The remaining 10 PoE themes were more prominent in the interviews. These are; Championing, Conflict management, Gender and racial dynamics, Implementation, Managing power dynamics, Participation, Rolldown of participation, Strategic representation, Transparency and Visioning and planning.

Resources and capacity (PoE 11 in Figure 36) is the most prominent engagement practice identified in the IP literature, coded 127 times or at a relative frequency of 17,4%. Whereas in practice, as represented by the interviews, it was not nearly as prominent, with a relative frequency of 5,3%. This is around the mid-range for prominence in the interviews and so Resources and capacity has moderate emphasis in the interviews.

There are 30 publications with a focus on the agricultural sector in the dataset of primary publications analysed in the systematic literature review. Two-thirds of the primary publications are placed in the African context. Agriculture is a resource-intensive sector and Africa is commonly regarded as a resource-poor setting. Agricultural IPs in this setting are often formed to pool resources to support smallholder farming (see for example [140], [168], [202]). This may be a reason for the prominence of Resources and capacity as an engagement theme in the literature. And while it may not necessarily be neglected in practice, it was not as prominent in the interview discussions.

The interviewees' professional contexts were predominately associated with South Africa, with some extension to other African countries and Europe, specifically the Netherlands. Though their combined experience covered several sectors, agriculture was not among these. This may be a contributor to the smaller emphasis on Resources and capacity. It may well explain the presence of two groupings among the data.

The interviews emphasised Strategic representation above all, while this is also the point closest to the red line. This signifies Strategic representation as near-equally prominent in view of both the literature and practice. As IPs are predominantly a partnership model with a broader stakeholder

network possibly forming around them, identifying and attracting the appropriate stakeholders is of critical importance.

While Strategic representation is the most prominent in the interviews, it has the third-highest prominence in the literature, after Resources and capacity, and Alignment. This emphasis on alignment is again to be expected given the partnership-nature of IPs. Stakeholders are expected to buy into a common vision. Furthermore, the IP vision must align with the needs and interests of the beneficiaries.

Both literature and the interviews place the least emphasis on Shared learning. At 28 codes in the literature, it is clearly something that is appropriate to be considered. However, the benefits of shared learning need to be understood and their potential communicated to stakeholders before these benefits will be realised. Indeed, one interviewee commented that their stakeholders were often unresponsive to efforts to promote shared learning in the network, and the reasons for this were not clear to the interviewee.

6.3.5.4   *Credibility and confirmability of the research output*

The framework evaluation contributes towards two aspects of trustworthy research; credibility and confirmability. Credibility considerations contribute toward a plausible research output. In the framework evaluation, the interviews were used to verify the items in the framework. Several interviews were used to address as many framework items as possible, while this also meant the interviews could corroborate one another. We see in Figure 35 that the interviews indeed verified several framework items, while several gaps were also identified. The emergence of gaps and addressing these appropriately further contributes to a credible framework.

The addition of new framework items improves the objectivity of the research as different perspectives shed new light on the topic of study. Improvements made to the structure and vocabulary of several individual framework items further mitigated the presence of biases contained in the framework items. Testing and improving the objectivity of the framework is concerned with the confirmability of the research output.

Though not definitive, the evaluation process showed evidence of trustworthy research, specifically in the areas of credibility and confirmability. As the evaluation process progresses to the final stage, a use case of the enhanced framework and the stakeholder engagement tool, the trustworthiness of the research may be further substantiated.

6.4   Modifications made to the framework

Several modifications were derived from the evaluation process and applied to the preliminary stakeholder engagement framework to improve it. These included the removal of unsuitable items, the addition of new items and framework categories, and amendments to existing items and

categories. More modifications were applied to improve vocabulary and the framework's logic. This section describes the most notable modifications made to the preliminary framework.

6.4.1 Item additions

Table 25 contains the item additions made to the framework according to the relevant framework category. A new category, Rolldown of participation, was added to the framework. The framework thus contains 17 PoE themes as categories.

Table 25: Items added to the framework according to framework categories

Category	Item
Implementation	Intended beneficiaries and/or users are sufficiently aware of intervention activities
	Stakeholders clearly understand the purpose and benefits of intervention activities
	Stakeholders clearly understand how intervention activities work
Alignment	Stakeholder visions and directions cooperatively coexist
Championing	Champions provide an entry point to local communities
Conflict management	Stakeholders make their expectations known
	Stakeholders can communicate their concerns, e.g. presence of a facilitator
	Acknowledge that conflict will happen and must be managed
Facilitation	Facilitator is accessible to stakeholders
	Facilitator is culturally relevant to the context of the challenge landscape
Gender and racial dynamics	Awareness of dynamics existing between stakeholders of different races
	Stakeholders' cultural norms are understood and respected
Managing power dynamics	Stakeholders value the expertise of other stakeholders
	Shared information is not obscured to the benefit of specific stakeholders
	Conflicts of interest are identified and managed
	Pre-empt and mitigate effects of factors which increase participant vulnerabilities
	Mechanisms of resistance are recognised and managed
Participation	Approaches to encourage involvement in interventions are in place, e.g. incentives for participation
	Stakeholders (including the beneficiaries) take ownerships of the initiatives
	Participatory approach is people-centric to empower participants

Category	Item
	Improved understanding of lifestyle challenges experienced by the commonly marginalised
	Stakeholders govern the dissemination of information to external parties
Resources and capacity	Help stakeholders identify what challenges are present in their context
	Existing knowledge and resources are acknowledged and used
Strategic representation	Potential champions are identified and first to be engaged
	Existing stakeholder networks are leveraged in stakeholder identification
Transparency	Stakeholders are fully informed with accurate information
Trust building	Visible signs of interest in the activities of stakeholders even outside of the context of the IP
	Engage stakeholders in a sincere and respectful manner
	Credibility is necessary when engaging participants
	Vision and direction are important when engaging stakeholders
Visioning and planning	Challenges present in the contexts for interventions are understood
	Long-term goals are established and recognisable
	Vision coexists with and supports stakeholders' visions
Rolldown of participation	Keep stakeholders informed about progress and achievements of initiatives
	Acknowledge stakeholders for their contributions once their participation has concluded

6.4.2 Improvements to framework logic and item vocabulary

During the evaluation process, an improved understanding of the research topic revealed instances where framework items were incorrectly categorised. Upon scrutinising the framework content, some items were found to be repetitive while other items were verbose. These hindered the framework's ability to relay the valuable insight to a user.

To address these issues, improvements to the framework's structure through recategorising the necessary items was done concurrently with the evaluation of the items. To address instances of repetition, some items had to be removed or combined with others. Finally, the grammar of each item which would make up the enhanced framework was scrutinised. Grammatical enhancements made to the items included limiting each item to 10 words, the use of informal language to increase the framework's audience base, and ensuring consistent terminology throughout the framework.

6.4.3 New dimensions added to the framework

Towards the development of an enhanced framework, an additional dimension was added to the framework. This dimension is a high-level categorisation of the now 17 PoE themes to aid the user's understanding of the complex interconnected nature of the PoE themes. The themes have been grouped according to three categories: (1) engagement activities; (2) enablers; and (3) desired outcomes.

Engagement activities contain those PoE themes describing the engagement practices necessary for effective engagement of stakeholders, including at the interpersonal level. These are not limited to the context of IPs but are instead suitable for many contexts where engagement is desired. Desired outcomes capture the goals of stakeholder engagement specific to the IP context, and whereas engagement activities are generic in nature, desired outcomes characterise an IP. Enablers are the engagement practices that bridge the gap between the engagement activities and desired outcomes. Enablers are engagement practices that may be leveraged to achieve the IP-specific goals; they enable the achievement of the desired outcomes through the engagement activities.

The new dimension to the framework seeks only to offer additional handles to understand stakeholder engagement in IPs. As a high-level description of the framework content, it serves as a starting point for users before the complex interconnected nature of the PoE themes emerges as one considers the lower levels of the framework. Thus, these three categories, engagement activities, enablers and desired outcomes, should not be mistaken as an oversimplification of the nature of stakeholder engagement.

6.5 Enhanced stakeholder engagement framework

This section presents the enhanced stakeholder engagement framework. The enhanced framework follows from the conceptual evaluation by means of the investigation into the SWAP network and several semi-structured interviews. The section continues to present a 'framework overview canvas', developed as a high-level summary of the framework content. The overview canvas is designed to present the interconnected nature of the PoE themes in IPs. The framework overview canvas is intended for use in tandem with the stakeholder engagement framework. This looks to optimise the user experience. The concurrent use of the framework and overview canvas is valuable as a management tool for stakeholder engagement in IPs.

6.5.1 Evaluated and adapted framework

The evaluated and adapted framework, or enhanced framework, has a simple structure; implementation criteria are allocated to their respective PoE theme. The framework places the PoE themes and their implementation criteria within one of three categories. These are engagement activities, enablers and desired outcomes.

The enhanced framework is given in Table 26.

Table 26: Enhanced stakeholder engagement framework

PoE theme	Implementation criteria
Engagement activities	
Communication	1. Appropriate communication channels are followed to engage stakeholders 2. Communication gaps are identified and restored 3. Conversations remain constructive 4. IP participants voice their interests and needs 5. Reformulated communication methods allow a common understanding among stakeholders
Conflict management	1. Acknowledge that conflict will happen and must be managed 2. Risks of not meeting expectations are communicated 3. Stakeholder expectations are reasonable 4. Stakeholders are encouraged to communicate their concerns 5. Stakeholders make their expectations known
Managing gender and racial dynamics	1. Awareness of dynamics existing between stakeholders of different races 2. Differing cultural norms do not hinder stakeholder involvement 3. Stakeholders' cultural norms are understood and respected 4. Suitable stakeholders are represented irrespective of race and gender
Managing power dynamics	1. Conflicts of interest are identified and managed 2. Funders' demands are treated with necessary urgency 3. Mechanisms of resistance are recognised and managed 4. Power and influence are decoupled from resource richness 5. Pre-empt and mitigate effects of factors which increase participant vulnerabilities 6. Consider pre-existing power dynamics in the stakeholder network 7. Priorities do not favour some stakeholders over others 8. Shared information is not obscured to benefit of specific stakeholders 9. Stakeholders ground themselves as equal participants in a non-competitive environment 10. Stakeholders value the expertise of other stakeholders
Transparency	1. Outcomes of decision-making are communicated to the stakeholders 2. Enablers of the flow of information between stakeholders exist 3. Information is presented completely and accurately 4. IP is visible to external stakeholders 5. Risks are communicated with the necessary stakeholders 6. Stakeholders are fully informed with accurate information 7. Stakeholders are transparent about their own dealings and expectations
Trust building	1. Credibility is necessary when engaging participants 2. Engage stakeholders in a sincere and respectful manner 3. Visible displays of trustworthiness are recognisable 4. Visible signs of interest in the activities of stakeholders even outside of the context of the IP 5. Vision and direction are important when engaging stakeholders
Enablers	
Facilitation	1. Facilitator identifies and connects stakeholders 2. Facilitator is accessible to stakeholders 3. Facilitator is relevant to the context of the challenge landscape 4. Facilitator is neutral and impartial 5. Facilitator is sensitive to gender and racial dynamics present in the IP 6. Facilitator mediates negotiations and conflicts between stakeholders

PoE theme	Implementation criteria
Monitoring, evaluation and feedback	1. Continuously monitor activities using predefined indicators 2. Feedback guides identification, planning and implementation of interventions 3. Feedback is used as an opportunity to learn and improve 4. Feedback of progress and successes is used to engage stakeholders 5. Impacts of interventions are investigated and reported 6. Participatory monitoring, evaluation and feedback of interventions 7. Research studies used to prove the impacts of interventions
Rolldown of participation	1. Acknowledge stakeholders for their contributions once their participation has concluded 2. Conclusion of a stakeholder's participation is pre-empted and planned 3. Keep stakeholders informed about progress and achievements of initiatives
Strategic representation	1. Appropriate stakeholder identification procedures are in use 2. Beneficiaries are represented in the network of stakeholders 3. Capacity and legitimacy of the stakeholder network is strengthened 4. Dissemination of interventions is strengthened by the represented stakeholders 5. Existing stakeholder networks are leveraged in stakeholder identification 6. Key stakeholders represented to promote the network's legitimacy among stakeholders 7. Potential champions are identified and first to be engaged 8. Resource positioning is strengthened by the represented stakeholders 9. Stakeholders who are experts in the necessary fields are represented 10. Stakeholders willing to exchange knowledge, experiences and insights are represented 11. Stakeholders with capacities and motivation to champion are represented
Visioning and planning	• Challenges present in the contexts for interventions are understood • Define the stakeholder capabilities necessary for interventions • Improving coordination through joint planning of activities • Interventions are realistically achievable • Interventions strategically target areas with greatest impact potential • Interventions support the platform vision and goals • Long-term goals are established and recognisable • Resource requirements are planned • Vision coexists with and supports stakeholders' visions
Desired outcomes	
Alignment	1. Funders' mandates align with the common vision 2. Interests and needs of all stakeholders considered 3. Intervention activities target stakeholder needs, including beneficiary needs 4. Knowledge and information are shared between IP participants 5. Stakeholder visions and directions cooperatively coexist 6. Value contribution of stakeholder participation is clear 7. Vision aligns with the goals of local and/or national government
Championing	1. Champions leverage their resources and capacities voluntarily 2. Champions link the IP to multiple societal levels (local, regional, provincial, etc.) 3. Champions provide entry points to local communities of the marginalised 4. Champions reduce the demand for external knowledge and resources 5. Champions strengthen adoption and dissemination of interventions 6. Champions strengthen the implementation of interventions 7. Champions use social and political efforts to increase awareness of interventions
Implementation of interventions	1. Intended beneficiaries and/or users are sufficiently aware of interventions 2. Intervention activities are executed according to a predefined plan 3. Outcomes of intervention activities are visible 4. Intervention activities realise real socio-economic transformation

PoE theme	Implementation criteria
	5. Stakeholders clearly understand how intervention activities work 6. Stakeholders clearly understand the purpose and benefits of intervention activities
Participation	1. Approaches to encourage involvement in interventions are in place, e.g. incentives for participation 2. Commonly marginalised stakeholders fulfil important roles for implementation of interventions 3. Improved socio-economic positioning and self-worth for the commonly marginalised stakeholders 4. Improved understanding of lifestyle challenges experienced by the commonly marginalised 5. Monitoring, evaluation and feedback is participatory 6. Participation techniques/mechanisms are appropriate to the levels of participation 7. Participatory approach is people-centric to empower participants 8. Stakeholder can access the network's common resource pool 9. Stakeholder roles and levels of participation are appropriate to their capabilities 10. Stakeholders (including the beneficiaries) take ownership of the initiatives 11. Stakeholders are involved in decision-making around issues that affect them 12. Stakeholders are involved in the identification of prospective new participants 13. Stakeholders can access opportunities for capacity development 14. Stakeholders govern the dissemination of information to external parties 15. Stakeholders mobilise their resources and capacities for the network 16. Stakeholders' participation begins early and is sustained 17. Stakeholders share their experiences and insights within the network
Resources and capacity	1. Existing knowledge and resources are acknowledged and used 2. Help stakeholders identify what challenges are present in their context 3. IP advocates for attention to issues on behalf of its stakeholders 4. Resources are directed at implementation areas with promising potential 5. Stakeholder capabilities are developed to support interventions 6. Stakeholders mobilise their resources and capacities for the network
Shared learning	1. IP participants share information, insights, knowledge and experiences 2. Stakeholder capabilities are developed

A 'framework overview canvas' was developed to capture the top-level dimensions of the framework. This is discussed in the next section.

6.5.2 Framework overview canvas

The 'framework overview canvas' was developed as a departure point for the framework user. As the name implies, the canvas is an outline of the stakeholder engagement framework and does not contain all the detail that the framework does. The framework and framework overview canvas should be used concurrently. The framework overview canvas is included at the end of this section (see page 150).

The canvas visually represents the interconnected nature of the engagement practices in an IP. This complex interconnected nature emerged from the preliminary evaluation stage and is an important dimension which had to be captured in the framework. The practical implications of the relationships shared between the PoE themes is that these may be leveraged to strengthen the presence of other themes in a stakeholder network. The canvas was designed to represent this in a simple manner.

To do this, the framework overview canvas lays emphasis on the categorisation of the PoE themes as engagement activities, enablers and desired outcomes. Visual cues describe the interplay between engagement activities and enablers as a strategy for the third category, desired outcomes. Each PoE theme has a unique icon to identify it, while colour-coded categories for the PoE groupings provide a simple approach to follow the framework logic.

A short description of each PoE theme is included in the framework glossary section of the canvas. These descriptions were carefully formulated to relay the core function of each PoE within an IP context as it relates to this research.

It is important to reiterate that the purpose of the visual representations of the framework overview canvas is to improve our understanding of the phenomenon of stakeholder engagement in the context of IPs underpinned by an I4ID philosophy. It is based on the conceptual framework and it is not suitable as a model to predict an outcome.

Stakeholder engagement framework

Engagement activities

- Communication
- Conflict management
- Managing gender and racial dynamics
- Managing power dynamics
- Transparency
- Trust building

Enablers

- Facilitation
- Monitoring, evaluation and feedback
- Rolldown of participation
- Strategic representation
- Visioning and planning

Desired outcomes

- Alignment
- Championing
- Implementation of interventions
- Participation
- Resource mobilisation and capacity development
- Shared learning

Framework glossary

Communication considers the clear articulation of information following appropriate communication channels. Communication must create a common understanding between stakeholders.

Conflict management is the efforts to mitigate all forms of conflict between stakeholders. It aims to maintain a collaborative mood within the stakeholder network.

Racial and gender dynamics refer to the effects of stakeholders' potential racial and gender biases on the stakeholder network. Biases can obstruct participation of certain stakeholder groups.

Managing power dynamics mitigates the effects of power plays on the stakeholder network. Power plays threaten equitable participation in decision-making and other functions.

Transparency considers the visibility of the network and its interventions. It may include the sharing of information and decision-making procedures. It is concerned with the integrity of the network and the stakeholders it represents.

Trust building considers all practices used to establish, develop and maintain trust between stakeholders. It further considers establishment of a trusted network and interventions.

Facilitation uses structures and processes to oversee effective stakeholder engagement through mediation. The facilitator represents the network on the ground.

Monitoring and evaluation is the continuous tracking and appraisal of activities. Feedback is reporting the outcomes. This is important to identify problems and implement improvements of all functions.

Rolldown of participation is anticipating and preparing for stakeholders' departure from the network. They are acknowledged for their contributions to the network.

Strategic representation considers which stakeholders should be represented in the network to strengthen the network functions. Representation must reflect the desired level of diversity.

Visioning is the development of objectives with which all stakeholders in the network can align. This vision guides decision-making. Planning is translating the objectives into executable interventions.

Alignment considers a collaborative mood between stakeholders. Their visions are complementary. It also considers the collective vision to be rooted in the beneficiaries' needs.

Champions are those stakeholders who are eager to see the collective vision realised. By their own initiative, champions act in the interest of the network with greater than expected effort and enthusiasm.

Implementation of interventions considers the appropriateness of interventions to realise the collective vision. It also considers the appropriate execution of the intervention activities.

Participation considers the appropriate level of stakeholder involvement in various network functions. Participation mechanisms are people-centric and empower stakeholders.

Resource mobilisations considers the physical, financial and human resources available to the network. Capacity development considers appropriately developing stakeholder capabilities and strengthening their socio-economic positioning.

Shared learning considers the co-development of capabilities as stakeholders interact in a collaborative mood, sharing their knowledge and experiences.

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6.6 Concluding remarks: Chapter 6

Chapter 6 reports on the construction, evaluation and improvement of the preliminary stakeholder engagement framework towards the development of an enhanced framework. For the preliminary framework, action statements were translated from the inventory of engagement practices. These became the items in the preliminary stakeholder engagement framework and are called implementation criteria. The preliminary framework is simple in structure, with implementation criteria categorised according to the 16 PoE themes.

The second stage of the progressive evaluation approach looked to verify the credibility and confirmability of the framework. The evaluation of the preliminary framework comprised four semi-structured interviews with subject matter experts. The interview participants are familiar with inclusive development initiatives and have experience with stakeholder engagement and management. A discussion guideline was developed to prompt interviewees into discussions around stakeholder engagement and stakeholder networks in their context. They were also asked to comment on the need and suitability of the conceptual framework. The interview data was coded and analysed for the purpose of evaluating the research.

According to the interviewees, a need exists for a conceptual framework to guide stakeholder engagement in collaborative networks. The interviewees were not familiar with any existing frameworks although indicating that such a framework would likely add value to their contexts. The interview data was carefully and systematically analysed to inform the evaluation of the framework. With the interview insight in hand, the framework's content was scrutinised. Several framework items were altered or removed from the framework as these were found to be ambiguous or inappropriate. Other framework items were recategorised as necessary.

The interviews confirmed the inclusion of several framework items while gaps in the framework were also identified. The necessary items were added to the framework and other items refined to appropriately address these gaps. This process strengthened the plausibility of the framework content while further mitigating the presence of biases. In this way, the credibility and confirmability were strengthened for a trustworthy research output. A new framework category and PoE theme, called Rolldown of participation, also emerged from the interviews. This theme considers the importance of pre-empting and planning for the departure of one or several stakeholders from the stakeholder network.

A comparison of the prominence of PoE themes in the literature and the interviews was done. This revealed that IP literature has focused more on resource mobilisation and capacity development; alignment; and monitoring, evaluation and feedback. The interviews contained more instances of strategic representation, participation and managing power dynamics. Despite a difference in the

level of prominence, as the prominence of PoE themes increase in the literature, so they increase in the interviews too.

The outcome of applying the necessary modifications to the preliminary framework is the enhanced stakeholder engagement framework. The enhanced framework includes an additional dimension as PoE themes are categorised as engagement activities, enablers and desired outcomes. Engagement activities consider the PoE themes necessary for effective engagement between stakeholders, including at the interpersonal level. Enablers are the PoE themes which can be leveraged to achieve the IP-specific goals of engagement, called desired outcomes. There is an interplay of engagement activities and enablers. A framework overview canvas was developed to provide a departure point for the framework user. The overview canvas and the framework should be used concurrently. Together, they may serve as a useful management tool for stakeholder engagement in IPs.

In the final stage of the progressive evaluation approach, an industry use case will be used to investigate the relevance and usefulness of the stakeholder engagement framework and framework overview canvas as a management tool. A procedure for using these elements as a management tool is presented. The use case is the final opportunity for the research output to be improved in this study. The case study and application of the stakeholder engagement framework are reported in the next chapter.

Chapter 7: Case study application

Chapter 7 reports on the case study and the application of the conceptual framework in practice as the final phase of the progressive evaluation approach. The chapter first presents the criteria for the appropriate case followed by the procedure for data collection and analysis. The important ethical considerations of this case study are highlighted before the case is described. The description of the case places emphasis on our use of the innovation ecosystem perspective to conceptualise an innovation platform (IP) and its stakeholder network. The application of the enhanced stakeholder engagement framework and framework overview canvas is reported and displays their suitability as a tool to manage stakeholder engagements. The chapter ends with final modifications to the framework and critical reflections on the case.

Chapter outcomes	1. Discuss the criteria for the appropriate case
	2. Describe the procedure for data collection and analysis
	3. Present the important ethical considerations for the case study
	4. Describe the challenge landscape of this case study
	5. Describe the IP under observation
	6. Describe the 'ecosystem' around the IP
	7. Describe a process for applying the conceptual framework
	8. Apply the conceptual framework to issues identified in the case
	9. Report on the findings of the case study
	10. Reflect on the significance of these findings

7.1 Selecting the appropriate case

The appropriate case would present the opportunity to investigate the conceptual framework's suitability as a management tool for stakeholder engagement to address the last of the research objectives. Enough case study resources are needed to develop a proper understanding of the case.

The research objectives require the analysis of an existing IP. The challenge landscape would include issues affecting social and economic development and focus strongly on the social health determinants of stakeholders at the base of the pyramid (BOP). The case should consider an IP which is active and has interventions (innovations) in operation which are directed at addressing the needs that exist within its challenge landscape.

The case reported in this chapter meets the requirements discussed above. What made this case particularly attractive was that the IP operates in Stellenbosch, simplifying access to interview participants. The IP also addresses a very visible problem in society; vagrancy and the issues that surround it. The IP represents an ideal example of interventions aimed at empowering BOP stakeholders by encouraging a dramatic transformation of the lives of vagrants in Stellenbosch. This has a paramount effect on the social determinants that impact the health of these individuals.

The case further shows the diversity of opportunities and approaches which may be adopted to strengthen the health of South Africa's population.

7.2   Approach to data gathering and analysis

Data gathering for the case study relied on several semi-structured interviews. These were conducted in three phases: (1) a workshop with the IP's network champion; (2) interviews with representatives of the stakeholders participating in the IP; and (3) a feedback session with the network champion.

In the first phase, the researcher invited the IP's network champion to participate in a workshop where the enhanced stakeholder engagement framework and the framework overview canvas were presented. A critical discussion took place around the framework, its purpose and its potential as a tool for managing stakeholder engagements. The network champion explained the history of the stakeholder network that would be analysed as an IP in the case study.

The IP participant interviews in the second phase of data gathering had a threefold purpose: (1) to better describe the IP under observation; (2) to discover the stakeholders who are not IP participants but operate in a broader 'ecosystem'; and (3) to discover the 'climate' of stakeholder engagement in the IP for the purpose of applying the conceptual framework. Three interviews were subsequently conducted. There are three organisations participating in the IP alongside the organisation represented by the network champion. However, representatives from only two organisations were willing to participate in the research. Local government is another stakeholder participating in this IP and the appropriate representative agreed to be the third interview participant. The email correspondence with the interview participants was also considered as a data source for analysis.

Interview protocols guided the interview process in the second phase of data gathering. The guidelines were tailored to obtain the appropriate information from each interview participant. The workshop and all the interviews were recorded for analysis. Additional information obtained from the websites of the organisations participating in the research complemented the interview data.

Analysing the data followed a process of transcribing the interview recordings and reflecting on the content. Special consideration was given to the interviewee's 'position' in the IP to better understand their perceptions of engagement in the IP. The conceptual framework and framework overview canvas were used by the researcher to map the presence of engagement issues, propose reasons for these and to formulate recommendations for improved engagements. These recommendations were formulated considering the network champion as the target audience.

A feedback session with the network champion in the third phase of data gathering sought to: (1) verify the researcher's interpretations of the case; and (2) to present the network champion with

the recommendations for improved stakeholder engagement within their IP developed using the conceptual framework. The network champion was invited to comment on the appropriateness and perceived relevance of these recommendations. This served to prove the conceptual framework's potential as a management tool for stakeholder engagement in the IP context.

7.3   Ethical considerations of the case study

Strict confidentiality has been exercised during the data gathering process and when reporting on the case study to comply with the conditions for ethical research. The nature of stakeholder engagement is that the personal views and experiences of those individuals who represent the stakeholders in the case contribute to the engagement climate. It is not the intention of the researcher to interfere with the work that each of the stakeholders is doing to address the challenge landscape, in both their personal capacity and the collective capacity of the IP.

7.4   Case study overview

IPs are developed to address a specific set of challenges [11], [21], [22]. It is important to first understand the challenge landscape of this case study before the IP stakeholder network is introduced. The discussion about the challenge landscape was primarily informed by the views and descriptions of the case interview participants.

7.4.1 The challenge landscape: vagrancy in Stellenbosch

Vagrancy is a visible problem in towns and cities across South Africa. Over recent years, there has been a visible increase in vagrancy in Stellenbosch. This is despite several organisations who offer services to support and empower vulnerable persons, including the homeless. Homelessness is a complex issue caused by structural and systemic factors (housing shortages, unemployment, inadequate social support and services, etc.), and personal factors (domestic violence, sexual abuse, poverty, poor mental health, etc.) [203], [204]. One reason for the rise in vagrancy in Stellenbosch is the active cash economy on the streets; the ease of access to cash through begging. Requests for non-cash items, such as food and clothing, are also common. However, the negative impact of this form of giving has become clear and may be regarded as 'irresponsible giving' [205].

Irresponsible because, though likely motivated by good intention, the influx of cash on the streets increases recipients' access to alcohol and drugs, in some cases fuelling habits that are detrimental to their well-being. Studies have shown that substance dependence in vagrants intensifies their vulnerabilities [206]. These include poor levels of health and high risk of physical harm, often coupled with low levels of emotional and social well-being. Further challenges faced by vagrants include navigating by-laws which criminalise homelessness (see [207]), police brutality, sexual abuse and inadequate access to healthcare [203].

In contrast with the above, 'responsible giving' provides individuals with opportunities to access the services and treatment that they need before lasting housing and re-establishment into a community can be achieved [206]. Responsible giving requires responsible receiving; recipients should take responsibility for the opportunities presented to them. Giving responsibilities rather than handouts acknowledges the recipient's humanity and inherent value.

7.4.2 An innovation platform to eradicate vagrancy in Stellenbosch

There are several diverse stakeholders of the challenges of vagrancy in Stellenbosch. In addition to the vagrants themselves and the not-for-profit organisations (NPOs) offering them support services, stakeholders include the general public, local government (municipality), social service actors, academia, churches and law enforcement. It can be argued that these stakeholders make up an 'ecosystem'.

At the centre of the ecosystem is a network, or IP, of key stakeholders who are collaborating to promote responsible giving and provide the general public with a means to do this. The participating stakeholders comprise local NPOs who provide services that address the needs of the homeless. The IP functions because their services complement each other, together offering holistic support to the beneficiaries. The municipality is also an important stakeholder participating in the IP, providing political capacity and strengthening legitimacy.

The IP participants have a collective vision of a responsible giving culture and the eradication of vagrancy in Stellenbosch. The IP's primary intervention towards achieving this vision is a coupon system which offers the general public an alternative to giving cash, food and clothing to those begging in Stellenbosch. The coupon gives recipients access to a holistic portfolio of support services from the participating organisations. Giving a coupon fosters mutual respect and dignity during interactions between the general public and the beneficiaries. The public can purchase a coupon at a cost of R10 from over 50 local businesses. Figure 37 displays an example of the coupon.


Figure 37: Coupon for responsible giving (Source: [208])

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The coupon provides only for basic needs and cannot be exchanged for cash. It grants the recipient access to one of three services as indicated by the icons on the coupon (see Figure 37): a blanket, a meal or one night's stay at the local night shelter (which includes dinner and breakfast). The recipient chooses which service they want to access. They may be referred by these organisations to additional services provided by other ecosystem stakeholders, should these be required.

The IP manages a distribution network for the coupons of over 50 local businesses. The businesses are ecosystem stakeholders who are important for the implementation of the intervention, but do not participate directly in the IP. The general public are another ecosystem stakeholder and the user of the intervention, referring the beneficiaries to the services of the IP organisations. Therefore, the success of the intervention relies on the public's awareness of the purpose and impact of the coupons. Again however, the public do not participate directly in the IP. Finally, the homeless and others in need on the streets of Stellenbosch are the primary target beneficiaries of the intervention but do not participate directly in the network.

7.4.3 Conceptualising the ecosystem through the innovation ecosystem lens

Figure 38 illustrates our conceptualisation of the 'ecosystem' of stakeholders of vagrancy in Stellenbosch. We place the IP at the centre of the ecosystem. The stakeholders participating in the IP are the partnering NPOs and the municipality. The stakeholders in the immediate vicinity of the IP are other organisations and institutions that work with vagrants and these include social service actors, academia, churches and law enforcement. On the periphery of the ecosystem are the stakeholders who interact with the beneficiaries and who are the targets of begging. These include the general public, tourists and local shops and restaurants.
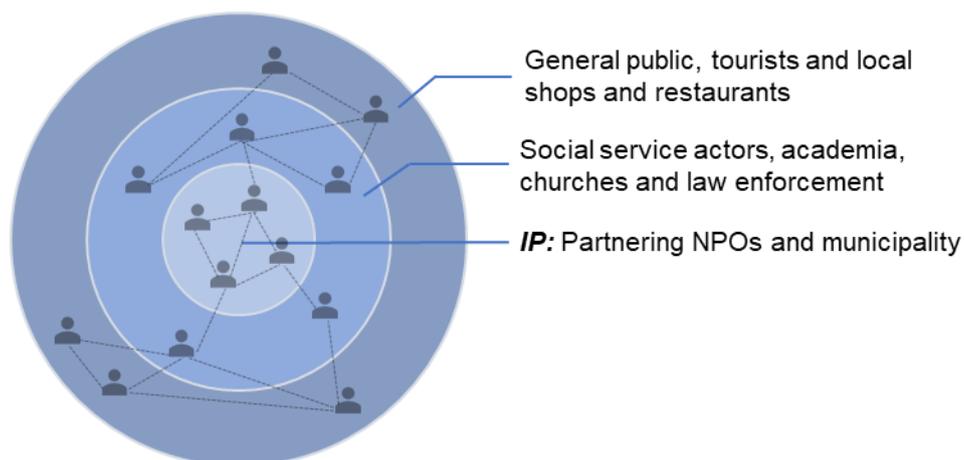
Figure 38: Ecosystem of stakeholders of vagrancy in Stellenbosch with IP at the centre

Building on previous research [24], [105], [115], we adopt the IP as the unit of analysis. The IP enables value-creating interactions between the other stakeholders in the ecosystem through its coupon intervention, giving the periphery stakeholders a means of interacting constructively with the beneficiaries; by referring them to the services of the IP stakeholders and those in the

immediate vicinity of the IP. In effect, the IP manages the concertation and coordination of the ecosystem.

Previous uses of the ecosystem perspective to analyse IPs considered activities, actors, positions and links as elements for analysis [105]. In our analysis of the case, the engagement practices between IP stakeholders are the unit of observation. Though focusing at the IP level, the analysis considers the impact of the engagement practices on the broader stakeholder network and ecosystem. The climate for engagement in the IP may be perceived by observing the engagement mechanisms and dynamics at play in the IP and the broader ecosystem. The stakeholder engagement framework in conjunction with the framework overview canvas will be applied to: (1) interpret the collaborative mood between IP participants; and (2) make appropriate recommendations about the engagement activities, enablers and desired outcomes of stakeholder engagement in the IP space.

With the help of the innovation ecosystem lens, the evolutionary features of the relationships and interactions between IP participants and between the other ecosystem stakeholders may be understood.

7.5 Applying the conceptual framework in the case study

Potential issues regarding stakeholder engagement were identified in the analysis of the case study data. Using the conceptual framework and the framework overview canvas, a systematic process to formulate recommendations for addressing these issues verifies their suitability and relevance in this regard and promotes transparency in the research. The recommendations consider the IP's network champion as the target audience.

In this section, attention is given to how the framework and framework overview canvas are applied. Five important engagement issues have been selected and the process of formulating recommendations for these is reported. The recommendations consider the IP's network champion as the target audience.

It must be acknowledged that this case study did not provide the opportunity for all practices of engagement (PoE) themes contained in the framework to inform the recommendations; however, it provided the opportunity to display the framework's value and relevance.

7.5.1 Differentiating between 'expressed' and 'implied' issues in stakeholder networks

Five issues, which are potentially detrimental to the collaborative climate in the IP or which present opportunities for strengthening the IP's intervention, were identified. The researcher's observations during the data collection process informed their identification of these issues.

The researcher noticed that there were instances where stakeholders expressed an issue; they would often express a need or a concern and follow it with an explanation. In other instances, the researcher perceived the presence of an issue that was not expressed. Rather, the issue emerged as different interview participants described their experiences within the stakeholder network and when they independently referred to the same event or situation. This brought to light an interesting phenomenon that can be described with the assistance of Figure 39.
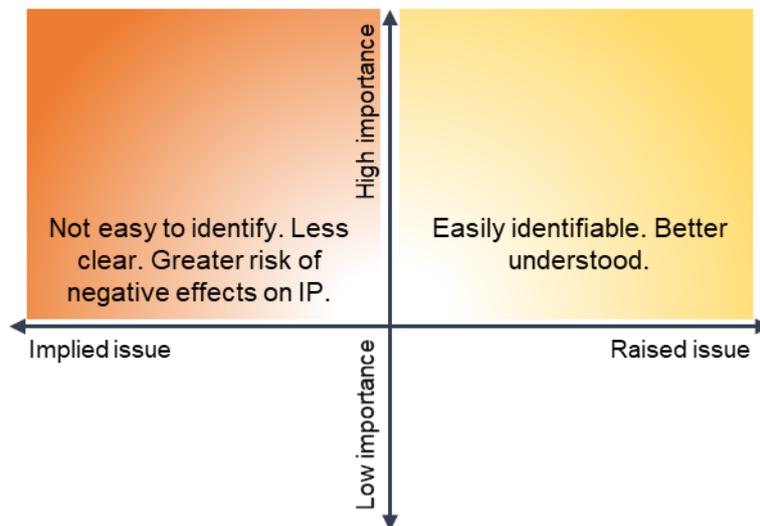

Figure 39: The presence of expressed and implied issues in stakeholder networks

Figure 39 offers a lens to analyse the issues. Issues that are not expressly stated by any stakeholders are categorised as 'implied'. Those issues that are clearly expressed are categorised as 'raised'. When issues that may impact an IP's functioning and the collaborative mood between stakeholders are expressed, they are easily identifiable and therefore better understood. These are likely to come to light during informal interactions between stakeholders and at formal meetings of several IP participants. When issues are identified and understood, they can be directly addressed. However, when impactful issues are not expressly stated or are implied 'between the lines', they become more difficult to identify and may pose a risk to the IP's functioning and to the collaborative mood. These issues may be less clearly defined and complicated. If they are not brought to light, they could have negative consequences for the stakeholder relationships.

Figure 40 is the product of categorising the five issues that were addressed in this case study as 'implied' or 'raised' (these issues will be formally introduced and discussed in Section 7.5.3 along with the framework's application).
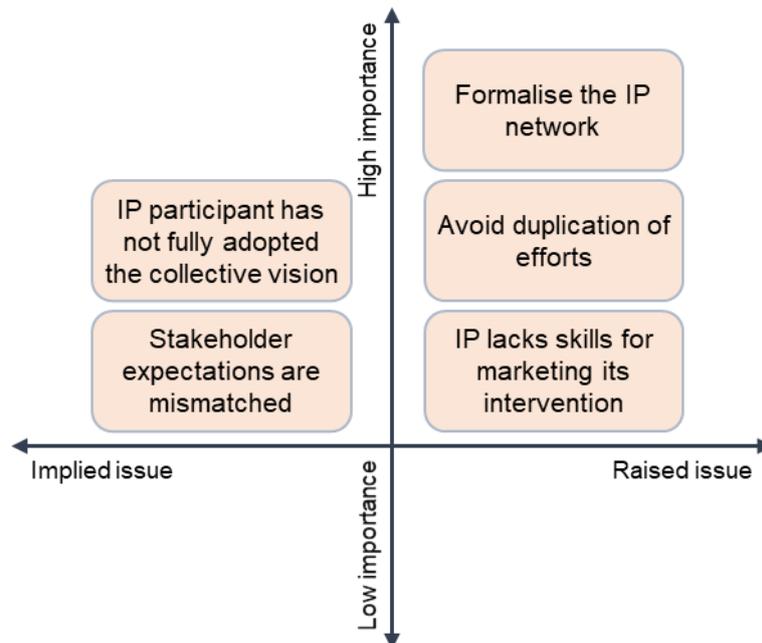
Figure 40: Issues addressed in the case study categorised as 'implied' and 'raised'

It becomes necessary to consider how stakeholder engagement could be approached to ensure that those issues that are not expressed, and lie on the left-hand side in Figure 40, may be 'shifted' to the right, where they are expressed. Those with an interest in the issues that may be present in an IP, or similar stakeholder networks, should investigate what these 'implied' issues might be. The approach of visiting different participating stakeholders independently in the case study proved useful to identify these issues. However, this may not be suitable for IPs with many participating stakeholders and other approaches to this should be investigated. Therefore, this has been identified as an area for further investigation in future research (see Section 9.5).

7.5.2 A process for using the conceptual framework

Figure 41 presents the procedure for using the conceptual framework and the framework overview canvas, starting with an identified issue and ending with the recommendations for addressing the issue.
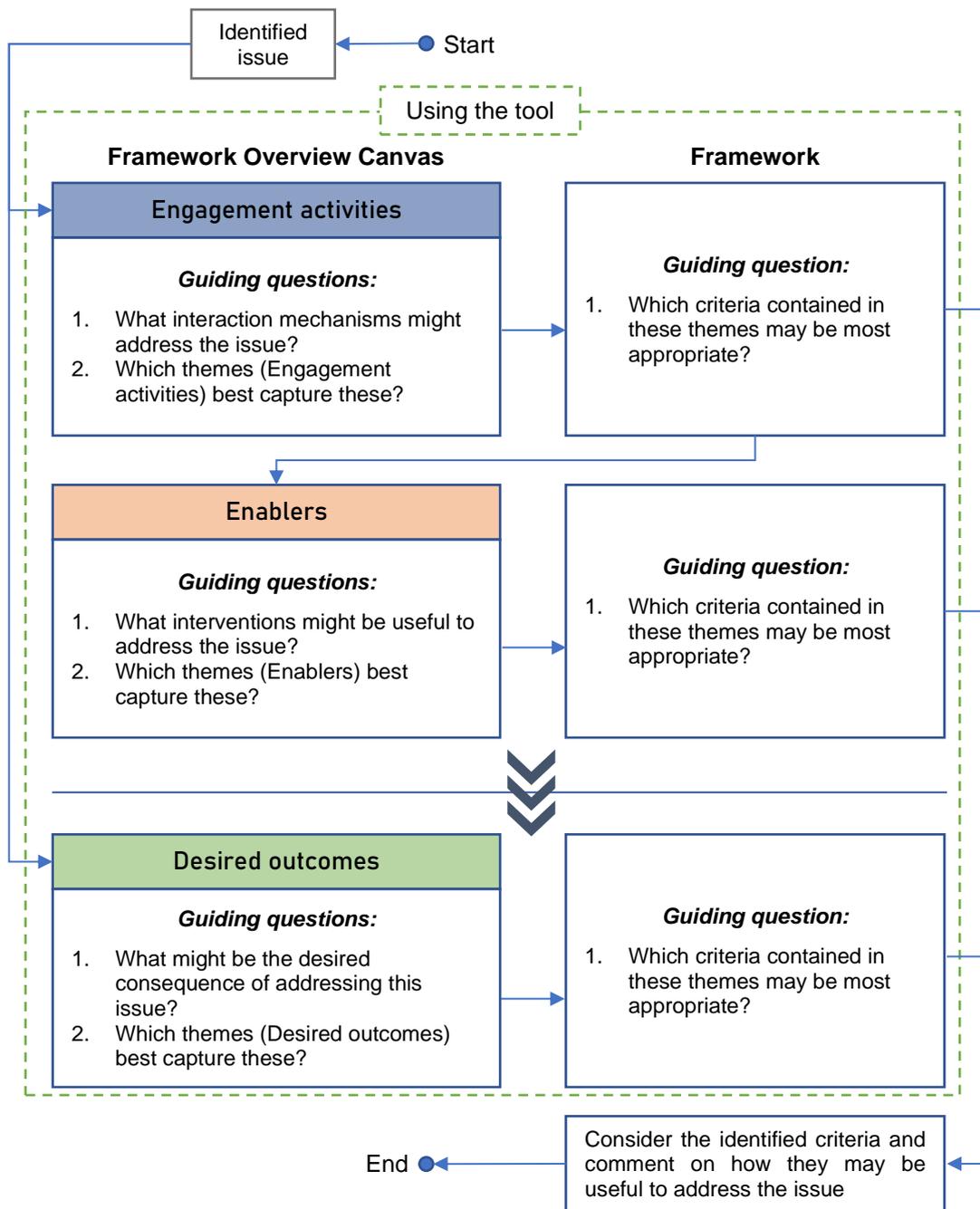
Figure 41: Procedure for using the conceptual framework and framework overview canvas

Figure 41 includes the same three broad categories of the framework overview canvas: engagement activities, enablers and desired outcomes. Arrows direct the user's attention from one category to the next, alternating between the framework overview canvas and the framework. With the issue in hand, the user considers first the desired outcomes and the engagement activities most relevant to it. Then the user considers what enablers might support addressing the issue, keeping the selected engagement activities and desired outcomes in mind. Guiding questions in each stage of the process offer the user additional guidance. This procedure is not limited to consecutive steps; rather, the steps are interrelated and should be approached in an iterative fashion.

The identified issue should be understood properly as the application of the framework requires the user to consider the past, current and future impacts of the issue on aspects of an IP's engagements.

7.5.3 Addressing issues in the IP using the conceptual framework

Five issues related to the IP were addressed in this case study to direct the use of the conceptual framework and the framework overview canvas in practice. These issues are described in Table 27. Whether the issue was 'raised' or 'implied' is indicated in the table and the final column refers the reader to the page where the recommendation of each issue is reported.

Table 27: Issues addressed in the case study

Issue	Discussion	Recom-mendation
Formalising the network (Raised)	One interview participant expressed their need for the network processes to be formalised. They recognise that the other network stakeholders do not have this need. The network champion also mentioned that a more formalised network may have additional benefits for the network. It is recommended that an approach for more formalised engagements be considered. However, the role of informal interactions in stakeholder networks should not be overlooked.	Table 28 (page 165)
Lack of skills necessary to market the IP intervention (Raised)	Several interview participants alluded to a need to increase the general public's awareness of responsible giving and the coupon intervention. One interviewee associated this with a lack of the marketing skills necessary to achieve greater dissemination of the information and adoption of the intervention. It is recommended that the appropriate individual/organisation be added as a participant in the stakeholder network to champion the marketing of the intervention.	Table 29 (page 167)
Avoid the duplication of efforts (Raised)	When different stakeholders offer the same service to the same beneficiary, valuable resources are wasted. It also creates an opportunity for vagrants to take advantage of the system and access the same services at multiple points. One interviewee acknowledged that the stakeholders are very strict about not having the services duplicated. However, as each organisation evolves, their service offerings evolve, and the risk of duplication exists. It is recommended that opportunities are created for engagement and coordination between the stakeholders to avoid the duplication of efforts.	Table 30 (page 169)
IP participant has not fully adopted the collective vision (Implied)	The network champion perceives the relationship with one network participant to be strained. They have not been the best 'team player' compared to the other IP participants. The network champion perceives this participant's willingness to collaborate as volatile. This participant seemingly does not recognise their important role in this network and thus their engagements have often been marked by hesitancy on their part. It is known that they have referred to themselves as a 'sleeping partner' in the network. It is recommended that engagement mechanisms are put in place to strengthen the alignment between this stakeholder and the network.	Table 31 (page 170)

Issue	Discussion	Recom-mendation
Stakeholder expectations are mismatched (Implied)	The case interviews revealed that misalignment of expectations among the stakeholders exists, specifically where certain stakeholders underestimate what other stakeholders are working to achieve. It seems that this has not yet had any visibly negative effects on the collaborative mood; however, it remains a risk to be addressed.	Figure 42 (Page 164)

A 'process canvas' was designed to closely resemble Figure 41; the procedure for using the conceptual framework and framework overview canvas. Therefore, the process canvas offers the user a structure which they may populate with information from the conceptual framework and make comments. The comments serve as small discussions while the criteria form the backbone of the recommendations. Figure 42 on page 164 is an example of how the process canvas is used, focusing here on addressing the issue of the mismatched stakeholder expectations. The remaining issues are addressed using the same procedure; however, rather than report these using the process canvas, they are reported in tables to capture the information necessary to formulate the recommendations while maintaining the document's simple structure.

It is recommended that the reader visits each issue and its recommendations independently to assist their understanding of how the issue might be addressed appropriately. Therefore, the reader should first consider the discussion of an issue in Table 27 and then refer to the output of the framework application process at the appropriate position in the document.

The next section includes a reflection on the application of the conceptual framework and framework overview canvas as a tool for managing stakeholder engagements in IPs.

Framework Overview **Framework** **Comments**

| Engagement activities | • Communication gaps are identified and restored
• Risks of not meeting expectations are communicated
• Stakeholder expectations are reasonable
• Stakeholders can communicate their concerns, e.g. presence of a facilitator
• Stakeholders make their expectations known
• Stakeholders are transparent about their own dealings and expectations
• Vision and direction are important when engaging stakeholders | The risk of misunderstandings and communication gaps increases when stakeholders' expectations are misaligned. Communication channels must be 'opened' and directed to allow each stakeholder's vision and what they expect from other stakeholders to be known. Each stakeholder should be clear on what can be expected of them. |

Engagement activities:
• Communication
• Conflict management
• Transparency
• Trust building

| Enablers | • Facilitator is neutral and impartial
• Facilitator mediates negotiations and conflicts between stakeholders | Facilitating these conversations may be useful to encourage stakeholders to engage appropriately. The necessary conversations around stakeholder expectations may be probed by a facilitator, where previously these conversations may have been overlooked. |

Enablers:
• Facilitation

| Desired outcomes | • Stakeholder visions and directions cooperatively coexist
• Value contribution of stakeholder participation is clear | All stakeholders understand what is expected of them and what should be expected from the other stakeholders. This clarifies the role that each stakeholder has in the IP and the value that they contribute. |

Desired outcomes:
• Alignment

Figure 42: Recommendations for addressing the misalignment of stakeholder expectations using the process canvas

Table 28: Recommendations for addressing the issue of formalising the network

	Canvas	Framework	Comments
Engagement Activities	Communication	• Conversation remains constructive • Participants voice their interests and needs • Reformulated communication norms allow common understanding between stakeholders • Communication gaps are identified and restored	How stakeholders communicate with one another must be carefully managed to encourage constructive engagement. Reformulating norms of communication may involve considerations such as tone of voice, how stakeholders address one another, the use of social cues and physical gestures during conversation.
	Conflict management	• Acknowledge that conflict will happen and must be managed (it cannot be wished away) • Stakeholders are encouraged to communicate their concerns • Stakeholders make their expectations known • Stakeholder expectations are reasonable • Risks of not meeting expectations are communicated	Conflict management may be required when stakeholders come together; however, it may also be a motivation for formalised engagement processes. Formalised interactions may be a platform where misunderstandings are addressed, and concerns expressed and resolved.
	Managing power dynamics	• Conflicts of interest are identified and managed • Mechanisms of resistance are recognised and managed • Consider pre-existing power dynamics in the stakeholder network • Priorities do not favour some stakeholders over others • Shared information is not obscured to benefit specific stakeholders • Stakeholders ground themselves as equal participants in a non-competitive environment • Stakeholders value the expertise of other stakeholders	Power plays can be detrimental to the functioning of the platform. Power dynamics may be most prominent during times of conflict. Mismanaged power dynamics may lead to stakeholders walking away from a meeting and could progress to their departure from the network. Power dynamics are indicative of a network's engagement climate. A non-competitive environment is important in the context of an NPO network because they may be more prone to competing than collaborating (e.g. competing for the same funding).
	Trust building	• Visible displays of trustworthiness are recognisable • Visible signs of interest in the activities of the stakeholders even outside the context of the network	Formalised meetings of network stakeholders may further provide an opportunity for the levels of trust between stakeholders to increase. Trust building is important for collaborative networks.

	Canvas	Framework	Comments
Enablers	Facilitation	• Facilitator is neutral and impartial • Facilitator is relevant to the context of the challenge landscape • Facilitator mediates negotiations and conflicts between stakeholders	When representatives of the participating stakeholders come together, the presence of a facilitator may be helpful. The facilitator should be respectful and should not be perceived as a threat by any of the stakeholders. They serve to guide and mediate the engagement process only. They should not be a stakeholder of the challenge landscape.
Desired outcomes	Alignment	• Interests and needs of all stakeholders considered • Intervention activities target stakeholder needs, including beneficiary needs • Knowledge and information are shared between IP participants • Vision aligns with the goals of local and/or national government	A large benefit of introducing more formalised engagements into the network is the strengthening of alignment between the participating stakeholders.
	Shared learning	• IP participants share information, insights, knowledge and experiences • Stakeholder capabilities are developed	Formalised engagements may encourage a culture of stakeholders exchanging knowledge and experiences. This form of shared learning may assist each stakeholder in their personal approach to addressing the challenge landscape.

Table 29: Recommendations for addressing the lack of skills necessary for marketing the intervention

	Canvas	Framework	Comments
Engagement Activities	Communication	• Appropriate communication channels are followed to engage stakeholders	Stakeholders should be engaged following the appropriate procedures, especially in the absence of a pre-existing relationship.
	Trust building	• Credibility is necessary when engaging participants • Engage stakeholders in a sincere and respectful manner • Visible displays of trustworthiness are recognisable • Vision and direction are important when engaging stakeholders	It is necessary to establish, build and maintain trust relationships with stakeholders who are to become participants in the network. Credibility and a clear vision play an important role to earn a stakeholder's trust.
Enablers	Visioning and planning	• Challenges present in the context of interventions are understood • Define the stakeholder capabilities necessary for interventions • Interventions strategically target areas with the greatest impact potential (e.g. tourists) • Resource requirements are planned	Visioning and planning are a strategy to better understand the need at hand. These are appropriate to investigate the resources and skills required and thus help to identify a potential participant with the necessary capabilities.
	Strategic representation	• Appropriate stakeholder identification procedures are in use • Existing stakeholder networks are leveraged in stakeholder identification • Stakeholders with capacities and motivation to champion are represented • Dissemination of interventions is strengthened by the represented stakeholders • Stakeholders who are experts in the necessary fields are represented • Resource positioning is strengthened by the represented stakeholders • Stakeholders willing to exchange knowledge, experiences and insights are represented	The addition of stakeholders to a network should be a strategic consideration. Several formalised stakeholder identification procedures are available; however, the network's informal nature may require a similarly informal approach to stakeholder identification. It is common to look to existing relationships with stakeholders from different networks for potential participants.
Desired outcomes	Championing	• Champions reduce the demand for external knowledge and resources • Champions strengthen adoption and dissemination of interventions • Champions strengthen the implementation of interventions • Champions use social and political efforts to increase awareness of interventions	A stakeholder who will take initiative, leverage their own capacity and resources alongside those of the other network stakeholders, is desirable.

Canvas	Framework	Comments
Implementation of interventions	• Intended beneficiaries and/or users are sufficiently aware of interventions • Stakeholders clearly understand how intervention activities work • Stakeholders clearly understand the purpose and benefits of intervention activities	It is important to consider where to focus around the issue to gain the most traction as early as possible. One interview participant alluded to the importance of informing the tourists who come and go from Stellenbosch daily. The tourism industry may then present the most viable audience for the campaign

Table 30: Recommendations for addressing the issue of avoiding the duplication of efforts in the network

	Canvas	Framework	Comments
Engagement Activities	Transparency	• Outcomes of decision-making are communicated to the stakeholders • Stakeholders are transparent about their own dealings and expectations	Each stakeholder must be encouraged to openly share their approach to serving the beneficiaries of their services. Any major organisational decisions which would be necessary to share with the network participants, should be.
	Trust building	• Engage stakeholders in a sincere and respectful manner • Visible displays of trustworthiness are recognisable • Visible signs of interest in the activities of stakeholders even outside of the context of the IP • Vision and direction are important when engaging stakeholders	The history of a culture of competition between these stakeholders might make them weary to share about their services and other dealings. Intentionally forging trust between the stakeholders will benefit the collaborative mood.
Enablers	Visioning and planning	• Improving coordination through joint planning of activities	As stakeholders share their approach to addressing the challenge landscape, other stakeholders would do well to listen and identify potential opportunities for coordination. Coordinating activities pools resources together to achieve more, while duplication wastes resources to underachieve.
	Monitoring, evaluation and feedback	• Feedback guides identification, planning and implementation of interventions • Feedback is used as an opportunity to learn and improve	A space for stakeholders to offer feedback on their performance may assist in identifying areas for improvement. Feedback of coordinated activities allows for improvement of these activities.
Desired outcomes	Resource mobilisation and capacity development	• Existing knowledge and resources are acknowledged and used • Resources are directed at implementation areas with promising potential • Stakeholders mobilise their resources and capacities for the network	Coordinating activities rather than duplicating efforts strengthens the collective resource position of the stakeholder network. Resources are better dispensed when they can service coordinated activities. Through coordinating different activities, stakeholders have greater capacity to focus on other areas for intervention.

Table 31: Recommendations for addressing an IP participant's lack of alignment with the collective vision

	Canvas	Framework	Comments
Engagement Activities	Conflict management	• Stakeholders are encouraged to communicate their concerns • Stakeholders make their expectations known	The collaborative mood with this stakeholder is often strained. This increases the risk of conflict with them. To manage conflict, engagements must encourage all stakeholders to bring their concerns to light so that they may be addressed. Each stakeholder's expectations should be well communicated.
	Managing power dynamics	• Mechanisms of resistance are recognised and managed • Consider pre-existing power dynamics in the stakeholder network • Stakeholders ground themselves as equal participants in a non-competitive environment	The stakeholder representative participating in the network has come across as hesitant to coordinate and even insecure. This has been a form of resistance to the collaboration, even if unintentional. The stakeholder must see themselves as a true participant in the network, with equal importance as the other network participants.
	Trust building	• Engage stakeholders in a sincere and respectful manner • Visible displays of trustworthiness are recognisable • Visible signs of interest in the activities of stakeholders even outside the context of the IP • Vision and direction are important when engaging stakeholders	Effort should always be made to strengthen the trust between network stakeholders, especially with this stakeholder. Despite a strained relationship, interactions should be respectful and sincere. Identifying commonality between the visions of this stakeholder and those of other stakeholders may contribute to an improved relationship of collaboration.
Enablers	Visioning and planning	• Improving coordination through joint planning of activities • Define the stakeholder capabilities necessary for interventions • Vision coexists with and supports stakeholders' visions	Collectively developing an understanding of the capabilities (knowledge, skills and resources) needed may be useful for the stakeholder to understand the value that they contribute to the network as they see where they are able to meet one or several of its needs. The joint planning of activities may present an opportunity for the stakeholder's vision to be better accommodated by the collective vision. This may help to strengthen the alignment with this stakeholder and improve the engagement experiences with them.

	Canvas	Framework	Comments
	Rolldown of participation	• Acknowledge stakeholders for their contributions once their participation has concluded • Conclusion of a stakeholder's participation is pre-empted and planned	In the case that the collaborative relationship with the stakeholder remains strained, they may not be suitable as a long-term participant in the network. It is necessary to pre-empt and plan for the departure of a stakeholder from the network while still protecting the relationship with them.
Desired outcomes	Alignment	• Stakeholder visions and directions coexists cooperatively • Value contribution for stakeholder participation is clear	It is necessary to strengthen the alignment between the stakeholder and the network. The value contributed by this stakeholder must be clearly communicated to them. The potential value that the network offers the stakeholder should be clarified. It should help if this stakeholder understands what the value of their contribution is as perceived by the other stakeholders in the network, i.e. why they are not only a sleeping partner.

7.5.4 Feedback on the recommendations

The five impactful issues identified in the case study and the recommendations to address these were presented to the IP's network champion. The network champion regarded the identified issues as pertinent and necessary to address. The network champion mainly focused on two of the five issues in the discussion: the issue of the IP participant who has not fully adopted the collective vision; and the issue of formalising the network.

Considering first one IP participant's lack of alignment with the common vision, the network champion perceived the state of the relationship with this stakeholder to have worsened since they first met with the researcher in the case study workshop. It was expected that this participant's departure from the network was imminent. The recommendation to address this issue had accounted for the stakeholder's departure if efforts to improve the relationship were unsuccessful. The researcher explained the importance of preparing for the stakeholder's departure and ensuring that the process remains civilised as far as possible. The network champion appreciated the importance of acknowledging the contributions of the stakeholder despite a strained relationship.

Considering the issue of formalising the network, the network champion did find the recommendation to address this as relevant. However, what the recommendation did not account for was the stakeholders' resistance to formal meetings. The network champion attributes this to a long history of formal meetings that did not offer any progress towards solutions to the challenges faced by the stakeholders in the past. Therefore, it may be that the stakeholders see these formalised meetings as a waste of time. This issue is specific to this stakeholder network and may not be true of all networks. Despite this challenge, the network champion welcomed the idea of an independent and context-specific facilitator to mediate these meetings.

The network champion also mentioned that a stakeholder to support the marketing of the intervention had been approached by the network. This had already formed part of the recommendation to address the lack of skills necessary for the marketing of the intervention. This was a positive sign that the management tool can inform the development of recommendations which are relevant and appropriate to address an issue.

7.6   Modifications to the framework

The case study provided a further opportunity to verify and refine the content and structure of the stakeholder engagement framework. No significant modifications were made to the framework's content and structure, though changes were made to the vocabulary of some framework items to improve their clarity. The framework overview canvas was left unchanged.

The development of the procedure for using the conceptual framework and the framework overview canvas (see Figure 41 on page 161) and a process canvas to guide the user (see for

example Figure 42 on page 164) are both significant additions to the overall management tool for stakeholder engagement.

The critical discussion with the network champion in the case workshop highlighted one potential oversight of the framework; though the framework accounts for the presence and influence of an individual's racial and gender biases in stakeholder engagements, it does not yet account for the presence and influence of other biases which may be either: (1) inherent biases due to our evolutionary past or (2) acquired biases from our development and exposure to our personal and working environments [209]. The significant impact that cognitive biases have on our decision-making abilities is well researched and studies have investigated a concept known as 'debiasing' (see for example [210], [211]).

The network champion recognised the effects of cognitive biases on the stakeholder engagement experiences in the case IP. Understanding an individual stakeholder's biases is a psychological science that requires significant attention if we are to properly investigate their impact on stakeholder engagement. This has been assigned as a recommendation for further investigation in future research (see Section 9.5).

7.7   Reflections on the case study

This section presents the important reflections after completion of the case study analysis and framework application process. Discussions are developed to present the reader with the valuable observations from the case that both corroborate the research output and highlight opportunities for further investigation.

7.7.1 Reflecting on the application of the framework

The stakeholder engagement framework and framework overview canvas were successfully used to make recommendations for improved stakeholder engagements in the IP. Several engagement issues experienced by the IP were addressed. This verifies the transferability of the research output as the framework content can appropriately contribute to the context of the case despite being developed from multidisciplinary sources. The transferability of the research output is another important consideration for valid and reliable research [81], [85].

The credibility of the framework and its overview canvas as a tool for managing stakeholder engagements in an IP context was verified in the case study. These components may benefit from exposure to additional case studies and pilot studies to further refine the tool's content and structure [87], [89], and possibly adapt it further for use in other contexts. A single use case was enough for the purposes of this research study and this was further motivated by time constraints.

The recommendations were directed at the network champion in this case study; however, the tool maintains its potential to be suitable for a much broader target audience, including those in both

research and practice. The tool was applied by the researcher to formulate the recommendations but in practice it may be applied by network champions, facilitators, external consultants and the like, and may also be useful in group settings.

7.7.2 Reflecting on the innovation platform

The stakeholder network at the centre of the ecosystem reflects an innovation platform (IP) in that diverse stakeholders participate in a collaborative network around a specific challenge landscape. The network is the 'platform' for value-creating interactions between NPOs and local government, where together these stakeholders seek opportunities to address the challenges and achieve a shared objective.

An important characteristics of IPs is that they drive learning and change [11], [21], [22]. The network intervention and the distribution of coupons is complemented by posters advertising the intervention and newspaper articles describing how it works, in this way informing the public of the risks of irresponsible aid. The network encourages responsible giving to empower vagrants in Stellenbosch and have a lasting socio-economic impact on their lives. Another important characteristic of IPs is that IP goals align with the needs of all stakeholders of the challenge landscape [21]. The network aligns the visions of its stakeholders to address the beneficiaries' needs through the services offered by the participating NPOs and assists the general public in interacting with the beneficiaries through the coupon system.

The innovation for inclusive development (I4ID) philosophy calls for innovation and intervention that considers the interests and addresses the needs of stakeholders at the BOP [21], [34]. Indeed, this characterises this IP. Users of the I4ID philosophy encourage the inclusion of the BOP stakeholders as participants in the innovation development process [21], [34], affording them an appropriate level of influence in the IP's functioning [47], [48]. The benefits include a more comprehensive understanding of the challenge landscape, its context of emergence and the development of appropriate solutions [4], [11], [23]. However, the homeless and other persons in need are not participants in the IP and are the primary beneficiaries of its interventions.

The case interviews revealed that for some IP participants, the participation of the beneficiaries in meetings where planning and decision-making take place, such as an organisation's annual general meeting (AGM), has been a topic of much deliberation. However, none have adopted this. The stakeholders believe that until the beneficiary has been successfully reintegrated into a community and no longer relies on the systems of support for vagrants, they may not present an objective contribution to discussions; one where they shed light on the issues contributing to vagrancy and the interventions needed to address these.

It would thus appear that the participation of the beneficiaries and BOP stakeholders is not a 'silver bullet'; it may be regarded appropriate in some contexts but not in others. This reiterates the views

of previous researchers in the field of stakeholder participation (see Section 3.3.1). However, a good sense of the challenge landscape can be gained by including all other stakeholders in the ecosystem in discussions, to gain exposure to a diverse range of perspectives, experiences and conceptualisations of the issue. It may be appropriate to include representatives of the stakeholders at the periphery of the ecosystem (the general public, tourists and local businesses) in discussions around the issue.

7.7.2.1 A network champion for the innovation platform

The use of coupons as an alternative to giving cash and other items predates the existence of the IP. Previously, however, coupons gave recipients access to only one service; this was specified on the coupon. The organisations were not yet collaborating around the challenge; some organisations had their own coupons in circulation. The service offerings of the different NPOs were detached, while distribution of the coupons was limited. This restricted the positive impact that was envisioned by various stakeholders.

The current coupon system was championed by an individual with a passion to see those in need receive access to the aid they require while protecting their dignity. The champion recognised the potential of a single coupon that allows the recipients access to the services of their choice, which fosters interactions of mutual respect and impacts the beneficiary positively.

This individual presented the idea and its potential to key NPO stakeholders of vagrancy in Stellenbosch. He recognised the value of a shared vision and encouraged these organisations to coordinate around the challenge, with the shared coupon as the primary intervention mechanism. In this way, they championed the establishment of the network that we have studied as an IP. The network champion leveraged their own capabilities, time and resources to realise a collaborative platform. The significance of the network and its impact on the Stellenbosch community was recognised early on by local government, who became a participating stakeholder in the IP.

Without the intervention of the network champion, the IP may not have been formed. It became clear from the case interviews that the entire ecosystem became more functional once the IP was established, and the role taken up by the network champion is well recognised by the participating stakeholders. This is an example of where an overlap in the visions of different stakeholders is not necessarily enough to move them to collaborative action; a champion of the vision is often a necessary component for this to be realised.

7.7.3 Reflecting on the ecosystem

In the functioning of this ecosystem, it is the periphery stakeholders who engage with the vagrants and this has a large impact on the immediate stakeholders. These engagements are perceived to be either constructive, as is the case with responsible giving, or destructive, as is the case with

irresponsible giving, and thus either support or undermine the efforts of the immediate stakeholders.

Vagrancy is not an issue unique to Stellenbosch. One interviewee clearly stated the importance of acknowledging that this 'Stellenbosch ecosystem' is not a closed system; it is part of a larger ecosystem in South Africa. Thus, an intervention that influences this ecosystem will surely influence the larger ecosystem too. The example used by the interviewee considered the building of houses for all homeless persons in Stellenbosch as a solution to the problem. However, they posit that an increase in homelessness would then be seen because homeless people in the larger ecosystem would perceive Stellenbosch as a hub to receive housing, and an influx of 'new' vagrants would likely result.

The need for stakeholders to acknowledge that they are part of an ecosystem is clear from the case; they are not operating alone but are inherently linked with the other stakeholders of the challenge landscape. If stakeholders fail to acknowledge this, their independent interventions may be detrimental to the efforts of other stakeholders and, ultimately, to the beneficiaries. It is thus worth knowing who the stakeholders are, so that an ecosystem can be understood and potentially managed. It remains a challenge for the ecosystem to inform the periphery stakeholders, who are the targets for begging and thus interact with the beneficiaries in that space, of their role in and impact on this ecosystem.

That this ecosystem is not independent, but rather a 'system within a system', is also clear from the case. Ecosystem boundaries are important to understand the complexities of an ecosystem. In this case, it is logical to delimit the ecosystem to the stakeholders operating in Stellenbosch and the surrounding areas.

A shared vision for a 'safer Stellenbosch' provided the catalyst for these different stakeholders to acknowledge their role in a system larger than themselves and to begin to welcome opportunities for cooperation rather than competition. This may be a display of the benefits of leveraging aspects of commonality of ecosystem stakeholders, rather than focusing on discords.

7.7.4 Reflecting on the significance of stakeholders' visions in an IP

The case study revealed that the issue of individual stakeholders' visions and finding commonality amongst them is complex. The case interviews revealed that stakeholder visions are unlikely to be a perfect match, but they may be complementary. It is in recognising when and how independent visions may contribute to a collective vision that collaboration may become a reality and stakeholder networks or structures, like an IP, may be established.

Interviewees recalled the culture of competitiveness between NPOs operating in Stellenbosch and how a meeting of the stakeholders of vagrancy in Stellenbosch served as the turning point and the

birth of a more collaborative mood between them. Though the visions and goals shared by each stakeholder were noticeably different, they managed to identify something common to each; the vision of a 'safer Stellenbosch'. It was this glimpse of commonality which began to break down previous feelings of distrust that existed between several stakeholders.

It was apparent from the case interviews that stakeholders often have short-, medium- and long-term visions. For the stakeholders participating in the IP, it seems that their short-term visions all incorporate providing the stakeholders at the periphery of the ecosystem with a means to interact with individuals begging on the streets (the coupons). Another collective vision is fostering a culture of responsible giving in Stellenbosch, which may be a medium-term vision for the stakeholders. These common visions thus contribute to the IP's vision as it aligns with the needs of its participants and the beneficiaries of its interventions.

What is interesting is that the long-term visions of the IP participants were less aligned. The long-term visions of participant organisations include establishing Stellenbosch as a 'hub' for personal development and developing marketable skills, rather than a place where money is easy to obtain on the streets, and to see vagrants eventually overcome any dependence on the systems and services that look to empower them and be re-established into communities.

From this analysis we might assume that the collaborative mood between stakeholders is more dependent on the alignment of their short- and medium-term visions, and less dependent on the alignment of long-term visions. As visions change and the IP progresses towards the 'long-term' vision, it is likely that the stakeholders represented in the IP will change also.

Finally, the IP's collective vision must work towards goals that are attractive to each of the participating stakeholders; it should contribute to their individual visions and goals in some way. Thus, though the finer details of each stakeholder's vision may differ, the IP's interventions must sufficiently capture aspects of all the visions as it works towards the common goal.

7.8 Concluding remarks: Chapter 7

The enhanced stakeholder engagement framework and framework overview canvas were applied in a practical use case in the final part of the progressive evaluation approach. A process for using these was developed and tested in the case study. The case study served to verify the suitability of the conceptual framework and its framework overview canvas as a tool to manage stakeholder engagements. The case study further provided opportunities to confirm the transferability of the research output and reflect on its potential for use in research and practice.

A study was done on an IP which was formed to address challenges associated with vagrancy in Stellenbosch. The challenge landscape captures the I4ID philosophy of empowering those stakeholders living at the BOP, providing vagrants with the holistic support they need to realise

social and economic transformation which, in turn, strengthens their social health determinants. The study included considering the 'ecosystem' of stakeholders operating in the challenge landscape with the help of the innovation ecosystem perspective. The climate of engagement in the IP was selected as the unit of observation for the application of the framework. Case data was collected using several semi-structured interviews, email correspondence and the websites of the IP's participating stakeholders. Additional meetings with the IP's network champion provided opportunities for scrutinising the conceptual framework and receiving feedback on the output of the framework application process.

Five potential issues present in the IP were identified in the analysis of the case data. The conceptual framework and framework overview canvas were used to formulate recommendations to address these issues, with the network champion as the target audience. A process canvas was developed to guide the user in using these elements to develop the recommendations.

The case study presented several valuable observations regarding how an IP operates, the need for a network champion and the complex role of stakeholders' visions and finding a shared vision among these. These have been included in the chapter as reflections on the case that further highlight the value of the research output and may present opportunities for future research.

Reflecting on the application of the conceptual framework in this case study, the presence and influence of individual stakeholders' biases may be only partly addressed by the framework in considering racial and gender biases, while not accounting for other cognitive biases. This requires a proper investigation of the relevant literature to understanding the effects of cognitive biases on stakeholder engagements and has been identified as an area for further investigation in future research. No major modifications were made to the content and structure of the conceptual framework or its framework overview canvas.

The next chapter presents the finalised elements of the management tool for stakeholder engagement: the final conceptual framework; the framework overview canvas; the process canvas; and the procedure for using these elements to develop recommendations to address an identified issue.

Chapter 8: A tool for stakeholder engagement in IPs

Chapter 8 consolidates the final framework, its framework overview canvas and the process canvas into a management tool for stakeholder engagement in IPs that may be readily applied in practice. A summary of the motivation for the tool's development and its intended purpose is provided. Thereafter, the development of the conceptual framework and its progression into a management tool is described briefly. Each element of the tool is introduced, and its logic explained. A procedure for applying the management tool is proposed to assist the user in their application of the tool. The chapter provides stand-alone versions of the tool elements for potential users to utilise.

Chapter outcomes	1. Provide background on the motivation for the tool's development
	2. Briefly describe the tool's development process
	3. Introduce each element in the tool
	4. Propose a procedure for using the tool
	5. Highlight important considerations when using the tool

8.1 Motivation and purpose of the tool

An innovation platform (IP) is an innovation architecture that brings together diverse stakeholders who collaborate around a specific set of challenges [11], [21], [22]. IP participants pool knowledge and resources to drive learning and change, developing innovative solutions to these challenges. Despite their different and often competing interests, IP participants focus on the points of commonality shared by their individual visions to form a collective vision [21], [23].

IPs operating in developing countries can serve those members of society living at the base of the pyramid (BOP)[7]. These members of society often find themselves on the sidelines of innovation and development processes, even if they are the intended beneficiaries [21], [34]. IPs may address this by including representatives of these commonly marginalised groups as participants. This has become known as innovation for inclusive development (I4ID); a philosophy that empowers the commonly marginalised to be agents of the change that they need in their lives [21], [34].

For IPs to function, engagement within these stakeholder networks must be healthy. However, stakeholder engagement is a complex phenomenon, more so with the presence of diverse stakeholders and the participation of the marginalised.

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[7] Individuals living off less than R20 per day (estimation based on Prahalad and Hart's [38] threshold of $4 per day) [35], [213]

The management tool for stakeholder engagement in IPs, underpinned by an I4ID philosophy, proposes to assist the conceptualisation of this phenomenon. It offers an approach for developing a course of action to address engagement issues present in the IP. The tool is flexible and contains several criteria for good engagement practice in IPs to inform the user in a variety of contexts.

The development of the tool was motivated by the impact that IPs employing an I4ID approach may have on the social determinants that influence the health of South Africa's population. An IP could develop solutions that address the factors that contribute to poor health while simultaneously enabling the socio-economic empowerment of its beneficiaries. Ultimately, a healthier population relieves the demand for healthcare services placed on the country's public healthcare sector.

Despite the tool's development being motivated by issues that impact the healthcare sector in South Africa, its relevance need not be limited to this context. Indeed, initiatives from several sectors may contribute to strengthening the social determinants of health. This presents the opportunity for future research to consider the tool's potential in other sectors.

8.2 Summary of tool development process

The development of the management tool is reported throughout the document. This section provides a summary of the development process.

The management tool is built upon a conceptual framework for stakeholder engagement in IPs. The conceptual framework development process considered the approach proposed by Jabareen [52], called Conceptual Framework Analysis (CFA). The CFA process is summarised in Figure 43.
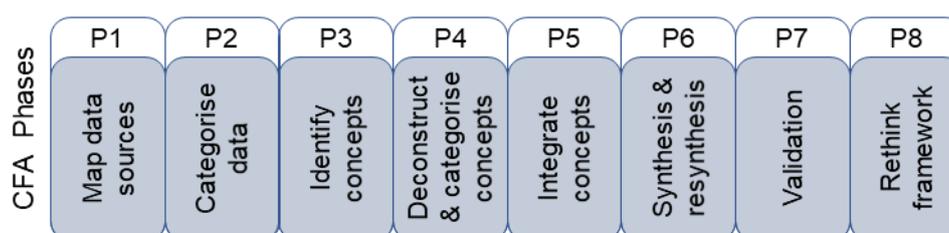
Figure 43: Conceptual framework analysis phases [52]

The CFA procedure is a grounded theory-based approach to developing conceptual frameworks. The CFA phases were not implemented in strict sequence in the development of the conceptual framework for stakeholder engagement in IPs. They were approached in a constantly comparative way throughout the process to refine and organise the data and concepts until the final framework and the management tool were compiled and made sense. Rather than a single phase of validation (Phase 7) as proposed by Jabareen [52], the framework development process included a progressive evaluation approach, where the research output was evaluated and enhanced at various stages.

Diverse data collection methods employed in the development of the conceptual framework contributed towards a comprehensive framework and reinforced the validity and reliability of the process. Data collection and analysis in the process comprised a systematic literature review, semi-structured interviews with subject matter experts, and case studies. Insights from a traditional literature review conducted in parallel with the framework development process complemented this process. The process for developing the framework is summarised in Figure 44, resulting in the final framework and the management tool for stakeholder engagement in IPs.
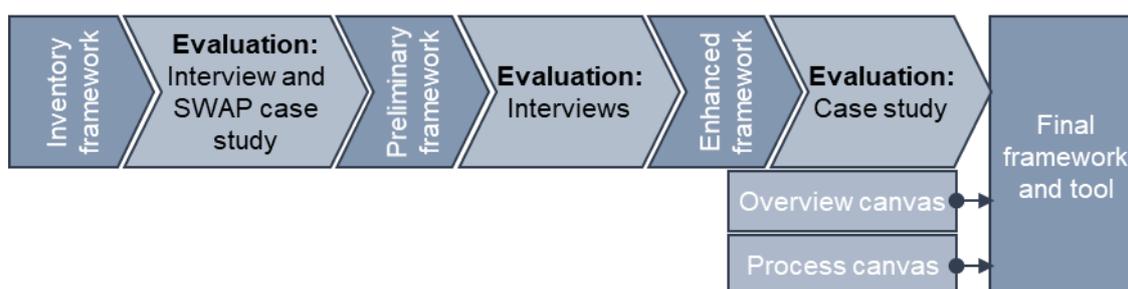
Figure 44: Summarised conceptual framework development process

The framework development process began with a systematic literature review. Relevant literature was analysed to identify several good engagement practices present in IPs. These were compiled into an inventory of engagement 'themes', called 'practices of engagement' (PoE).

Subsequently, the first part of the progressive evaluation approach sought to verify the confirmability and appropriateness of the identified engagement practices to the South African health context using a semi-structured interview with a subject matter expert. It continued to verify the confirmability of the PoE themes and gain additional understanding of stakeholder engagement in IPs using a theoretical case study on the Safe Water and AIDS Project (SWAP).

After the first part of the evaluation, the inventory items were translated into the paradigm of a conceptual framework and the preliminary framework for stakeholder engagement in IPs was developed. The research then progressed to the evaluation of the preliminary framework. Its credibility and confirmability were verified using an additional four semi-structured interviews with subject matter experts. The evaluation systematically considered each framework item, confirming and removing items as appropriate. The gaps that emerged were addressed by making the necessary additions and modifications to the framework. Further improvements to the framework's structure led to the enhanced conceptual framework.

A 'framework overview canvas' and a 'process canvas' were developed to complement the conceptual framework and assist users in its application in practice. The final part of the development process comprised an investigation into one such application of the framework in a case study. The case study sought to verify the transferability of the conceptual framework, and its suitability and relevance as a tool for managing stakeholder engagements in IPs.

The final management tool has three elements: (1) the final conceptual framework for stakeholder engagement in IPs; (2) a framework overview canvas; and (3) a process canvas. These elements are introduced in the next section where the procedure for using the tool is also described.

8.3   The proposed management tool

This section presents an overview of each element of the management tool before introducing a procedure for its application. The three elements are shown in Figure 45. Stand-alone versions of each element are provided at the end of the chapter.

Figure 45 shows that the conceptual framework and framework overview canvas are linked, showing that these elements are complementary. The process canvas is an additional element in the management tool that intends to guide the user in their application of the framework and its overview canvas.
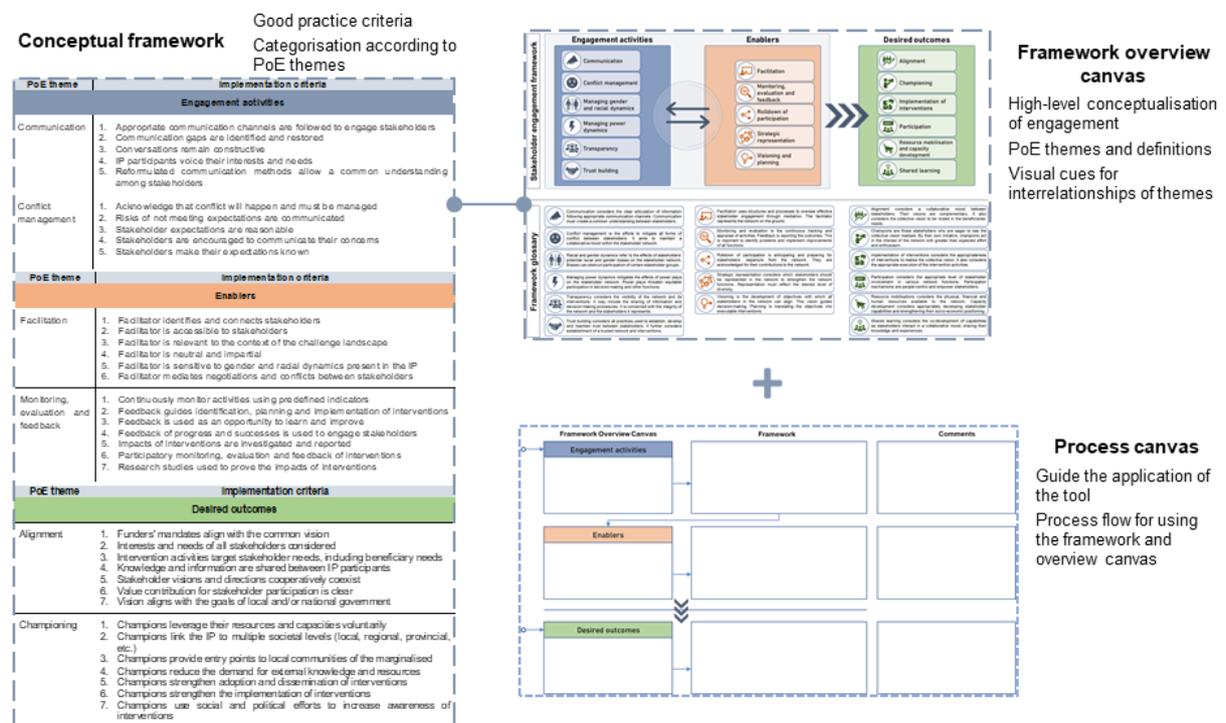
Figure 45: Overview of the elements of the management tool

It should be noticed from Figure 45 that for ease of reference the colour scheme in the structural logic of the elements is the same between the different elements.

8.3.1 The framework overview canvas

The framework overview canvas presents a high-level conceptualisation of the stakeholder engagement phenomenon. It serves as a starting point for understanding the complex and dynamic nature of stakeholder engagement. The overview canvas's content draws from dimensions of the conceptual framework. It makes use of visual cues to guide the interpretation of its content.

The framework overview canvas has three broad categories with several PoE themes in each category. The categories are: (1) engagement activities; (2) enablers; and (3) desired outcomes. The overview canvas provides the user with definitions for the PoE themes contained in each category.

Engagement activities are those PoE themes necessary for the engagement of stakeholders, including interactions at the interpersonal level. The relevant PoE themes and their definitions are described in the relevant portion of the overview canvas shown in Figure 46.
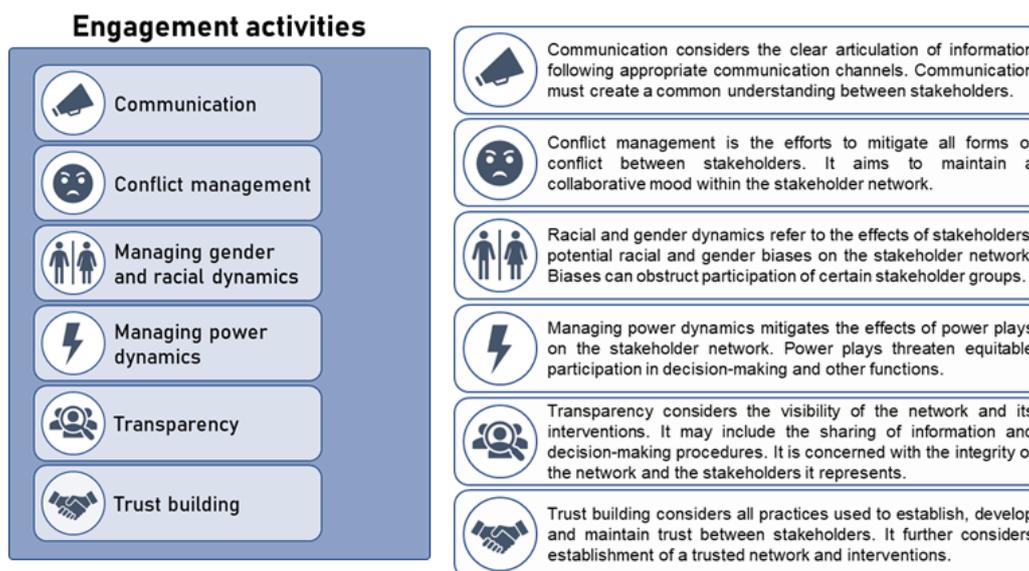
Figure 46: The engagement activities category

Desired outcomes represent the goals of stakeholder engagement that are specific to IPs. Whereas engagement activities are more generic in nature, desired outcomes characterise IPs. Figure 47 shows the relevant portion of the overview canvas with PoE themes and their definitions.
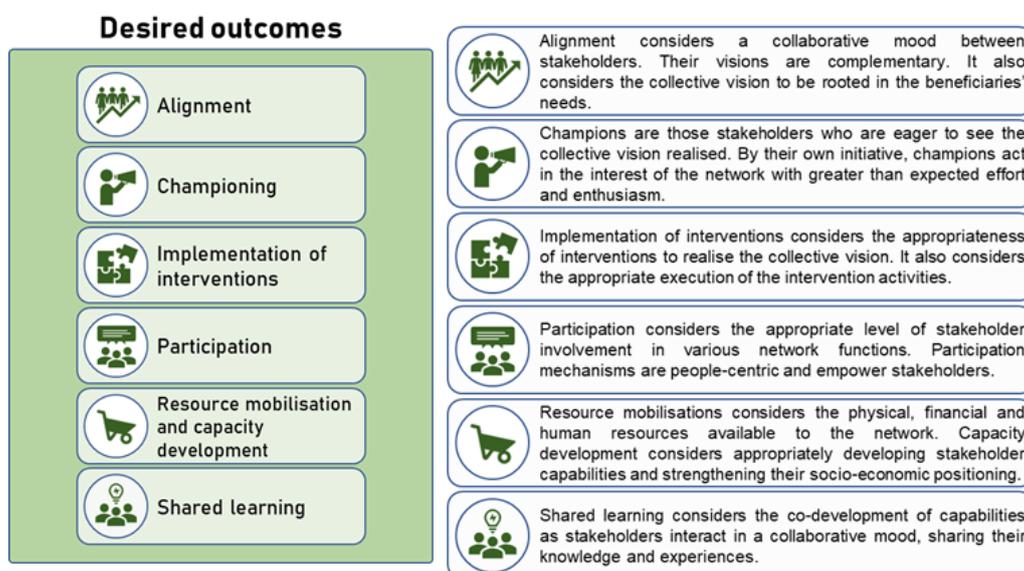
Figure 47: The desired outcomes category

The enablers category lies between the categories of engagement activities and desired outcomes in the framework overview canvas. It is positioned there because enablers bridge the gap between the other two categories. This category contains the PoE themes that, if leveraged correctly, may achieve the IP-specific goals. Therefore, these PoE themes enable the achievement of the desired outcomes through the engagement activities. The relevant PoE themes and their definitions are provided in the relevant portion of the overview canvas in Figure 48.
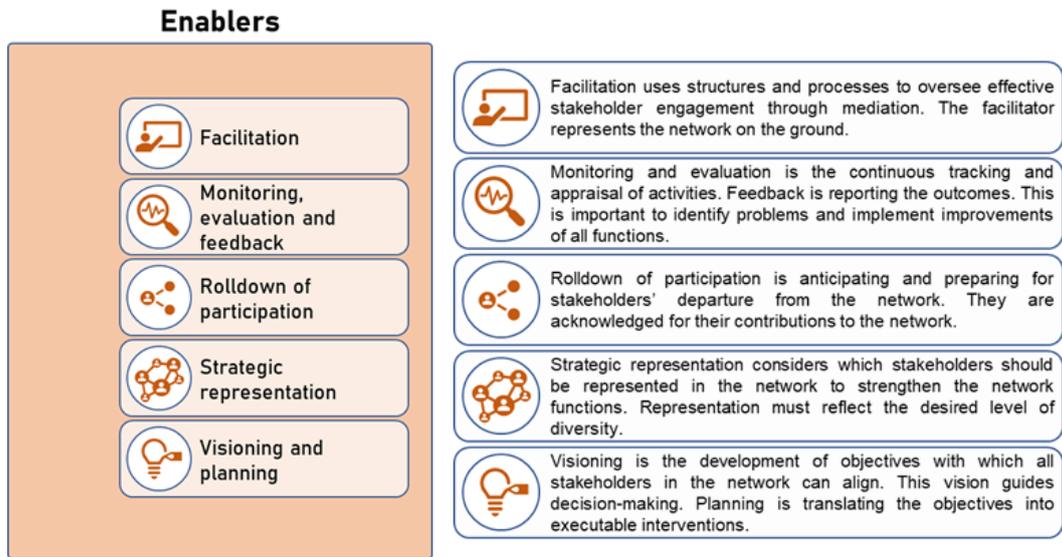
Figure 48: The enablers category

The PoE themes are interconnected and each theme may influence the presence of several other engagement themes in an IP. The framework overview canvas uses visual cues to represent this interconnected nature between the PoE themes in the various categories. Figure 49 emphasises the visual cues used in the framework overview canvas. The use of two horizontal arrows pointing in opposite directions represents the interplay between engagement activities and enablers. These two categories are placed in a rectangle. Together, they contribute to the desired outcomes, as represented by the horizontal chevron markings pointing to the right.
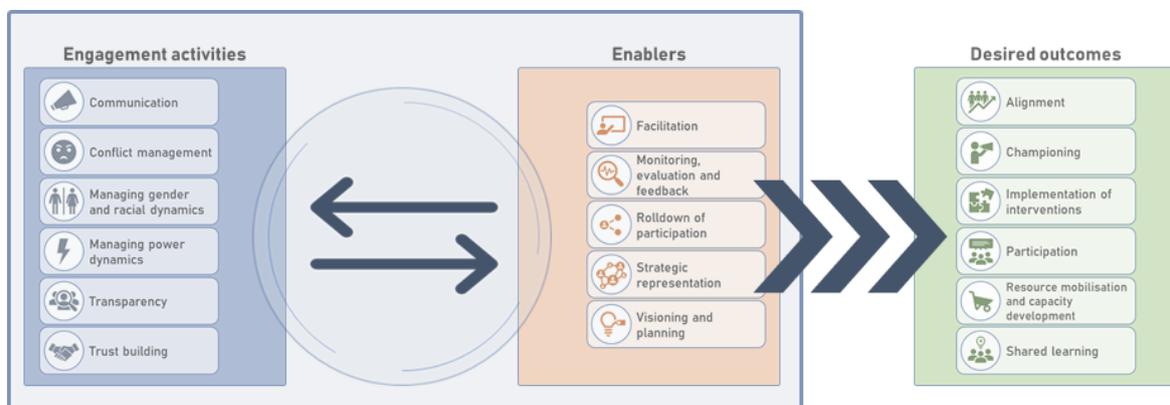
Figure 49: Emphasising the visual cues used in the framework overview canvas

The stand-alone version of the framework overview canvas is available on page 190 at the end of the chapter.

8.3.2 The conceptual framework

The conceptual framework has a simple structure with three dimensions, or 'levels'. Figure 50 visually represents each level on a part of the conceptual framework. As shown, the amount of detail increases with each level. The first level comprises the high-level categories that appear in the framework overview canvas; engagement activities, enablers and desired outcomes. The second level comprises the PoE themes within each category. The lowest level contains the criteria of good engagement practices appropriate to each PoE theme. These are called 'implementation criteria'.
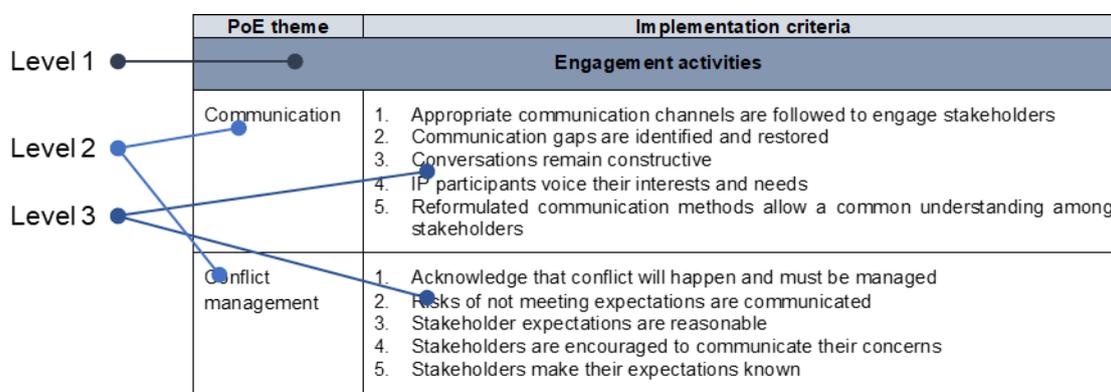
Figure 50: Three levels of the conceptual framework

A stand-alone version of the conceptual framework is given on page 191 at the end of the chapter.

IPs operate in a diverse variety of contexts. Stakeholder engagement takes on many forms; it is dependent on the IP as it is influenced by the context in which the IP operates, and the stakeholders involved. Therefore, it is not appropriate to accept that all the implementation criteria in the framework are relevant to every case. Rather, the framework offers an extensive range of good engagement practices from which those that are most relevant to the IP under consideration may be chosen. This requires the user to understand the IP under consideration, including how it functions, who the participants are and how they engage, before using the framework and indeed the management tool.

8.3.3 The process canvas

The process canvas comprises several blank fields to be filled by the user. Visual cues reflect a flow diagram to guide the user in their use of the framework overview canvas and the conceptual framework. Figure 51 shows a portion of the process canvas.

The process canvas directs the user's attention to each of the high-level categorisations in the framework overview canvas, then they are prompted to identify the PoE themes relevant to their

context. Once the relevant themes have been identified, the process canvas prompts the user to consider which implementation criteria from the conceptual framework are appropriate.
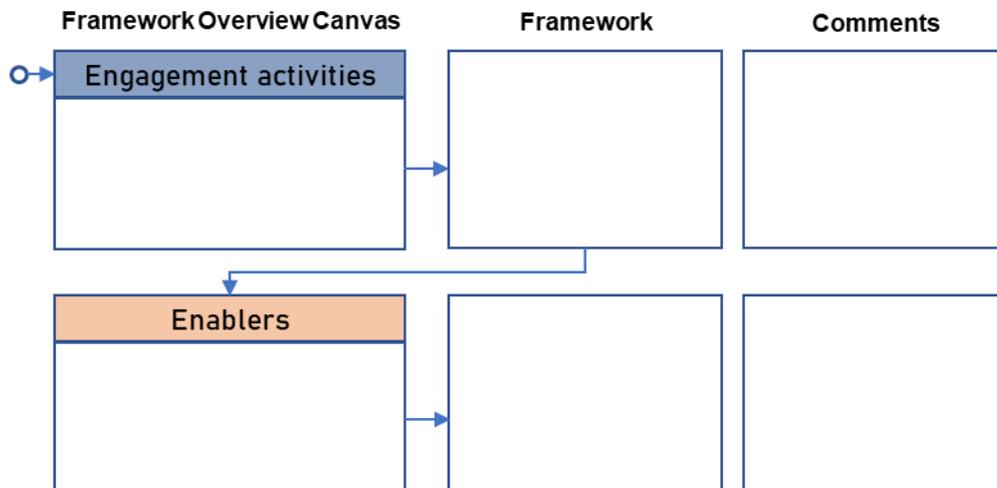
Figure 51: Portion of the blank process canvas showing elements of a flow diagram

The process canvas should not restrict the user in their application of the tool's elements. The user may revisit different components as their understanding of an engagement issue develops.

The canvas provides a field where comments and discussions may be developed by the user. The user should discuss how the generalised framework content is applicable to their context.

A stand-alone version of the process canvas is available on page 194 at the end of the chapter.

The next section proposes a procedure for applying the management tool. This will provide additional clarity on the purpose of each element and how it is applicable.

8.4 Using the tool

The management tool was developed to formulate recommendations and a course of action to address issues that may impact stakeholder engagement in IPs. This section proposes an approach for using the elements of the management tool. It is important to note that the application of the tool is not limited to addressing issues of stakeholder engagement. The extensive conceptual framework may also inform the establishment of new stakeholder networks.

A procedure for using the management tool is proposed in Figure 52 on page 187. The figure follows the logic of the process canvas for ease of reference. Arrows direct the user's attention from one category to the next, alternating between the framework overview canvas and the framework.

The process begins with the stakeholder engagement issue that the user wishes to address. The user follows a process of considering which 'engagement activities' may address the issue and

what the 'desired outcomes' might be. The 'enablers' that would support the achievement of the desired outcomes are then considered. Within each of these categories, guiding questions prompt the user to consider which PoE themes and their implementation criteria are appropriate to address the issue.
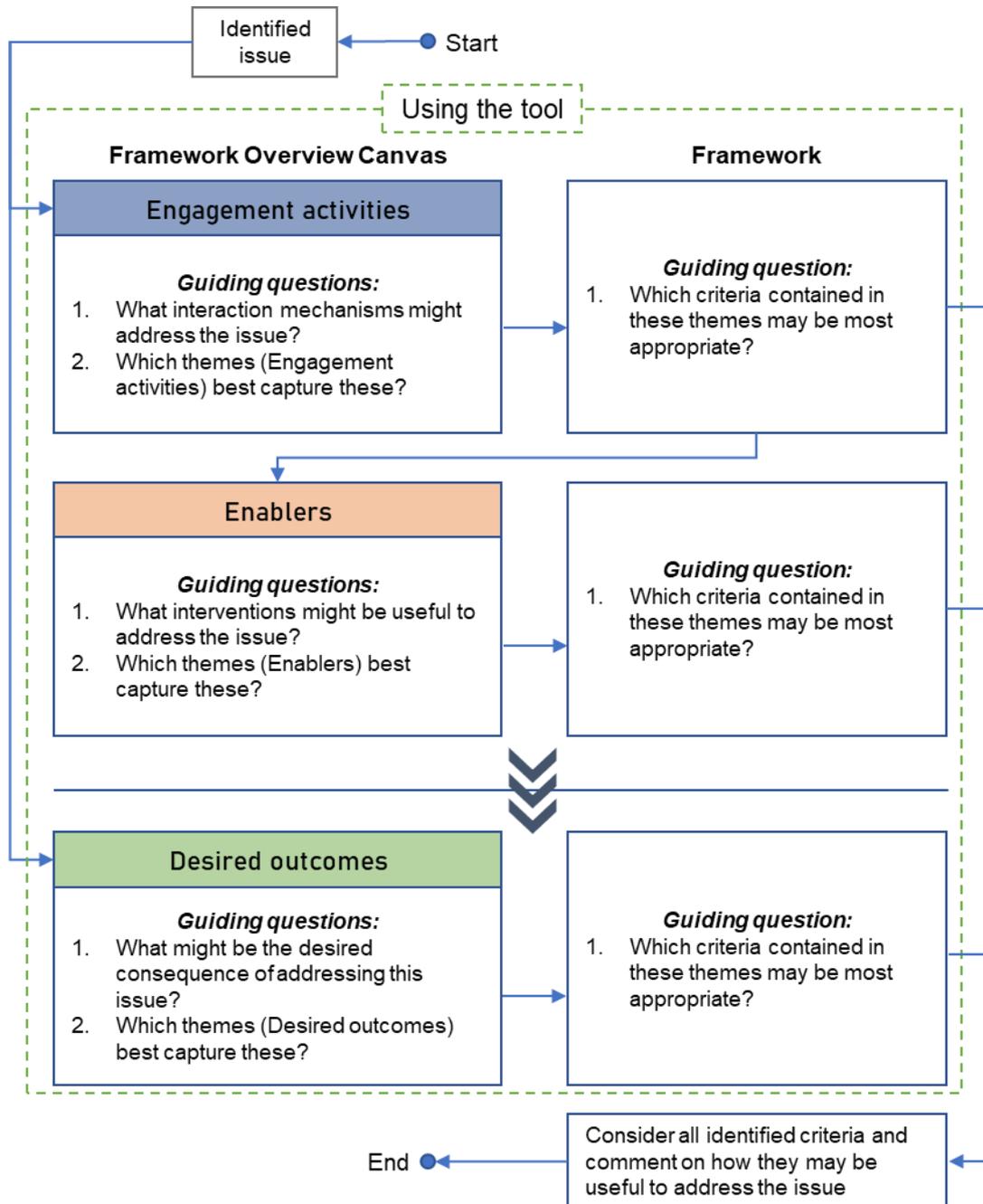

Figure 52: Procedure for using the conceptual framework and framework overview canvas

Throughout the application of the tool, the user should contextualise the application of the tool to ensure that the recommendations are appropriate to address the issue. The identified issue should be understood properly as the application of the framework requires the user to consider the past, current and future impacts of the issue on aspects of an IP's engagements.

The procedure in Figure 52 is again only a guide. The user may move iteratively between the different stages as they deem necessary.

A comprehensive example of the application of the tool in practice is given in the case study in Chapter 7. A visual overview of the application of the tool is given in Figure 53 considering only the engagement activities.
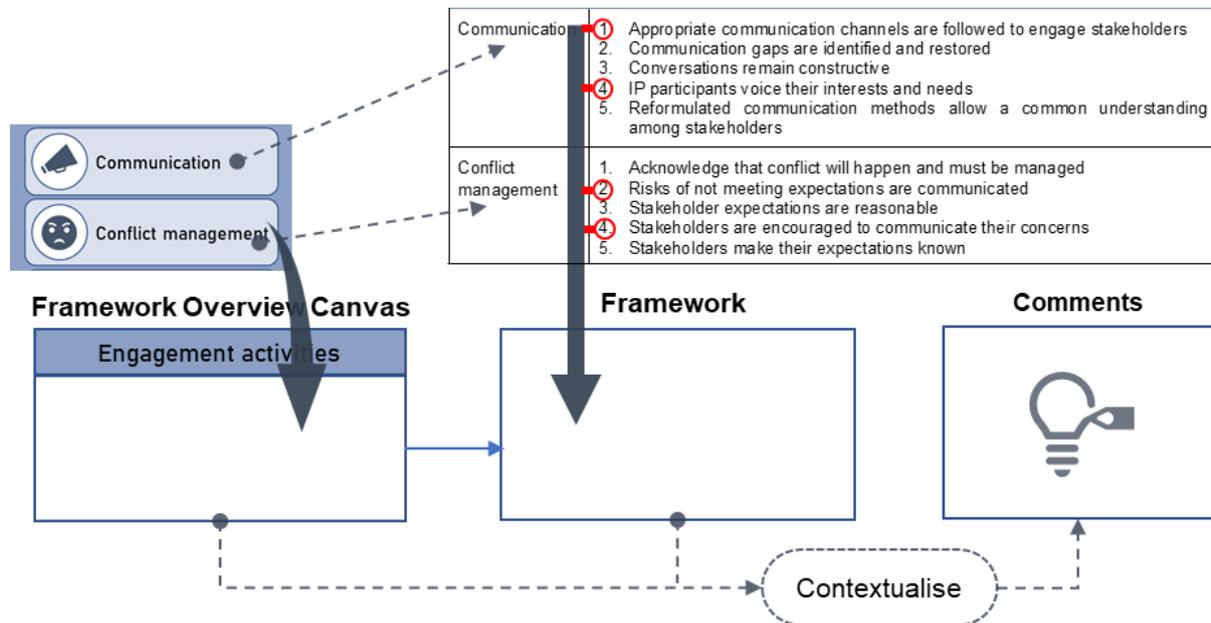
Figure 53: Applying the management tool using the process canvas

Figure 53 shows how the different elements are used in the application of the management tool. The first column of the process canvas is populated with the relevant PoE themes from the framework overview canvas. Then the implementation criteria from these themes that are appropriate to the issue are used to populate the second column of the process canvas. Finally, the third column of the process canvas is populated after contextualising the selected items of the overview canvas and the framework. A similar process is followed for each of the high-level categories.

A stand-alone version of the procedure for using the management tool is given on page 195.

8.4.1 Important considerations when using the tool

When using the management tool for stakeholder engagement in IPs, the following should be considered:

1. The dynamics of stakeholder engagement incorporated into the tool emerged from an extensive review of relevant literature and insights from subject matter experts. The management tool does not necessarily account for every possible dynamic associated with stakeholder engagement.

2. The management tool offers a broad conceptualisation that should be contextualised to specific stakeholders by its user.

3. The tool's focus falls on interactions between IP participants and it does not intentionally address the management and governance of IPs. However, it may still be useful for this.

4. The framework contained in the management tool is conceptual in nature and a sufficient understanding of the specific environment is necessary prior to its use. This is necessary to identify the engagement issues that might impact the IP and that could be addressed using the tool.

5. The management tool is not a model to predict an outcome. The tool incorporates a conceptual framework for stakeholder engagement in IPs. Conceptual frameworks intend only to improve our understanding of complex phenomena. Their application may serve to inform the user's interpretations of the phenomenon in a specific context. This is the intended purpose of the management tool.

8.5   Concluding remarks: Chapter 8

Chapter 8 presents the management tool for stakeholder engagement in IPs. It is primarily a consolidation of the final conceptual framework, the framework overview canvas and the process canvas into the management tool. The motivation and purpose for its development are summarised. Thereafter, the chapter offers a brief description of the tool's development process, already discussed at length throughout the document. Each element of the tool is introduced and discussed. Thereafter, a process for applying the tool to address stakeholder engagement issues that impact IPs is proposed. The chapter highlights some important considerations for the user's attention when applying the tool in practice.

Stand-alone versions of each tool element and the diagram mapping the procedure for using the tool follow next. Thereafter, the research is drawn to a close in the final chapter.

Framework overview canvas
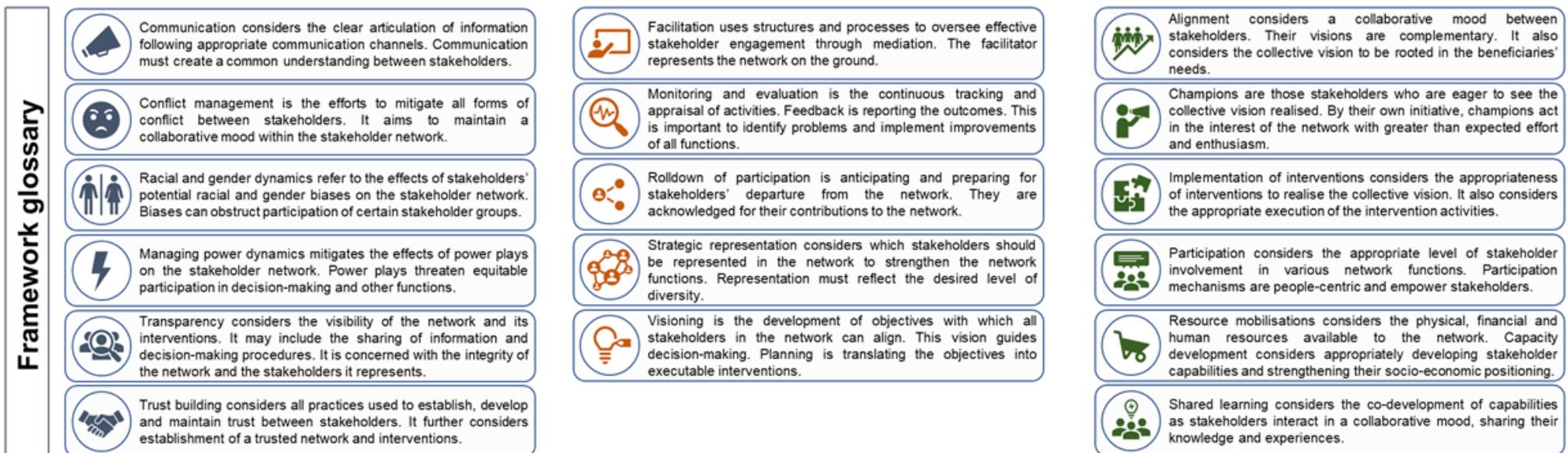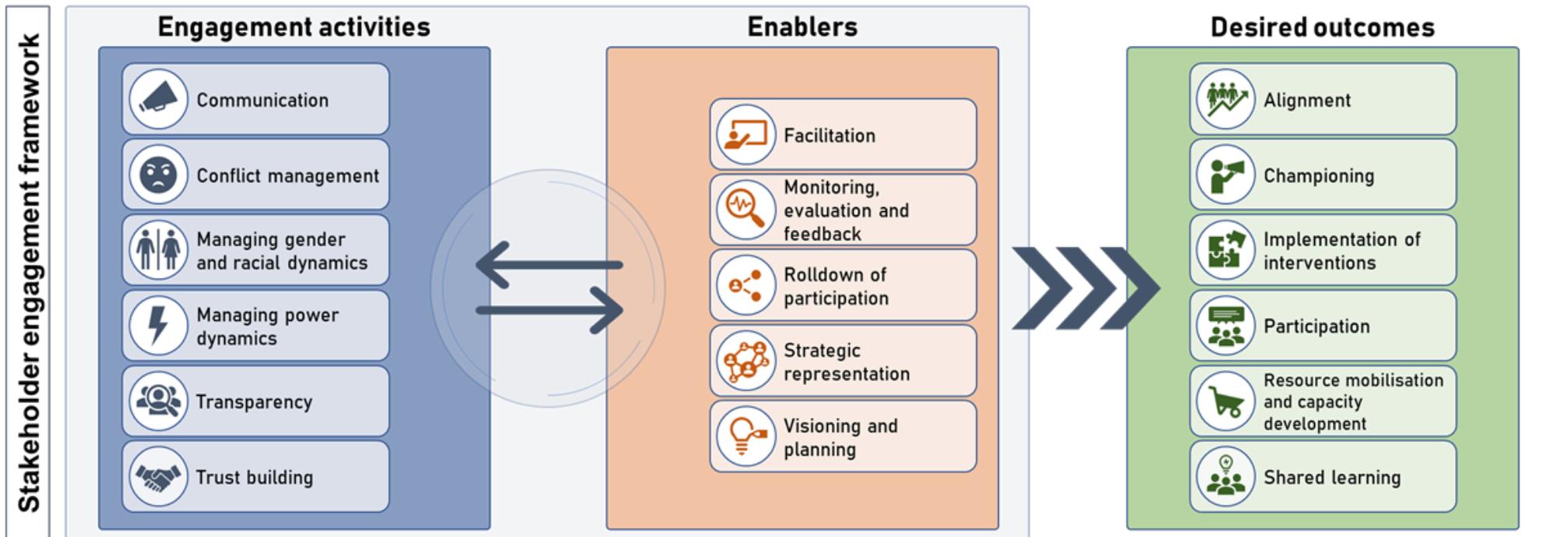
Conceptual framework: Engagement activities

| PoE theme	Implementation criteria
Engagement activities	
Communication	1. Appropriate communication channels are followed to engage stakeholders 2. Communication gaps are identified and restored 3. Conversations remain constructive 4. IP participants voice their interests and needs 5. Reformulated communication methods allow a common understanding among stakeholders
Conflict management	1. Acknowledge that conflict will happen and must be managed 2. Risks of not meeting expectations are communicated 3. Stakeholder expectations are reasonable 4. Stakeholders are encouraged to communicate their concerns 5. Stakeholders make their expectations known
Managing gender and racial dynamics	1. Awareness of dynamics existing between stakeholders of different races 2. Differing cultural norms do not hinder stakeholder involvement 3. Stakeholders' cultural norms are understood and respected 4. Suitable stakeholders are represented irrespective of race and gender
Managing power dynamics	1. Conflicts of interest are identified and managed 2. Funders' demands are treated with necessary urgency 3. Mechanisms of resistance are recognised and managed 4. Power and influence are decoupled from resource richness 5. Pre-empt and mitigate effects of factors which increase participant vulnerabilities 6. Consider pre-existing power dynamics in the stakeholder network 7. Priorities do not favour some stakeholders over others 8. Shared information is not obscured to benefit of specific stakeholders 9. Stakeholders ground themselves as equal participants in a non-competitive environment 10. Stakeholders value the expertise of other stakeholders
Transparency	1. Outcomes of decision-making are communicated to the stakeholders 2. Enablers of the flow of information between stakeholders exist 3. Information is presented completely and accurately 4. IP is visible to external stakeholders 5. Risks are communicated with the necessary stakeholders 6. Stakeholders are fully informed with accurate information 7. Stakeholders are transparent about their own dealings and expectations
Trust building	1. Credibility is necessary when engaging participants 2. Engage stakeholders in a sincere and respectful manner 3. Visible displays of trustworthiness are recognisable 4. Visible signs of interest in the activities of stakeholders even outside of the context of the IP 5. Vision and direction are important when engaging stakeholders

Conceptual framework: Enablers

PoE theme	Implementation criteria
Enablers	
Facilitation	1. Facilitator identifies and connects stakeholders 2. Facilitator is accessible to stakeholders 3. Facilitator is relevant to the context of the challenge landscape 4. Facilitator is neutral and impartial 5. Facilitator is sensitive to gender and racial dynamics present in the IP 6. Facilitator mediates negotiations and conflicts between stakeholders
Monitoring, evaluation and feedback	1. Continuously monitor activities using predefined indicators 2. Feedback guides identification, planning and implementation of interventions 3. Feedback is used as an opportunity to learn and improve 4. Feedback of progress and successes is used to engage stakeholders 5. Impacts of interventions are investigated and reported 6. Participatory monitoring, evaluation and feedback of interventions 7. Research studies used to prove the impacts of interventions
Rolldown of participation	1. Acknowledge stakeholders for their contributions once their participation has concluded 2. Conclusion of a stakeholder's participation is pre-empted and planned 3. Keep stakeholders informed about progress and achievements of initiatives
Strategic representation	1. Appropriate stakeholder identification procedures are in use 2. Beneficiaries are represented in the network of stakeholders 3. Capacity and legitimacy of the stakeholder network is strengthened 4. Dissemination of interventions is strengthened by the represented stakeholders 5. Existing stakeholder networks are leveraged in stakeholder identification 6. Key stakeholders represented to promote the network's legitimacy among stakeholders 7. Potential champions are identified and first to be engaged 8. Resource positioning is strengthened by the represented stakeholders 9. Stakeholders who are experts in the necessary fields are represented 10. Stakeholders willing to exchange knowledge, experiences and insights are represented 11. Stakeholders with capacities and motivation to champion are represented
Visioning and planning	1. Challenges present in the contexts for interventions are understood 2. Define the stakeholder capabilities necessary for interventions 3. Improving coordination through joint planning of activities 4. Interventions are realistically achievable 5. Interventions strategically target areas with greatest impact potential 6. Interventions support the platform vision and goals 7. Long-term goals are established and recognisable 8. Resource requirements are planned 9. Vision coexists with and supports stakeholders' visions

Conceptual framework: Desired outcomes

PoE theme	Implementation criteria
Desired outcomes	
Alignment	1. Funders' mandates align with the common vision 2. Interests and needs of all stakeholders considered 3. Intervention activities target stakeholder needs, including beneficiary needs 4. Knowledge and information are shared between IP participants 5. Stakeholder visions and directions cooperatively coexist 6. Value contribution of stakeholder participation is clear 7. Vision aligns with the goals of local and/or national government
Championing	1. Champions leverage their resources and capacities voluntarily 2. Champions link the IP to multiple societal levels (local, regional, provincial, etc.) 3. Champions provide entry points to local communities of the marginalised 4. Champions reduce the demand for external knowledge and resources 5. Champions strengthen adoption and dissemination of interventions 6. Champions strengthen the implementation of interventions 7. Champions use social and political efforts to increase awareness of interventions
Implementation of interventions	1. Intended beneficiaries and/or users are sufficiently aware of interventions 2. Intervention activities are executed according to a predefined plan 3. Outcomes of intervention activities are visible 4. Intervention activities realise real socio-economic transformation 5. Stakeholders clearly understand how intervention activities work 6. Stakeholders clearly understand the purpose and benefits of intervention activities
Participation	1. Approaches to encourage involvement in interventions are in place, e.g. incentives for participation 2. Commonly marginalised stakeholders fulfil important roles for implementation of interventions 3. Improved socio-economic positioning and self-worth for the commonly marginalised stakeholders 4. Improved understanding of lifestyle challenges experienced by the commonly marginalised 5. Monitoring, evaluation and feedback is participatory 6. Participation techniques/mechanisms are appropriate to the levels of participation 7. Participatory approach is people-centric to empower participants 8. Stakeholder can access the network's common resource pool 9. Stakeholder roles and levels of participation are appropriate to their capabilities 10. Stakeholders (including the beneficiaries) take ownership of the initiatives 11. Stakeholders are involved in decision-making around issues that affect them 12. Stakeholders are involved in the identification of prospective new participants 13. Stakeholders can access opportunities for capacity development 14. Stakeholders govern the dissemination of information to external parties 15. Stakeholders mobilise their resources and capacities for the network 16. Stakeholders' participation begins early and is sustained 17. Stakeholders share their experiences and insights within the network
Resources and capacity	1. Existing knowledge and resources are acknowledged and used 2. Help stakeholders identify what challenges are present in their context 3. IP advocates for attention to issues on behalf of its stakeholders 4. Resources are directed at implementation areas with promising potential 5. Stakeholder capabilities are developed to support interventions 6. Stakeholders mobilise their resources and capacities for the network
Shared learning	1. IP participants share information, insights, knowledge and experiences 2. Stakeholder capabilities are developed

Framework Overview Canvas | Framework | Comments

Engagement activities

Enablers

Desired outcomes

Process canvas

Procedure for using the management tool

Chapter 9: Conclusion and recommendations for future work

The research is drawn to a close in Chapter 9. The four-part research approach is revisited, and a summary of each part is given. The chapter continues to present an overview of how each research objective was addressed. The limitations applicable to the research are described before some opportunities for further investigation and directions for future research are presented. The chapter ends with final reflections and concluding thoughts on the research topic.

Chapter outcomes	1. Revisit the four-part approach to the research
	2. Describe how the research objectives were met
	3. Highlight the research findings
	4. Describe the limitations of the research
	5. Recommend areas for further investigation and future research

9.1 Overview of research

This section summarises the four-part research approach (see Figure 54) and highlights the significant findings of each part.
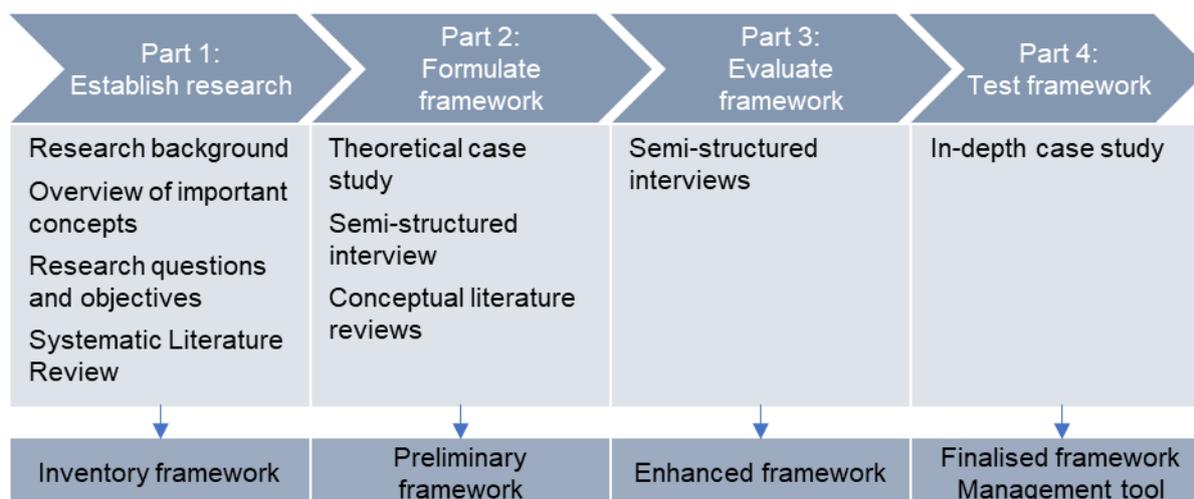
Figure 54: Overview of research approach

9.1.1 Part 1: Establish research

A review of the challenges facing primary healthcare delivery in South Africa, focusing especially on those challenges in the public healthcare sector, is reported in Chapter 1. The country's primary healthcare delivery system is marked by poor service delivery and limited accessibility. The public healthcare sector is expected to deliver services despite the limited availability of resources. This contributes to the shortage of healthcare professionals, poor availability of drugs and inadequate medical equipment.

Consideration was also given to the country's social health determinants, the factors which influence these and their impact on the health of its population. In South Africa, poor housing,

insufficient water and sanitation, unsafe food environments, substance dependence and poor social cohesion are but some of the factors contributing to the low levels of health of the population. In fact, these social determinants are recognised for having a greater impact on a population's health than that of the quality and accessibility of healthcare services. Therefore, the research considers addressing the social determinants of health to alleviate the burden placed on the public healthcare system by the poor health of the population.

The innovation for inclusive development philosophy (I4ID), an approach to include those living at the base of the pyramid (BOP) as participants in innovation processes, offers one means to do this. This philosophy may underpin the formation of various types of innovation architectures. The research considers innovation platforms (IPs) as one such architecture. IPs offer a structure for the collaboration of diverse stakeholders, including the most marginalised BOP stakeholders, around a common goal. IPs have the potential to address the social determinants of health holistically by developing appropriate innovation solutions while simultaneously empowering their participants.

Participatory approaches to innovation present the need to understand stakeholder engagement. This is the case for IPs underpinned by an I4ID philosophy. This gave rise to the primary research question: How can a conceptual framework inform the engagement practices of IPs to enhance the collaboration of efforts around social determinants of health in the South African context?

To address this question, the research sought to develop a conceptual framework for stakeholder engagement in IPs. Eight research objectives were developed and executed according to two phases. Section 9.2 reflects on how each research objective was addressed. The research adopted a mixed methods approach to collect and analyse qualitative data.

Jabareen's [52] approach for developing conceptual frameworks, called conceptual framework analysis (CFA), was complemented with a progressive evaluation approach that saw the framework verified and refined at different stages of the research. A systematic literature review, reported in Chapter 4, provided the departure point for developing the framework. A variety of search terms were developed to identify all possible literature relevant to the field. A total of 39 publications were adopted into the dataset for analysis. Descriptive statistics of the dataset show that the IP literature has only emerged recently and is still developing. Analysis of potential research gaps revealed that very little research has been done on IPs in the context of healthcare. Another gap in the dataset publications was the absence of the innovation ecosystem perspective as a lens for analysing IPs and the interactions between different stakeholders.

A content analysis of the primary publications identified 16 fundamental concepts of engagement present in IPs. These were subsequently named 'practices of engagement' (PoE). These PoEs emerged as themes within the literature, with several engagement mechanisms significant to each

theme. Part 1 of the research approach contributed to the development of an inventory framework of these engagement mechanisms and the intended purpose of each, as reported in the primary publications. Each inventory item was categorised according to its corresponding PoE theme. The inventory framework would serve as the theoretical foundation for developing a conceptual framework for stakeholder engagement in IPs.

9.1.2 Part 2: Formulate framework

The items of the inventory framework needed translating into the paradigm of a conceptual framework before the preliminary framework could be populated. However, the findings in Part 1 needed verification for the framework to be developed properly. Therefore, the progressive evaluation approach began in Part 2 by scrutinising the 16 PoE themes identified. This preliminary evaluation had two components: (1) a case study verified the confirmability of the PoE themes and further insight into the role of stakeholder engagement in IPs was gained; and (2) a semi-structured interview further verified the confirmability and appropriateness of the research output to the South African health context.

The Safe Water and AIDS Project (SWAP) was analysed as a case study using a documentary analysis of case literature. SWAP manages a stakeholder network that works to improve the health of rural communities in Kenya by empowering marginalised women who have HIV. The stakeholders present in the SWAP intervention were identified and their interactions as described in the case literature were observed. The PoE themes were used to describe several instances of stakeholder engagement present in the SWAP network. All PoE themes, save for conflict management, were used to describe one or several instances of stakeholder engagement. This may indicate how accurately the themes were formulated to describe stakeholder interactions. The absence of conflict management did not disqualify it; it may indicate bias in the case literature which excludes descriptions of the challenges the SWAP network faces to engage and manage the behaviour of individual participants.

The semi-structured interview with a subject matter expert probed a discussion that addressed the PoE themes and their presence within the stakeholder engagement practices of their organisation. The interview showed that the themes are applicable to a specific initiative and suitable to a more general context within healthcare. The interview gave insight into the nature of participatory initiatives in the South African health context, including the evolutionary nature of these initiatives and the critical importance of stakeholder engagement. The interview revealed the need to modify two of the PoE themes to capture their intended purpose more appropriately.

At the conclusion of the preliminary evaluation, the researcher was satisfied that the research output was shown to be confirmable and appropriate for use in practice. The complexity inherent to stakeholder interactions was revealed in the preliminary evaluation. It became apparent that the PoE themes are interconnected and any instance of engagement has several engagement themes

at work in the background. This means that focusing on a single theme may strengthen the presence of several other themes, while neglecting one theme may have a detrimental effect on several other themes as well.

A process for screening the inventory items to identify those most appropriate for translation into the paradigm of a conceptual framework was developed. The process used these interrelationships which exist between the PoE themes to identify the most significant items of each theme. In this way, Part 2 contributed to the development of the preliminary conceptual framework for stakeholder engagement in IPs.

A conceptual literature review complemented the development of the conceptual framework and served to tie in additional research areas where appropriate. A review of the development and characteristics of the innovation ecosystem perspective as a 'lens' to analyse IPs was conducted. The insight was later applied when analysing an IP and its 'ecosystem' in the case study in Part 4 of the research approach. A comprehensive review of stakeholder engagement and participation in development initiatives included a focus on the benefits and pitfalls of participatory approaches. Some approaches to stakeholder participation are described and include several methods for stakeholder identification and analysis. The outcomes of this section of the review were incorporated into several categories of the preliminary conceptual framework where appropriate.

A review was done of several conceptual 'tools' that guide research and practice. It considered the different typologies and theoretical foundations of the tools. The review assisted in achieving the final research objective: present a management tool for stakeholder engagement in IPs in the South African health context. It highlighted the importance of validity and reliability in the development of these tools, and this was incorporated appropriately into the research.

9.1.3 Part 3: Evaluate framework

The progressive evaluation of the research continued in Part 3 with the focus falling on the preliminary framework. The evaluation sought to verify the credibility and confirmability of the preliminary framework by following a structured approach. This encouraged a holistic assessment of the current framework. Semi-structured interviews were conducted with subject matter experts to inform the evaluation of the framework. Four subject matter experts were recruited from a variety of sectors and not limited to healthcare alone. The interview participants have the appropriate experience in participatory development initiatives and managing stakeholder dynamics within these contexts.

A discussion guideline was designed to prompt the discussion with each interview participant. The discussions highlighted aspects like the need for a stakeholder engagement framework and the important considerations of stakeholder engagement relevant in their contexts. A summarised

framework was presented to the interview participants to probe them into discussions around the relevance of each PoE theme contained in the framework.

The analysis of the interview data confirmed that there is indeed a need for a framework to guide stakeholder engagements in development contexts. Despite the need, none of the interview participants were familiar with any existing frameworks that aim to do this. The analysis further revealed the presence of several stakeholders in South Africa's development spaces, considering initiatives that aim to empower the marginalised. The stakeholders include researchers, community members, private sector actors and government actors at various levels. The diversity of stakeholders is highlighted in the presence of partnerships between, among others, local businesses, farmers and not-for-profit-organisations (NPOs).

The analysis of the interview data included assessing systematically whether each item of the preliminary framework was confirmed or had to be removed. Several gaps also emerged, and these were addressed by adding new items to the framework where appropriate. A significant addition is that of a 17th PoE theme – Rolldown of participation – that highlights the need to pre-empt and plan for the departure of a stakeholder from the stakeholder network. The framework underwent structural improvements and several of its items were refined for clarity and conciseness throughout the evaluation.

Part 3 of the research approach contributed to the development of the enhanced stakeholder engagement framework. It includes a new dimension as the PoE themes underwent a high-level categorisation. These categories are engagement activities, enablers, and desired outcomes. Engagement activities are those PoE themes appropriate to the effective engagement of stakeholders, including those at the interpersonal level. These are suited to several engagement contexts. Desired outcomes represent the goals of stakeholder engagement that characterise IPs. Enablers bridge the gap between the engagement activities and desired outcomes. Enablers may aid the achievement of the desired outcomes through the engagement activities.

Finally, a 'framework overview canvas' was developed as a visual representation of the interconnected nature of the engagement practices in an IP. It combines the categories of engagement activities, enablers and desired outcomes with visual cues to describe the interrelationships between the PoE themes in each category. The framework overview canvas is used alongside the conceptual framework and provides a departure point for the user to conceptualise stakeholder engagement in their own context.

9.1.4 Part 4: Test framework

The final evaluation of the research output was addressed in Part 4 of the research approach. This comprised an investigation into the application of the conceptual framework in practice. A case study was done on an IP which has been formed to address the challenge of vagrancy in

Stellenbosch. This case study appropriately aligns with the research as the IP under observation works to benefit a very marginalised group in the Stellenbosch community. Its participants collaboratively drive an intervention to empower them to break free from the cycle of vagrancy. The living conditions experienced by vagrants, too often coupled with low social cohesion and substance dependence, places them at dire risk of poor health. This case study shows the potential of coordinating resources and efforts to address a very complex challenge landscape. Furthermore, it highlights that a wide variety of intervention mechanisms may be suitable to address issues affecting social determinants of health; these interventions are not limited to the healthcare sector alone, but can be addressed from several angles.

Semi-structured interviews were the primary data collection method for the case study. The IP's network champion participated in a case study workshop where they described the stakeholder network and its primary intervention. The conceptual framework was then presented to them and they were given an opportunity to scrutinise it. Interviews with three of the four stakeholders participating in the IP further contributed to the case study and offered insight into the perspectives of different stakeholders. The interview data was analysed to describe the case and for applying the conceptual framework and framework overview canvas as a management tool for stakeholder engagement in IPs.

The innovation ecosystem perspective was applied as the lens for the analysis of the case study. The IP was placed at the centre of a broader 'ecosystem' of stakeholders. This perspective offered insight into the functioning of the ecosystem, revealing that this 'Stellenbosch ecosystem' is not a closed system; it influences and is influenced by a larger ecosystem in South Africa. This reality should be acknowledged when considering the impact of new interventions on the ecosystem stakeholders, particularly the beneficiaries of these interventions. The case study shows the importance of all stakeholders acknowledging their role in the ecosystem. Identifying a shared vision may be the catalyst for them to do so. The issue of a shared vision in an IP is a complex one where stakeholders' short-, medium- and long-term visions are at play. The case study suggests that the collaborative mood between stakeholders relies more on the alignment of the short- and medium-term visions of these stakeholders, with the alignment of each stakeholder's long-term vision being less important.

The case study data was analysed to identify potential issues within the IP and broader ecosystem that may impact the engagements between stakeholders and the collaborative mood between them. A procedure for using the conceptual framework and its framework overview canvas was developed to address these issues. A 'process canvas' was designed and guides the user in this procedure. The procedure was tested in the case study; the conceptual framework and framework overview canvas were used to formulate recommendations to address five potential issues present in the IP under observation. These recommendations considered the IP's network champion as

the target audience. The recommendations were presented to the IP's network champion, where their feedback served to verify the suitability and relevance of the conceptual framework as a management tool for stakeholder engagement.

Part 4 of the research approach contributed to the development of the different elements that make up the management tool: the final stakeholder engagement framework; the framework overview canvas; and a process canvas for applying these. The elements of the management tool are consolidated in Chapter 8 and researchers and practitioners can use the content of this chapter for application in their own context.

9.2   Research objectives

The overarching research objective was to develop a conceptual framework for stakeholder engagement in IPs that may be used to manage the engagement practices between stakeholders in innovation settings. This objective was positioned within the context of healthcare in South Africa, focusing on addressing the social determinants that impact the population's health. There were eight smaller research objectives that together contributed towards addressing the overarching research objective.

Table 32 summarises the research objectives and provides references to the document chapters and sections that address each one.

Table 32: Research objectives addressed at the conclusion of the research

Research objectives	Section where reported
RO1: Conduct a systematic literature review to review the engagement practices present in IPs underpinned by an I4ID philosophy	Chapter 4
RO2: Use insights from an existing IP and subject matter experts to better understand the identified engagement practices	Chapter 5 *Section 5.3* *Section 5.4*
RO3: Conduct a conceptual literature review to establish the suitability of the innovation ecosystem perspective to conceptualise innovation development	Chapter 3 *Section 3.1* *Section 3.2*
RO4: Conduct a conceptual literature review to understand the requirements and risks associated with using participatory mechanisms in development contexts	Chapter 3 *Section 3.3*
RO5: Develop a preliminary conceptual framework to guide the engagement and participation of IP participants	Chapter 6 *Section 6.1* *Section 6.2*
RO6: Evaluate the preliminary conceptual framework through semi-structured interviews with subject matter experts in industry and develop an enhanced framework	Chapter 6 *Section 6.3* *Section 6.4* *Section 6.5*

Research objectives	Section where reported
RO7: Test the usefulness and reliability of the enhanced framework as a management tool by means of a case study on its application in an existing IP in the South African health context	Chapter 7
RO8: Present a management tool for stakeholder engagement in IPs in the South African health context	Chapter 8

9.3 Contributions of research

The research offers various contributions that are worth highlighting. Some are from the research as a whole and others are specific to the management tool for stakeholder engagement.

The research contributes to the IP body of knowledge and offers insight into the potential of the I4ID philosophy to underpin this innovation architecture. The research also contributes to the body of knowledge of stakeholder engagement and participation, specifically considering marginalised stakeholders at the BOP. It shows that participation is not a means to an end but should be the end in itself; it is a process that requires time and attention to do properly. The research reinforces the call for people-centric approaches in innovation development, especially when aimed at the commonly marginalised.

The research contributes insights from a comprehensive review of literature positioned at the intersection of IPs, I4ID and stakeholder engagement. It offers an example of the application of the innovation ecosystem perspective as a lens to analyse stakeholder networks with the IP as the central node in a broader ecosystem of stakeholders.

The research shows the variety of angles from which social issues that impact the health of a population may be addressed. Developing solutions to the complex problems in South Africa's healthcare sector should not fall to that sector alone. In Chapter 7 the case study shows how the actions of other sectors have the potential to impact the healthcare sector both positively and negatively.

The management tool for stakeholder engagement in IPs offers guidance for the conceptualisation and analysis of stakeholder networks. The content of the tool includes criteria for good practice (called implementation criteria) that can inform the establishment of innovation architectures like IPs. These can also be used to develop a course of action to address issues in them. The tool was used in the case study to identify recommendations to address issues in the IP and its ecosystem that would potentially impact stakeholder engagement. However, the tool is flexible. It may address the needs of researchers and practitioners who want to set up a new IP, who want to identify areas for improvement in existing IPs, or who want to identify reasons for an IP's failure and the lessons to learn.

The different elements of the tool also offer contributions. These are summarised in Table 33.

Table 33: Contributions offered by the elements of the tool

Element	Contributions
Framework overview canvas	• Presents a high-level conceptualisation of the complex dynamics of stakeholder engagement to make these more comprehensible • Uses visual cues to offer insights into the interrelationships shared by PoE themes • Offers a starting point for researchers and practitioners wanting to conceptualise stakeholder engagement in their own contexts
Conceptual framework	• Presents several engagement practices (called PoE) characteristic to stakeholder networks, particularly IPs • Presents several implementation criteria typical to each PoE theme • The PoE themes and their criteria offer flexibility in their use and depend on the context to which they are applied
Process canvas	• Guides the user in their application of the tool • Offers transparency in the process used to develop the output as the logic of the approach becomes visible to the target audience • Offers a stepwise approach to breakdown an issue into more manageable parts and develop a course of action to address it

9.4 Limitations of research

Reflecting on the research approach adopted, the researcher acknowledges that certain limitations exist. These should be considered along with the research findings. Some notable limitations to the research include:

1. The search terms used in the systematic literature review may be expanded to identify additional studies relevant to the research topic.
2. Only the Scopus database was considered for identifying peer-reviewed publications in the systematic literature review. This was decided after an exploratory search of several other databases returned a small number of relevant search results. Also, the relevant results that were returned were already included in the Scopus results.
3. Content analysis was performed by the researcher alone and bias may be present in the researcher's interpretations of the content. The presence of bias was mitigated by incorporating additional forms of data collection and analysis, including case studies and semi-structured interviews with subject matter experts.
4. The progressive evaluation approach was subject to interpretation by the researcher alone and this may have introduced bias. However, the use of several subject matter experts allowed for insights to be cross-referenced and confirmed independently in different interviews. The case study application of the management tool also made use of several interviews with network stakeholders who confirmed the researcher's interpretations.

Finally, in the case study, the network champion scrutinised the content of the conceptual framework and offered feedback on the recommendations developed from its application. All of this worked to mitigate the presence of bias.

5. Not all aspects of the framework were addressed in the evaluation. Future work should use more semi-structured interviews and case studies to collect additional data. This would further strengthen the multidisciplinary nature of the research and contribute towards new additions and modifications.

6. The conceptual framework was derived from literature and iteratively refined using subject matter interviews and case studies. However, the exposure of the conceptual framework in practice was limited. In future, additional case studies and pilot studies are necessary to fully understand its benefit to practitioners.

7. The conceptual framework was purposely developed to be as generalised as possible, though the study focused on its application in the South African health context. Despite the generalisability, future work should investigate whether there are contexts for which it is not suitable in its current state and make the necessary modifications to address this.

8. The conceptual framework accounts for the participation of marginalised stakeholders, who are the beneficiaries of innovation development in the context of this research. However, the IP in the case study does not include its beneficiaries (vagrants in Stellenbosch) as participating stakeholders. Future work should test the conceptual framework in contexts where marginalised stakeholders participate in decision-making and innovation to fully understand its potential to inform these contexts.

9. The case study considered an IP that has a small number of participating stakeholders. This allowed the case study to be clear and concise. Future work should test the performance of the conceptual framework in a larger and more complex stakeholder network.

10. Conceptualising the IP and its ecosystem in the case study using the innovation ecosystem perspective was informed by interviews with three of the IP's participating stakeholders. Future work should consider interviews with other ecosystem stakeholders outside of the IP to conceptualise the ecosystem as accurately as possible.

11. The researcher used the stakeholder engagement framework to develop recommendations for the engagement issues present in the case study. Time constraints and a limited availability of research participants did not allow an investigation into its application by other users (e.g. the network champion, IP participants or a different researcher). Investigating how other users adopt the framework as a management tool for engagements in their context is left as a recommendation for future research.

9.5   Recommendations for future work

Several promising opportunities for further investigation and paths for future research were identified as the research progressed. Several of these emerged from the reflections on the case study or from the limitations of this research. Others were identified as research gaps from the literature which were not addressed in this research. The recommendations are listed below:

1. This research considered mainly the engagement practices and mechanisms associated with stakeholder engagement in IPs. A more thorough investigation of the common barriers to stakeholder engagement, and how to overcome them, would benefit the research domain. This may inform the appropriate additions to the conceptual framework for stakeholder engagement in IPs.

2. Further investigations into the importance of visioning and planning for IPs. These did not appear frequently in the content analysis of the primary publications; however, during the subject matter expert interviews and case study it became clear that these were necessary when considering the engagement and collaboration of diverse stakeholders.

3. The final conceptual framework, and the overall management tool for stakeholder engagement in IPs, may be improved by including recommendations for 'how' its implementation criteria may be addressed. This may require an investigation into the existing methods and tools used to address the PoE themes. For example, these may include methods for identifying stakeholders, methods for conflict management and tools for facilitating engagements.

4. The PoE theme, 'participation', has the largest number of gaps highlighted by the subject matter expert interviews in Chapter 6. It refers to the participation of marginalised stakeholders in innovation development. This presents the need for future research to focus on this theme.

5. Future research might consider when to engage stakeholders. This may require an investigation into the different IP lifecycle phases and the needs of the IP at these different stages. This may be a complex investigation as IPs are diverse and may have several life cycle phases.

6. Research focusing on the role of champions in the context of IPs and ecosystems is recommended. The systematic literature review did not shed much light on this issue; however, the research identified championing as an important aspect for development initiatives. There may indeed be several types of champions present in an IP [178].

7. The impact of cognitive biases on decision-making and the consequences of unchecked biases on stakeholder engagement need further investigating. This may include understanding how and why bias develops and might be contextually specific. Approaches for debiasing stakeholder engagements may also require additional research in the field.

8. The conceptual framework and the overall management tool would benefit from further testing and refinement. The use of additional case studies and pilot studies may be useful for this. Future research should consider larger, more complex stakeholder networks. Pilot studies may test the tool's implementation by different user types, including stakeholders, independent consultants and other researchers.

9. The case study did not consider an IP where the marginalised stakeholders and beneficiaries of the intervention are direct participants. Future research should identify case studies where this is the case.

10. The case study revealed the presence of 'implied' and 'raised' issues in stakeholder networks. Future research might consider investigating ways to bring issues 'into the light'; that is, to find ways to ensure that impactful issues are expressly stated by stakeholders.

9.6   Concluding remarks: Chapter 9

This research adds to the efforts of many researchers and practitioners who have attempted to understand and manage stakeholder engagement with the intention to see people's collaborations thrive and complex problems addressed. Reflecting on the research, one thing is very clear: interactions between people are complex and can become strained.

Participation of the poor, marginalised population of South Africa is extremely complicated. This was an eye-opener for the researcher who, at first, naively regarded participation of the marginalised as the simple and almost magical solution to every complex problem. Possibly the greatest lesson learnt during the research process is that participation is difficult and can have high risks. The gravity of the positive or negative impact on people's lives should be recognised. Participation can also be resource- and time-intensive. However, attempts to understand participation and its potential in innovation development must continue.

One simply cannot save the whole world at once; however, you can start somewhere. The theme of starting small rang clear throughout the research process. It is better to offer one community – even one person – with opportunities for holistic empowerment than it is to take on too big a task and fail. Rather, start small; reflect; and learn. Then, go a little bigger. It may take a very long time, but this is how we will change the world.

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Appendix A: Systematic review primary publications

	Title of publication	Reference
1	A paradigm shift in African agricultural research for development: the role of innovation platforms	[140]
2	An innovation platform for institutional change in Ghana's cocoa sector	[172]
3	Approaches for Setting-up Multi-Stakeholder Platforms for Agricultural Research and Development	[167]
4	Bringing farmers into the game. Strengthening farmers' role in the innovation process through a simulation game, a case from Tunisia	[141]
5	Building a roundtable for a sustainable hazelnut supply chain	[170]
6	Building more effective partnerships for innovation in urban water management	[106]
7	Building Partnership to Improve Migrants' Access to Healthcare in Mumbai	[162]
8	Building Trust in Multi-stakeholder Partnerships: Critical Emotional Incidents and Practices of Engagement	[177]
9	Capturing the impacts of agricultural innovation platforms: An empirical evaluation of village crop-livestock development platforms in Burkina Faso	[171]
10	City-as-a-Platform: The Rise of Participatory Innovation Platforms in Finnish Cities	[182]
11	Compositional dynamics of multilevel innovation platforms in agricultural research for development	[165]
12	Creating food self reliance [*sic*] among the smallholder farmers of eastern Zimbabwe: exploring the role of integrated agricultural research for development	[164]
13	How can we envision smallholder positioning in African agribusiness? Harnessing innovation and capabilities	[179]
14	Innovation platforms and institutional change: the case of small-scale palm oil processing in Ghana	[174]
15	Innovation platforms and projects to support smallholder development-experiences from Sub-Saharan Africa	[163]
16	Integrated agricultural landscape management: Case study on inclusive innovation processes, monitoring and evaluation in the Mbeya Region, Tanzania	[142]
17	Looking at agricultural innovation platforms through an innovation champion lens: An analysis of three cases in West Africa	[178]
18	Moving research to practice through partnership: A case study in Asphalt Paving	[161]
19	Promoting effective multi-stakeholder partnership for policy development for smallholder farming systems: A case of the Sub Saharan Africa challenge programme	[139]

	Title of publication	Reference
20	Service Design for Social Innovation through Participatory Action Research	[212]
21	Smart Partnerships to Increase Equity in Education	[175]
22	Stakeholder roles for fostering ambidexterity in Sub-Saharan African agricultural netchains for the emergence of multi-stakeholder cooperatives	[168]
23	Students as change agents in a town-wide sustainability transformation: the Oberlin Project at Oberlin College	[185]
24	The International Coral Reef Initiative (ICRI): Global priorities for the conservation and management of coral reefs and the need for partnerships	[138]
25	University-supported inclusive innovation platform: The case of university of Fort Hare	[166]
26	Unravelling group dynamics in institutional learning processes	[169]
27	Unravelling the role of innovation platforms in supporting co-evolution of innovation: Contributions and tensions in a smallholder dairy development programme	[116]
28	Whole-of-society approach for public health policymaking: a case study of polycentric governance from Quebec, Canada	[186]
29	Addressing gender dynamics in innovation platforms	[181]
30	Communication in innovation platforms	[173]
31	Developing innovation capacity through innovation platforms	[184]
32	Facilitating innovation platforms	[23]
33	Impact of innovation platforms	[22]
34	Innovation platforms to shape national policy	[180]
35	Linking action at different levels through innovation platforms	[21]
36	Monitoring innovation platforms	[183]
37	Power dynamics and representation in innovation platforms	[176]
38	Research and innovation platforms	[20]
39	What are innovation platforms?	[11]

Appendix B: Stakeholder analysis techniques

A brief description of each of the 10 stakeholder analysis techniques identified by Reed and colleagues [128] is given in below.

Technique	Description
Focus groups	Small group of individuals brainstorm potential stakeholders and their attributes and categorise them. Useful when discussion is required to develop consensus and understanding. Requires good facilitation as it is less structured than other techniques.
Semi-structured interviews	Interviews with a selection of stakeholders to supplement focus group data. Deeper understanding of relationships between stakeholders is possible, although the process may be time consuming and costly.
Snowball sampling	Individual stakeholders are asked to identify additional stakeholder categories and provide contacts. Useful in that stakeholders are already interested and more likely to participate. The risk of stakeholder bias may lead to the identification of a homogenous stakeholder group.
Interest-Influence matrices	Stakeholders are ranked according to their relative interest and influence. This highlights power dynamics, making it possible to prioritise stakeholders, but it may marginalise certain important stakeholder groups.
Stakeholder-led stakeholder categorisation	Stakeholders participate in a process of identifying stakeholder groups and assigning stakeholders to these groups. Stakeholder categories are based on the insights of the stakeholders themselves, although inconsistent perceptions among stakeholders may render the process useless.
Q methodology	Stakeholders sort statements according to how much they agree with them, allowing certain ways of thinking to be identified. Categorisation can be done according to these different discourses. It is possible that not all possible discourses are identified, only those exhibited by the selection of stakeholders interviewed.
Actor-linkage matrices	A two-dimensional relationship matrix of stakeholders is produced and their relationships are mapped using codes. This is an easy approach which requires little resources. Complex interrelationships are difficult to map constructively in this way.
Social Network Analysis	Structured interviews and questionnaires are used to identify stakeholder networks and to measure relational ties in these networks. Influential stakeholders and peripheral stakeholders are distinguishable. The process is time consuming and requires an expert in the analysis methods used.
Knowledge mapping	Semi-structured interviews are used to identify interactions and knowledges. The technique is used in conjunction with social network analysis. Identifies stakeholders who are compatible and helps establish power balances. Differences in knowledge held by stakeholders may not match the knowledge that is needed by other stakeholders.
Radical transactiveness	Snow-ball sampling is used to identify those stakeholders on the outskirts and strategies are developed to include their concerns. Stakeholders who may have been overlooked are identified. This minimises the risks to the participatory process of the project. Process is time consuming and costly.

Appendix C: Gap analysis: Categorisation of publications

	Paradigm/Lens	Unit of Analysis	Unit of Observation	Authors
	Complexity science	Agro-entrepreneurship	Business sustainability	[179]
Innovation systems	AIS	Innovation platform	Intervention activities	[174]
		Innovation platform	Causal mechanisms	[172]
		Multi-stakeholder partnership	Participation in knowledge co-production	[141]
		Innovation platform	Multiple: case specific	[163]
		Innovation platform	Co-evolution of innovation	[116]
		Innovation platform	Innovation champions	[178]
		Innovation platform	Capacity development	[140]
	IAR4D	Innovation platform	Formation of IP	[167]
		Innovation platform	Relevance of promoted technologies and innovations	[164]
	Components-functions perspective	Innovation platform	Positioning and role of IP	[166]
	Multi-level interactions	Innovation platform	Multi-level stakeholder engagement	[165]
	IS	Innovation platform	IP structure	[171]
	IALM	Innovation platform	Outcomes of IALM	[142]
	Learning alliance	Multi-stakeholder partnership	Success indicators	[106]
	Learning environments	Multi-stakeholder partnership	Activities	[175]
	Netchains	Multi-stakeholder partnership	Actor roles	[168]
Policy development	Whole-of-society-approach	Policy systems in health	Governance	[186]
	Economic development	Innovation platform	Participant mechanisms	[182]

Paradigm/Lens	Unit of Analysis	Unit of Observation	Authors
Global policy framework	International partnership	Global priorities for coral reef conservation	[138]
Health policy	Innovation platform	Formation of IP	[162]
Agricultural development policy	Multi-stakeholder partnership	IP design principles	[139]
Research to practice	Multi-stakeholder partnership	Collaboration processes	[161]
Sustainable agricultural SCs	Multi-stakeholder partnership	Partnership formation	[170]
Value co-creation	(Social) Innovation platform	Activities and actor roles	[212]
None	Multi-stakeholder partnership	Students as agents of change	[185]
	Multi-stakeholder partnership	Trust building	[177]
	Innovation platform	Institutional learning	[169]

Appendix D: Inventory of engagement themes

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
Communi-cation	• Open dialogue among actors [138] • Continuous and consistent communication [161], [170] • Honesty and transparency in communication [170] • Clear and specific articulations [178] • Simplicity and clarity in articulations [140] • Use both formal (meetings) and informal (emails, phone calls, chats (dialogue)) types/channels [165] • Informal communication channels are not underestimated [141], [162], [169] • Strong interpersonal communication among participants [173] • Use a broad range of media, practices and approaches, requiring a range of skills [173](including publishing, ICT, radio and video, design) • Trust exists among platform participants and is continuously being built [166] • Dialogues and communications are supplemented by strategic interventions on the sides of less power participants to balance out power asymmetries [141] and to ensure all members are respected, valued and have a voice [161] • Accepted norms of communication, which often differ across actors, are analysed and reformulated if necessary to form a common understanding [169]	• Powers the platform [173]- innovation is crippled without communication • Creates a shared understanding among participants [138] • Empowers demand articulation [106], [116], [139] • Directs the development of platform objectives [173] • Includes all actors in the discussions • Informal communication channels creates a non-threatening space which promotes relationship building among platform participants [161], [169] • Empowers facilitation of the IP [23]- directing information between different parts of the platform • Required for managing and governing the platform [166] • Directs alignment of participants with the platform goals and objectives [142] • Shapes the changes of the platform goals and objects with time [168] • Drives trust building among platform actors [166] • Empowers the sharing of knowledge and experience among platform participants [165], [170], which empowers shared learning [141], which in turns builds the capacity of participants • Empowers planning of platform activities [165] • Empowers monitoring of progress and feedback [165] • Sharing of results of platform activities with platform participants [106] • Balance power asymmetries among platform participants [141] • Establishes linkages with stakeholders in the wider innovation ecosystem [166], increasing the access to resources and capacity of the platform • Allows information to flow into and out from the platform to the wider innovation network, empowering knowledge sharing between different platforms [139], [173] • Sharing of results with interested stakeholders in the wider innovation ecosystem [106] • Informal communications are effective means of disseminating information to wider stakeholders (eg. community members not directly participating in the platform) [162] • Common understanding leads to shared codes of conduct and effective collaboration [169]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
Trust building	• Understanding that trust has a psychological foundation to it; emotionality plays a large role [177] • Awareness of potential distrust of non-traditional stakeholders (community) towards traditional stakeholders – past trust that has been lost may need to be re-established [161], [166] • Facilitation is imperative [172] • Consistency of traditional actors in their cooperation and dealings [186] • Needs time [11], [169], [177], [186] • Participants must be given an "in" despite potential initial feelings of distrust [186] (showing of good faith) • Transparency in all dealings (communication, resource allocation, sharing information, reporting on activities (M&E)) [140], [161], [175], [177] • Clear linkages between actions and benefits are recognizable [138], [165] • Stakeholders are approached with care [138] • Stakeholder involvement is starting early on and sustained throughout [138] • Empower the participants and the community; build on existing capacities [138] • Leverage existing trust relationships between stakeholders [170], [171] • Observing and understanding social behaviour of stakeholders [140] • Good governance of the platform [140] • Start small; modest goals which are easily achievable [138], [161], [177] • Actions proving trustworthiness [161], [177], [186] • Demonstrating good intentions [177] • Keeping promises [177] • Perceptions of external stakeholders are managed [170] (sometimes they just have the wrong idea, misconceptions) • Monitoring and evaluation procedures and effective feedback of results [170] • Discussions around the challenges and the contexts from which they emerge [106] • Tangible outcomes [11]	• Trust is a guide to the choices that are made with regards to willingness to be honest and the level of cooperation, the result of which is: • Influences the functioning of the platform; lubricant and glue [140], [164], [168], [177] • Increased desire of non-traditional stakeholders to serve as platform participants [186] • Increased levels of cooperation [186] • Increased face-to-face communication with stakeholders [186] • Alignment of (participant) goals [167], [186] • Influences the relationships between platform participants [140] • Expansion of partnership objectives [177] • Distributed responsibility and risk [163], [175] • Free flow of ideas and knowledge being shared; empowers shared learning [106], [166], [169] • Participants care for one another and would not act in a way that is detrimental to one another [171] • Additional stakeholders become interested to join [106] • Community members trust the traditional platform participants [186] • Community cooperation is reciprocated [186] • Overall increase in the community's trust of the platform activities • Overall increase in community's trust in the provisions and services of the specific sector (agricultural, public health) [186] • Increase access to resources and capacity [165]
Conflict management	• A formal conflict resolution mechanism should be in place. Decide on this beforehand (Kefasi et al, 2011) • Facilitation is important; conflict management is the responsibility of the facilitator [23], [161] • Mediation between different interests [23] • Awareness of existing power dynamics; recognise potential issues and conflicts [141], [166] • Addressing power plays by participants [23] • Includes negotiating [139] • Compromise is exercised; issues unrelated to the platform are compartmentalised; "agree to disagree" [161]	• Power struggles are addressed as they arise [23] • Potential conflicts, misunderstandings and issues are mitigated [166] • Participants are reminded that collaboration is in their best interest [23] • Collective action is focused in the areas of common interest [161] • Maintain alignment [161]
Facilitation	• *Skills*: management skills, people skills [167]; governance and leadership skills [140] • Specific skills required [138], [161] • Facilitators must be trustworthy [161] • The role is seen as a formal leadership position in the platform [161]	• Necessary for the healthy functioning of the IP [140], [166], [167] • Participation is evenly distributed [178] • Establish and maintain alignment of participants; holding participants accountable [23], [163], [202]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Facilitator role can be fulfilled by an individual or a small team [162] • Alternative to control of participants [138] • Responsive to highly dynamic process of co-evolution of innovation; flexible and adaptive [23], [116] • Intermediary between conflicts [23], [116] • Identifying, engaging and linking prospective participants [116], [161], [165]; extend the network [168] • Coordinating interactions [116], [166], [202] • Mediating negotiations [116] • Manage the dynamics of participation; balance champions and "normal" involvement [178] • Transparent [140] • Must allow for the active involvement of participants and the development of capacities [138], [140] • Monitor power dynamics [161], [176] • Prevent and manage conflicts [23], [161] • Recognize the dynamics of a participatory approach to innovation: sensitive to cultural and gender differences, assist weaker participants • Requires effective communication [173] • Facilitation must intentionally drive the scaling up and out of interventions [168] • Create a climate of respect [161] • The role might move to someone else in time [11] • Sensitive to gender dynamics [181]	• Prioritises tasks and maintains platform focus on the collective goal [23] • Guiding conversations and managing dialogue [23], [163]
Managing power dynamics	• Acknowledging that non-traditional innovation participants are often less powerful than traditional actors, who carry greater influence, and that their combination creates a power imbalance [176] • Careful consideration is made to ensure that all groups are represented [176] • Careful consideration regarding what is prioritised [176] • Careful consideration regarding the entry points of innovation solutions [176] • Careful consideration given to the design and adoption of innovation solutions [176] • Potential power and status imbalances are identified when investigating the economic, political and cultural context [176] • Power dynamics is constantly monitored- not taken for granted [176] • Complex, expressible in various ways, including resistance and not adopting platform innovations or solutions [176] • Requires effective facilitation [23] • Stakeholders who are approached to join the IP have an individual interest in the platform rather than just serving as a representative of an organisation or a sector [172] • Economic position, resource richness, social assets can all account for power imbalances [170]; also participation itself [141] • Proper alignment and representation are facilitated continuously • Special interventions for those who have less power are advocated to strengthen their "posture" in participating [141]	• Full potential of the platform to develop common solutions to a common problem can be reached [176] • Each platform participant is seen as equally important to the platform [176] • Each platform participant is able to voice their needs, and have them heard [173], [176] • Poorly managed power dynamics can increase inequalities and intensify problems, rather than solve them; cripple relationships and destroy trust; influence which activities are prioritised [165], [173], [176], [182] • Counters effects of the difference in wealth and influence of different platform actors [176] • Influence is not based on level of resource participation [161] • Associates the often differing priorities of men and women [176] • Community needs are met rather than new rules being enforced [176] • Access to information is fair and information is not manipulated [176] • Local knowledge is promoted [176] • Decision-making power is shared [161] • Participation is equitable (vs equal…) [161]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Participatory monitoring and feedback of actions [141] (focus on the participatory aspect: it promotes the idea of forming part of something rather than ging your own way due to your self-interest) • Intentional distribution of tasks and activities to non-traditional actors [169]	• Participants do not perceive one another as competitors, instead as teammates [23] • Counters self-defensive self-interest and power plays [172] • Participants regard one another with respect and dignity [141] • Empowerment of platform participants is realised
Strategic Represent-ation	• Aiming for strategic engagement of key stakeholders rather than equal representation throughout the innovation process [161], [165] • A "common ingredient, a bond, a mutually supportable goal" is beneficial in approaching key stakeholders and motivating them to participate [161] • Identifying appropriate stakeholders using stakeholder analysis [106], [116], [142], [162], [166], [167], [170], [172], [176], [202] and engaging (making contact with; linking) the identified stakeholders [116], [167], including: • Grassroots-level stakeholders (non-traditional actors) [138], [162], [166]; • Other (non-community) concerned and interested stakeholders [138] • Representation should challenge the accepted norms or traditional representation structures of traditional innovation procedures, including contributions from the youth [179] • Stakeholder analysis is a joint participatory procedure: Facilitator and industry stakeholders [202], stakeholders share what they believe they can bring to the table [170] • Approaching and linking other stakeholders is facilitated carefully, allowing trust to be built [138] • Consideration given to challenges that may face involving non-traditional stakeholders, eg. Lack of organisation among these stakeholders [170]; judgement from other IP participants less adequate in knowledge and experience [141] • Strategic consideration is given to the scaling-up that is desired (is it for one community or for a number of communities?), which influences which stakeholders should be recruited [202] • Focus should be given to stakeholders' interest as individuals also, not just as representatives of their sector or organisation [172] • Representation is dynamic- changing as the needs and platform goals and objectives shift as the IP moves through different phases and stages of the innovation process; new participants join if they become interested and participants leave when they lose interest; new stakeholders are linked when their competencies become beneficial to the platform [11], [106], [142], [165], [166] • Representation is not simply including masses of people, even non-traditional actors, but is the strategic configuration of stakeholder groups to best achieve the desired functions at each stage of the innovation process [165]. It may be that the community is not homogenous and so representation is influenced [162] • Not "mechanically" incorporating participants to serve external agendas [141], but allowing their functions to emerge as their respective skill sets and knowledge allows them to address the innovations needed • The representation of stakeholders must be fully backed-up by the platform: efforts must be made to ensure all members are treated with fairness and respect [161]	• Empowers innovation for inclusive development and inclusive innovation [165] • Diverse actors are linked up [142] • Know your contenders; the agendas and expectations, who represents different groups, who will act as mediators or may create barriers, as hands and feet on the ground, their skill sets and knowledge, enthusiasm [166], [170], [176], [202] • The presence of platform participants is justified and their roles and responsibilities are understood [138], [139], [141], [166], [170] • Decision-making and implementation includes those stakeholders who are closer to the context and have an interdependency with the resource base [138] • Empowers proper **Alignment** [138], [166] • Grassroots (community) representation means innovation solutions are readily adopted and implemented, and feedback can be obtained directly [182], [185] • Grassroots (community) representation means the local culture (norms, values and preferences) and institutional complexities are better understood; understanding of users and context of use [106], [173], [182] • Diversity in representation means a rich pool of competences and resources from which other participants can draw [106], [170] • Presence of other (non-community) stakeholders increases the pool of financial, human and other resources [138], [166], [185] • Presence of other (non-community) stakeholders increases the capacity of the platform, and its presence in specific sectors, and the capacity of the groups it represents [139], [165], [166], [175] • Presence of a high-level stakeholder may assist buy-in from participants [175] • Balances out power differences and mediates **power dynamics** and expressions of self-interest [169], [172], [176], [182] • Influences the organisational structure of the IP as well as how governance is facilitated [166], [182] • Increases the potential for **shared learning** [142], [170] • Leadership and initiative emerges in different areas due to diverse representation [179] • The wider ecosystem of stakeholders is more easily reached because of the grassroots representatives [138]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
		• Empowers accountability to the wider ecosystem [138] Composition influences capacity of the IP to be a legitimate voice in its industry sector- a voice to be listened to (including policy environments) [139], [172]
Participation	• Recruiting participants may be easier than sustaining interest (Gawde, Sivakami and Babu,) • Participation is more than representation; representation does not mean true involvement of actors in the process [176] • Participation of local community (non-traditional) actors is beyond problem diagnosis, and includes the solution construction and implementation [141]; equitable participation is ensured [161] • The different roles and responsibilities (functions) of each platform participant are clearly defined and agreed upon by the participants [138], [142], [161], [165], [166] • Clear incentives or benefits for effective participation must be in place to motivate effective participation [165] • Other participants are able and willing to value the contributions of other IP members; mutual respect for each other's roles [139] [161], [174] • Representation has considered participants who are self-motivated; they are enthusiastic to explore what changes are needed and possible [162], [174], and sometimes even driven by threats of regulatory action [161] • The roles and responsibilities of participants are in line with their interests and expertise [166] • The expertise, capacities and interests of the participants have been mapped and communicated [106] • Roles and responsibilities are coordinated between participants [142]; agreement is made on how participants must go about pursuing their roles without getting in the way of other participants pursuing their roles [139]; participants must be open to working together in ways they are not used to [161] • Potential constraints to participation are considered; strict programme timelines may hinder community participation [162]; incentives and benefits for participation are not clearly defined and communicated [162]; participant resources might be tied up elsewhere [162] • Participation is marked by clear inputs of resources and competences, sharing of risk, commitment to scale the platform activities [170] • Tangible outcomes[11]	• Create a shared understanding of each participant's roles and responsibilities [138] • Accountability is practiced • Motivated to participate [11] • Effects the governance structure of the platform [182] • Empowers local community actors and builds their capacities [141] • Platform participants become "authors of their own learning" as they deconstruct the problems and construct solutions [141] • Feeling of ownership of the innovation solutions [11]
Alignment	• Alignment is constantly facilitated [23]; not forced, but progressively and carefully cultivated throughout the life of the IP [166], [172] • Managing hard and soft institutions (eg. People thinking that smallholder farmers are not educated and should thus not participate in research) [139], [166] • Appropriate communication methods are used to drive alignment [165], [173] • Joint identification and analyses of emerging challenges and research questions [161], [162], [165], [172], [174], [175]	• Alignment (coordination) teaches participants to be mutually useful to one another [139], [169], [171] • Actors understand that there is mutual benefit in their participation and align their reward pathways (eg. Private for-profit sectors and public sector); actors depend on one another for realizing their objectives [161], [164], [165], [167], [170], [172] • Breaking down distrust between platform participants [167]; Platform participants learn to trust one another, and navigate their traditional competing or co-dependent roles within the value chain [171]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Joint planning (co-development) and coordination of platform activities which intentionally includes all platform participants in the planning process [11], [106], [142], [162], [165], [171], [174] • Platform participants are willing to reconfigure their roles and responsibilities throughout the innovation process, thus individuals are willing to adapt [116] • Intentional demand articulation; identifying innovation challenges and opportunities through diagnostic exercises, visioning and needs assessment, where needs emerge as perceived by the platform participants [106], [116], [162], [175] • Platform participants are able to voice what their needs are and they want the IP to incorporate these needs [171] • Accountability[139] is practiced- research and platform activity results are communicated to platform participants and to other stakeholders [161], [163] • Enough attention given to the analysis of the context of emergence of the challenge, eg. using a baseline analysis [174], [176] • Platform participants identify, prioritise, and identify activities needed to overcome, institutional constraints [174] • Local community is engaged by the platform [142], [162] • Negotiation among platform participants, which directs the development of the platform goals and objectives, and how this will be achieved [22], [139], [141], [170] • Roles and responsibilities of the platform participants; commitments to action; philosophy and principles underpinning the partnership; shared vision, value and goals; are clarified early on and included in a Memorandum of Understanding (or something similar: partnership policy; contract) [139], [165], [170] • Reflection meetings allow for feedback and adjustment of the platform pathways [165], [169] • Sensitivity to power dynamics should be exercised to counter unfair prioritization of tasks (sometimes funds are restricted, so who gets access and who doesn't?) [106], [165] • Trade off analyses have been done, and in a participative fashion, to understands the effects of the action [139] • Persuasion [22] • Changing focus [11]	• Strengthening of relationships between platform participants (individuals and organisations) [174] • Platform participants commit to a common set of platform goals and objectives (vision) [23], [138], [139], [142], [161], [170], [175], [177] • Platform goals and objectives are shaped by the demands of platform participants and the organisations or communities which they represent [11], [106], [116], [166], [173] • Innovations are relevant and appropriate to the context of the platform participants [139] • Improved adoption [11] • Counter diverging and contradicting views around innovation processes and concepts, including its purpose and place in improving the lives of the commonly marginalised, especially among platform participants; developing mutual understandings around common issues [140], [161] • Creates a common understanding among platform participants [173] • Better exchange of information among participants as they become more accustomed to trusting one another and working together, which promotes shared learning [171] • Shared leaning [165] • Accountability keeps the platform and its participants aligned with the collective vision [163] • Addresses people's preconceived thought structures and ideas which would stand in the way of effective partnership and innovation [139] • Counters criticism and dwelling in the past [106] • Motivates effective **participation** of platform participants [142] • Platform goals and objectives meet the needs and demands of the greater platform ecosystem; the communities from whom the platform participants come [106], [166] • Institutional and political contexts of the communities are taken into account [106] • Accountability between platform and wider ecosystem of stakeholders keeps the platform aligned with the demands and needs which have emerged (empowering the poor; raising their voice in policy making) [139], [161], [163] • Community engagement creates focus and incentive for participation [142]
Monitoring and evaluation	• Alternate methods to traditional (non-participatory) approaches required; novel approaches required [106] ***Monitoring*** • Participatory approach [138]–[140], [142], [183] ; including self-monitoring [139] (WHY?... see *) • Collaborative [142]	• Simple techniques are easily understood by the communities [138] • Ensures each participant fulfils their roles and responsibilities [138], [170] • Systematic tracking of movement of resources and use of services [106], [116]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Ongoing [138], [170], [176] • Monitoring of participation approaches [138] • Monitoring parameters are developed and standardised [138] • Monitoring parameters are relevant to the social, cultural, political context [106], [138]; mindful of available time and resources [142] • Flexible and adaptive to dynamic contexts [142] • Platform activities and actions have indicators that are monitorable; set objectives [106], [142] • Simple techniques [138] • *Methods*: Records management software [116]; observation [176]; documentation [173], [176]; network analysis [183]; participatory impact pathways [183]; household surveys [183]; outcome mapping [183]; most significant change [183]; • Clearly define who is responsible for the monitoring of respective activities and actions [142]; M&E committees [168] • Document changes [183] • Activity monitoring [183] • Process monitoring [183] ***Evaluation*** • Participatory [138]–[142]; including self-evaluation [139] • Collaborative [142] • Periodic repetition throughout the life cycle of the IP [202] • *Methods*: Reflection [166]; pairwise matrix ranking (as a participatory approach) [142]; outcome mapping [106]; scoring ladders [106] • Evaluate community perceptions of platform activities and the contribution of these activities to the platform objectives [142] • Evaluate the indicators for respective actions and activities that were monitored [142] • Results are communicated timeously [106] • Results are communicated appropriately/appropriate feedback [106]	• Track which platform activities are prioritised, guarding the power dynamics [176] • Growth of an institutional memory of what the platform achieved and how it did so [173] • Tracking the outcomes and impacts of the actions [142], [170] • Stakeholder information is acquired and used [142] • Improve management of platform and activities [183] • Promote larger scale changes [183] • Qualitative and quantitative evidence of the platform's work [183] • Increased trust in the platform activities [116] • Stakeholders around the platform understand what the platform has done and achieved [173] • Captures how the IP's understanding of the challenge environment evolves and develops [202] • Captures changes in capacity of the IP as the IP matures [174] • * Strengths and weaknesses of actions and strategy are quickly fed into the platform [139] • * Non-traditional stakeholders have their capabilities developed (negotiating and developing their own arguments) [141]
Feedback of platform activities	• Communication is important [170] • Ongoing [138] • Rapid relaying of feedback [183] • Participatory [138], [139], [142], [172] • Track the platform's course [23] • Embracing failure [163] • Includes the results/outcomes of the platform activities- whether positive or negative [170], [172] • Includes the effects of platform activities- whether positive or negative [170], [172] • Responsibility is taken for the reported outcomes and effects of activities [172] • Feedback is discussed by the platform members [172] • Communicate profound successes and suggestions to civil service, technical agencies and government [142], [165], [172] • Aided by reflection meetings/feedback sessions [165]	• Ongoing learning [142] • Strengthen local institutions [138] • Awareness of how the platform's core activities are performing [142] • Participatory (shared) learning [140], [142], [172] • Maintain alignment [23] • Learn from mistakes and failures [163] • Tracks changing stakeholder preferences [165] • Informs future activities (informed action); adaptation and adjustment of the innovation path; sustainable and comprehensive solutions; improvements [139], [142], [162], [165], [166], [170], [172] • New ideas are developed [170] • External stakeholders increase their trust in the platform [170], [172] • Policy recommendations [142]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• *Methods*: Report documents [142]; publishing results and experiences gained [163] • Feedback includes relaying key learning points gained from the activities back to "field workers" [142]	
Resource mobilisation	• Representation can positively influence the resource positioning of the platform [139], [175] • Resources and capacity are interrelated- they form a reinforcing loop [179] • Resources: Financial, human and intellectual capital, time, physical (water) • Planning for resource requirements [166] • Explore what resources are available in the network (from participants, interested stakeholders) [166] • Securing of required resources [166] • Participation of stakeholders "activates" their resources and capacity [169] • Adequate control over accessibility to resources is put in place, including understanding of resource allocation procedures [106], [138] • Understanding of tenure systems; rights of mo [138]. Someone able to advise on these is present as a participant. • Facilitation rather than control of resource utilisation [138] • Funding should reflect the ambitions of the platform; activity timeframes, extent of participation and extent of capability building among participants [138] • Timeframes are developed collectively [138] • Leverage the participation of traditional (non-community) participants who often have access to resources [166], [175], [185] • Representation and participation of traditional actors includes individuals who are able to make commitments and decisions on behalf of their organisations [172] • The potential of IPs is noticed by donors, governments and development administrators and they acknowledge the need to fund IPs and their activities [202] • Demands of resource providers are not taken lightly to ensure a continued relationship and access to resources [106] • Intentions of the platform must be articulated clearly, despite an agenda not being set in the beginning [106], [175] • Where resources come from within the platform (from direct participants), attention must be given to power dynamics remaining in balance [106], [161], [165], [169]; influence should not be skewed based on the level of financial contributions made • Power dynamics around mobilizing resources are balanced [165] Provide information [21]	• Communities have access to all necessary resources [138] • Communities gain capacity in managing their own resources [138] • Maintain long-term sustainability [138], [166] • Adequate time is given for processes to develop [138] • Resources (especially time and money) influence the approaches and tools that can be used, the flexibility of the platform and the intensity of efforts to meet the needs of all the involved stakeholders [165], [173] • Clear intentions of the platform would motivate potential funders to contribute resources despite no set plan of action existing as yet [106]
Capacity building	***Individual capacities of participants*** • Building the capabilities and capacities of the participants means empowering them [141] • Involve all relevant stakeholders as early as possible and sustain involvement throughout the life of the platform [138] • Emphasis lies on the participatory processes rather than specific results [138], as collaboration needs time to evolve and grow • Build on existing local institutions where possible [106], [138] • Acknowledge different interests, competencies and skills of the various participants [140], [166]	• Personal growth of platform participants • Lessons are learnt which allow for replication and growth- initial successes serve as a basis to develop more comprehensive and integrated activities [138] • Encourages long-term sustainability [138] • Initial simplicity may serve to encourage participation and buy-in from platform participants [138] • Leverage the existing capacity of the platform participants [106], [138], [166], [170]

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PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Capacity building of platform participants is intentional, and includes: coaching and mentoring (supporting participants in activities- both platform and their own production activities), opportunities for experiential learning (e.g. experimentation) and shared learning, improved information sharing [23], [106], [140]–[142], [171], [173] • Governance and leadership, representation and power dynamics, participatory monitoring, evaluation and learning, information and knowledge sharing, lobbying for change, market access techniques, improved activities related to their sectors [23], [140], [142], [171], [173] • Transfer of knowledge and technology [166] • Identifying areas of focus for improvement (knowledge gaps), eg. through value chain analysis [11], [140], [142], mapping of capacities and skills of participants [106] • Help non-traditional participants understand what the value of their efforts and contribution is along the entire value chain [172] • Platform activities should not only focus on improving the lives and building the capabilities of the direct participants, but of the entire group or community whom they represent also [141] • Capacity building evolves into empowerment as interactive participation becomes self-organisation [141] • Local knowledge and existing capacity of non-traditional platform participants is not "formatted", where traditional methods determine and restrict what may be "known" [141] • Recognizing potential traps which disempower participants, e.g. involving them in problem diagnosis but not in the construction of solutions [141] • Accustomed means of communication and interaction are assessed and reformulated to improve common understanding and effective collaboration [169] • Provide information and resources to participants [22] ***Capacity of the IP*** • Activities to raise awareness around the issues the IP hopes to address [142] • Start small and build on initial successes [138], [165] • Training of IP facilitators must shift their focus towards the participatory processes of innovation for inclusive development [140] • Linkages are made with other interested stakeholders and organisations outside the platform who are necessary to achieve the overall objective. These linkages are sustained through communication, information dissemination [166], [171], [173] • Organising/coordinating linkages between stakeholders [168] • Careful documentation of platform events and activities to create an institutional memory [173] • Strategic planning of the desired scaling of the platform activities influences the capacity that is desired [202] • Not confining learning about a sector to the geographical area of the platform's focus only, but to gain understanding of how the sector operates and performs on a broader scale [172] increases the understanding of the sector on a broad or even global scale • Strategic representation can positively influence the inherent capacity of a platform [170], [172]	• Knowledge is power; understanding a sector on a broad-scale and how it operates at different geographical areas increases the capacity of the platform to innovate on what other sector areas are doing • Capability building is required for proper execution of platform activities [142] • Participants develop self-organization, learning new skills, changing mindsets, valuing others' roles in innovation, having a holistic view, being able to adapt to changing situations, creating new ideas, recognizing opportunities, being proactive, using indigenous ideas, and looking to the future [184] • Initial successes encourage trust and confidence in the platform and its activities [161], [165] • Initial successes increase the ability to obtain resources for the platform [161], [165] • Leverage the existing capacity of the community [138] • Leverage existing networks and relationships as points of entry for stakeholder engagement [162] • IPs become increasingly mainstreamed as their potential is recognized [140] • The strategic positioning of the platform as a voice for the communities it wishes to help is dependent on its capacity; capacity means members have the opportunity to relay information and opinions regarding change to the highest levels of civil service, technical agencies and government [142], [172] • An institutional memory allows others to understand what the platform has achieved and how [173] • Awareness allows for the emergence and engagement of interested stakeholders [142] • Capacity increases awareness, which allows for increased trust in the platform and adoption of solutions by the community [106], [139], [142] • Communities are encouraged to develop and achieve their own objectives for change [142], [168] • Increased access to resources [171] • Linkages increases trust between members of different communities [162], [171] • Networks allow for increased knowledge diffusion within and outwards of the platform [106], [165] • Exposure to policy environments [139] • Capacity gets the fish to bite; the target group to get involved in the innovation process [141] • Scaling out successful innovations [21] • Empowering local actors to influence policy [21]

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PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Presence of high profile traditional stakeholders can encourage trust in the platform and its activities by the community and wider ecosystem [106], [166] • Engaging stakeholders at various levels of society strengthens IP capacity [165] • Communicate results and emerging innovations due to the platform activities effectively [106] • Mechanisms for sustainability are in place; it is not just temporary "empowerment" [175] • Legitimacy gained through support from government agencies [165] • Negotiate with government [11] • Horizontal linkages [21] • Vertical linkages across levels [21]	• Develop value chains [21] • Cross-learning
Visioning and planning	• Formal proposals for activities [170] • Define clear goals/objectives [170], [182] • Define clear benefits [170] • Define future steps to be followed [165], [170] • From formation phase [170] • Participatory to an extent; a special group of highly motivated participants takes leadership [170] • Leadership is required [170] • Continuous throughout the lifetime of the IP [165] • Progress discussions [165] • Dynamic focus [11]	• Critical to the functioning of the platform [166] • "Roadmap" is created- what they will do [106], [170] • Resource procurement [106] • Aids alignment [161] • Measurable indicators are established [182]
Championing	• Preliminary analyses of stakeholders is performed to identify potential champions [172] • Multiple participants who take initiative in different ways and functions [178] • Participants operate autonomously [163] • Multiple participants voluntarily step up and lead in their spheres of operation/sectors [163], [179] • Champions leverage their roles in their spheres of operation [161], [172] • Participants identify for themselves what actions they can champion [142] • Motivated by: a desire to solve community problems; a need to change existing situations [142], [162], scarcity [142], personal habits [142], ego [142], learning and personal development [142], [162], develop and maintain relationships across levels [162] • Active in IP's visioning and planning [170] • Participants coordinate platform activities among themselves [171] • Championing may be an appointed role- formal leadership [161], [165] • Informal leadership may be possible- un-appointed role [161] • Types: Technology champion advocates the adoption of a technology [165](Klerkx et al. 2013), Power champion mobilises support of the mobilisation by exerting social and political effort (often limited involvement), Process champion organizes and facilitates IP activities [165](Klerkx et al. 2013), network champion links relevant stakeholders across levels [165](Klerkx et al. 2013) • Champions often leverage their personal reputations [161]	• (strategic representation…) Aids the identification and linkage of appropriate stakeholder types [178] • Resource procurement [172] • Information acquisition and sharing [172] • Leadership activities increases the interest of other stakeholders to participate [179] • Biases the flow of information within and across IP boundaries [179] • Shared learning; sharing of knowledge [169], [179] • Championing capacity influences the ability of the IP to connect at different levels etc. [165] • Champions are important to innovation implementation [161] • Reduces demand for external knowledge and resources [162] • Collaborative atmosphere [169]

PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
Shared learning	• Members of the IP decide what to learn [172] • Communication is required; importance of informal communication [141], [162], [170] • Members of the IP decide how to learn [172] • Members of the IP decide with whom to learn [172] • Members of the IP decide how to share their findings/results [172] • Sharing of ideas; ideas from community members, leaders, organizations [142], [169] • Sharing of experiences [20], [142], [170] • Individual learning [142] • Group learning [142] • Organizational learning [142] • Facilitation required; facilitation of interactions and integration; facilitation of learning and sharing process [142], [165] • Sharing of information [139], [162], [171], [179] • Sharing knowledge [139], [169]–[171] • Stakeholder analysis reveals potential contribution [179] • Sharing of skills [139] • Safe and non-competitive learning environment; constructive environment [106] • Document processes [20] • Analyse results [20] • Publish results [20] • Disseminate results [20] ***Activities that promote SL:*** • M&E in a participatory fashion [140] • Feedback/communicate results [106], [170] • Experimentation [179]	• Ideas are developed into actions with guidance from experts [142] • Empowerment of communities and platform members; socioeconomic development [142], [171] • Biases flow of information within and across IP boundaries [179] • Development of improved solutions [11], [170] • Autonomous coordination of platform activities [171] • Improved coordination and joint planning among IP members [171] • Transparency is exercised • Platform is trusted by external stakeholders [106] • Respect and appreciation for the capacity and role of the different platform participants is developed [185] • Develop new ideas [169] • Better informed decisions [11] • Reduce uncertainties [11] • Inform policy development [180]
Transparency	• Notable in communications [170] • Communication with outsiders [173] • Information flow across IP borders [173] • Experiences, insights gained, results of experiments, survey outcomes, consequences of implementation, are reported effectively [106], [139], [163], [165], [170], [172] • Inform non-traditional stakeholders of their importance and potential to the sector [172] • Roles and responsibility of each platform participant (why they are really here) is known by all participants [166] • Participatory M&E processes [139], [142] • Participatory feedback and reporting [139], [142], [170] • Reflection meetings [165] • Frustrations and aspirations, self-interests, are communicated [139]Personal transparency • Methods for dealing with disagreements and conflicts [139] • Clear planning and visioning [175]	• Participatory improvement of platform activities [142], [170] • Influences the functioning of the platform [170] • Trust building [161], [170] • Increase the number of ideas [170] • Raise awareness of dealings and develop capacity due to successful dealings [165] • Minimise conflicts of interest [139] • Builds capacity and access to resources [106]
Action	• Planning and visioning is focused and put into action [161], [170] • Quickly start doing something, trying things out, acting [106] • Tangible action in the field [170]	• Sustains the functioning of the platform [166], [170]

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PoE Theme	Mechanisms for engagement	Purpose and benefits to the IP
	• Action might include: pilot activities (quick and dirty?) [170]; experiments [141] • Action should start where conditions are most conducive [170], e.g. where stakeholders are most willing to cooperate • Continuous feedback of activities and formulating next steps [165] • Strategic planning is imperative in many spheres [165]; timing must be appropriate [165]; involvement strategy [165] • Roles of participants must be quickly established [165] • Benefits of participation must be quickly apparent [165] • Matching of participants' focus and capacity to platform orientation and needs [165] • Task and activities are identified by the participants [11], [139], [162] • Activities are driven by the needs of the communities being targeted [11], [162] • Actions are reformulated where necessary after participatory M&E and feedback [106], [139] • Alignment is necessary [139] • Trade-off analysis should precede actions (gains in one area often lead to losses in another) [139] • Research partners with implementation (not simply learning on paper, learning through doing) [106] • Simulating activities has replaced experimentation in some instances [141] • Action must not be limited to shared learning activities, but furthered to tangible economic benefits [168] • Lobbying for change [22]	• Gives the platform something to show for all their efforts; activities are better understood when they are seen [106]; success of field activities are visible [161], [165] • Improved access to resources and capacity [161], [165] • Most relevant and motivated participants are targeted for the activities [165] • Some authors have mentioned that simulating changes is better than implementing the changes in practice first [141] • Action leads to wider dissemination of innovations and knowledge and gained experiences [161], [168] • Action leads to reproduction and new institutions, making change possible [169]
Gender dynamics	• Analyse gender • Include women's voices • Small group discussions, games, participatory video • Women representatives • Facilitation • Manage power dynamics	• Understand gender dynamics within the community • Understanding cultural norms, e.g. women and men's work, domestic duties, social status, access and control over resources • Interests of women are represented • Women engage with other platform participants

Appendix E: PoE considerations relevant to the SWAP network

New considerations are marked with an asterisk (*)

Facilitation	
• Management skills	• Participant identification
• Network development	

Communication	
• Continuity	• Media type
• Interpersonal communication	• Visibility*

Trust building	
• Accepted social behaviour	benefits
• Capacity development	• Platform values*
• Existing relationships	• Stakeholder engagement
• Feedback on platform activities	• Trustworthiness
• Legitimacy*	• Visibility*
• Links between actions and	

Managing power dynamics
• Power asymmetries

Monitoring of platform activities	
• Activity monitoring	• Process monitoring
• Baseline study*	• Qualitative data*
• Continuity	• Quantitative data*
• Indicators	• Techniques
• Participation	• Training*
• Participation monitoring*	

Evaluation of platform activities	
• Economic impact*	• Health impact*
• Effectiveness*	• Monitored indicators

Shared learning	
• Communication	• Learning environment
• Experience sharing	• Organisational learning
• Feedback	• Participation
• Group learning	• Target group
• Individual learning	
• Information sharing	
• Knowledge sharing	

Transparency	
• Feedback	• Reporting
• Monitoring and evaluation	

Championing	
• Autonomy	• Self-organisation of activities
• Participant motivation	• Sphere of operation
• Self-identification of actions	

Strategic representation

- Community stakeholders
- Dynamic representation
- Individual participant
- Interested stakeholders
- Participant identification*
- Participant motivation
- Stakeholder engagement

Participation

- Alignment
- Defined roles
- Early involvement*
- Frequent involvement*
- Incentives

Alignment

- Collaboration*
- Communication
- Coordination
- Focus selection
- Formal agreements*
- Government strategy*
- Planning
- Resistance to change*

Capacity development: Participants

- Business management*
- Communication
- Community*
- Continuity
- Change lobbying
- Economic empowerment*
- Economic self-sustainability*
- Existing capacity
- Existing institutions
- Existing knowledge
- Financial management *
- Intentionality
- Knowledge gaps
- Knowledge transfer/training
- Market access techniques
- Mentoring
- Participation
- Reporting*
- Resource accessibility*
- Sector-related activities
- Shared learning
- Social empowerment*
- Technology transfer

Visioning and planning

- Focus adjustment
- Focus selection
- Formal proposals
- Future steps
- Goals and objectives
- New opportunities*
- Participation
- Strategy*

Action

- Activities
- Benefits
- Change lobbying
- Community
- Demand driven
- Feasibility study*
- Feedback
- Functions
- Learn by doing
- Piloting*
- Roles
- Sustainability*
- Tangibility
- Task identification
- Visioning and planning

Feedback of platform activities

- Accountability
- Communication
- Continuity
- Economic impact*
- Field workers*
- Health impact*
- Improvement*
- Internal challenges*
- New insight
- Participation
- Progress tracking
- Reporting

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Managing gender dynamics	
• Participation	• Social empowerment*
• Reduced stigma and discrimination*	• Strategic representation

Resource mobilisation	
• Acquisition	• Participation
• Allocation	• Funded research*
• Availability	• Resource accessibility*
• Cost sharing*	• Resource management
• Expenditure*	• Resource-poor participants
• Funder demands	• Resource sharing*
• Funding proposals*	• Scale-up*
• Diverse revenue streams*	• Sustainability*
• Information sharing	• Visibility*
• Marketing	

Capacity development: Platform	
• Coordination	• Diverse sector knowledge
• Cross-representation	• Shared learning
• Decentralised activities*	• Strategic representation
• Horizontal linkage	• Sustainability*
• Information sharing	• Technology adoption*
• Institutional memory	• Vertical linkage
• Local government*	

Appendix F: Discussion guideline for preliminary evaluation

All information which may reveal the identity of the interviewee and their organisation has been removed to meet the required standards of ethical research.

Discussion guideline

Interviewer comments

- How I came across the initiative
- Why I believe it to be relevant to inform the research

Introducing questions

1. Please tell me about the organisation's initiative; where and how did it all start?; How is the initiative performing now?; What are some of the key successes the initiative has enjoyed?
2. Where does this initiative fit in towards achieving the organisation's objectives?
3. Who would you describe as the intended beneficiaries of the initiative? How are they seeing the benefits?
4. Was there a process to identifying the partner organisations and other stakeholders involved in the initiative? Please elaborate.
5. Who would you list as the important stakeholders (stakeholder groups) of the initiative? How were they linked to the initiative?

Stakeholder engagement and the concepts

I have identified some themes around stakeholder engagement in multi-stakeholder partnerships looking to promote the inclusion and development of the intended beneficiaries (or commonly marginalised stakeholders). I want to focus on these now.

6. When considering stakeholder engagement in initiatives for inclusive development; is it an important consideration? Please elaborate.

The following questions can be used to guide the conversation around the identified themes:

7. What value does X[8] bring to the initiative? What is its influence on the success of the initiative?
8. Have you experienced situations where a lack of X has influenced the functioning of the initiative? What were the consequences on the engagement of stakeholders?
9. Have you experienced situations where the presence of X has influenced the functioning of the initiative? What were the consequences on the engagement of stakeholders?
10. What is the role of X in engaging with stakeholders (specifically the beneficiaries or marginalised)?
11. Do you see the presence of X in the initiative? Is it something you would perceive as important?
12. Please mention some ways that X may be implemented/realised.
13. Can you attribute a specific occurrence to a lack of X?

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[8] X denotes where a PoE theme may be inserted to complete a question.

14. Who is responsible for the realisation of *X* in the initiative? What are important considerations for *X*? What does it look like in practice?

15. What is the influence of *X* on the successful inclusion of the intended beneficiaries?

16. One of the rewards of effective inclusion of the beneficiaries which emerged is that of *X*. Is this something you have noticed in your initiative? How did it come about? Where did you see it? Why might that be the case?

17. Are there any of these themes that you would regard as important, but that are often overlooked?

18. I may have overlooked some important themes too. Are there any themes that you would consider as important, but which I have not mentioned?

Closing questions

19. What would you say is the influence of initiatives which can successfully include and develop people's capacities on the challenges which South Africa faces, especially in healthcare? And how does stakeholder engagement fit into this?

- Closing of discussion and thanks
- Request connections which may help research

Appendix G: Discussion guideline for semi-structured interviews

All information which may reveal the identity of the interviewee and their organisation has been removed to meet the required standards of ethical research.

Discussion guideline

Introduction and background
- Obtain institutional permission
- Introduce yourself
- Present background to the research study (Power point slides)

Permission and consent to participate
- Discuss ethical consent form
- Interviewee signs ethical consent form

Interview discussion
Establish the "what" and "who" of stakeholder engagement:
1. Who do you target? (Who benefits? Who are you working for?)
2. Who are the people or organisations that you work with? (or types of organisations)
3. Who are your partners? (or types of partners)
4. Do you work with any government departments? (national or provincial?)

Establish the need for a framework:
5. Is there a process that you use to identify and connect with these role players?
6. How important is it for you to establish good relationships with these role players?
7. How much effort does it take you to maintain these good relationships?
8. Are there existing frameworks or guidelines which may assist you to manage these relationships available?
   a. Do you use them?
   b. Would you use such a framework?

Evaluate the preliminary framework:
9. To manage these relationships with your stakeholders, what do you focus on?
10. How do you go about it?
11. Given the summarised framework (PoE only), are there any additional comments or insights that you have after seeing the summarised framework?

Conclusion and thanks:
12. Do you have any questions regarding the research and what was discussed?
13. Would you be willing to do a follow-up survey on the adjusted framework?

Thank you for your time.

Note: The summarised preliminary stakeholder engagement framework is available on the next page.
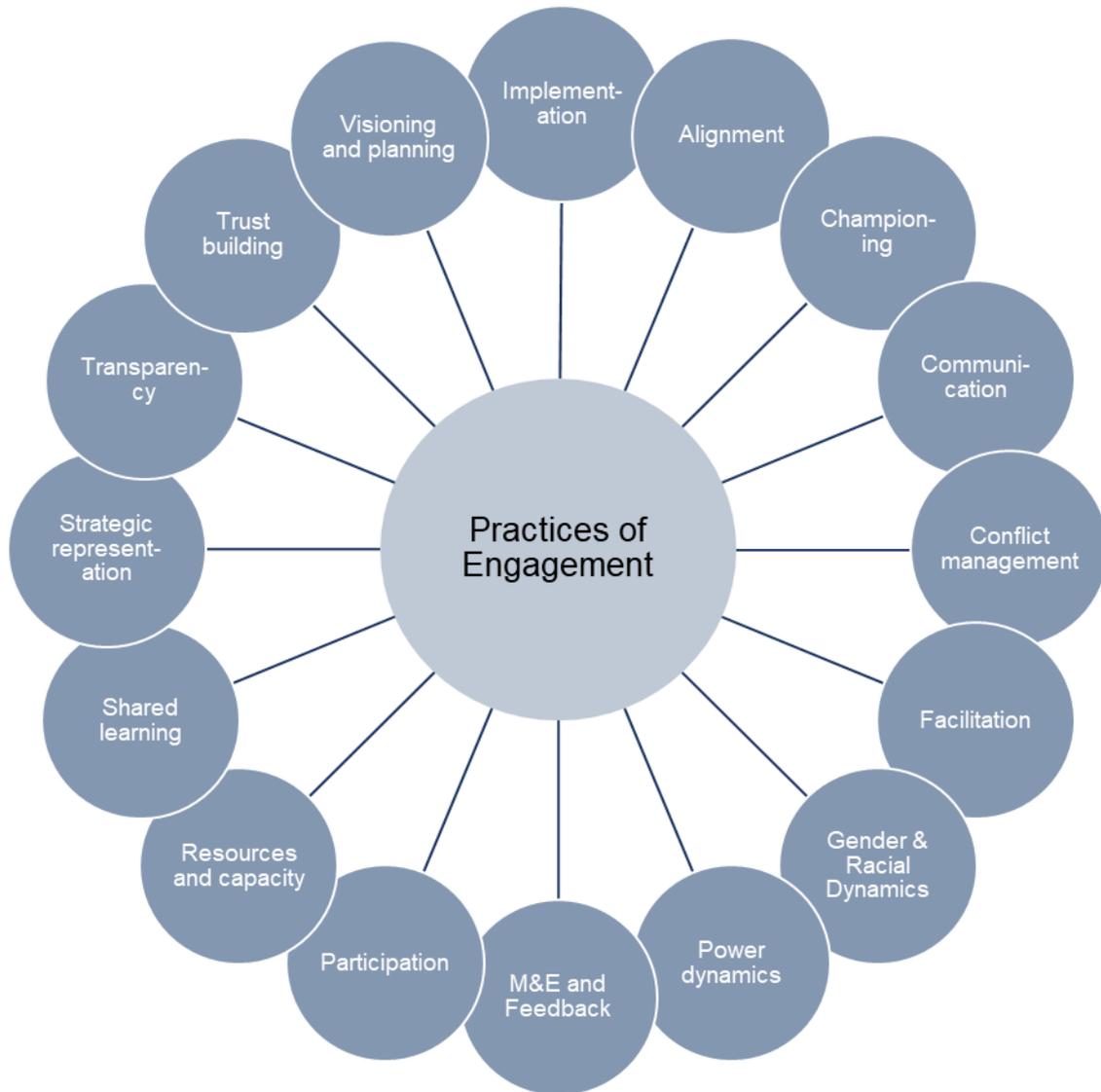
Figure 55: Summarised framework used for interviews

Appendix H: Excel spreadsheet for framework evaluation

H.1. Excerpt of preliminary framework with item identifiers

	ID
Implementation	P1
Framework item	
IP activities raise the awareness of challenges faced by the beneficiaries and addressed by the IP and attract interested stakeholders as potential participants in the IP	C1
IP activities encourage a learn-by-doing approach	C2
IP activities are not limited to learning experiences; real socioeconomic change is being realised	C3
IP activities display tangible outputs to promote the development of trust in the IP and among stakeholders	C4
IP activities are executed according to the visioning and planning activities; activities show the effectiveness of the visioning and planning activities	C5

	ID
Alignment	P2
Framework item	
IP activities progress to meet the needs of the beneficiaries; certain activities target specific needs	C6
Clear links between IP participant roles and their capabilities; participant capabilities are appropriate for their roles	C7
IP participants opt to work together, continuously discounting their own self-interests	C8
Power plays are managed and minimised to protect alignment	C9
Clear links between benefits and the interests and needs of IP participants to promote involvement; mutual benefits are established	C10
Knowledge and information is shared between IP participants	C11
Displays of trustworthiness among IP participants are apparent; breakdown of distrust and strengthening of participant relationships	C12
IP focus is directed by the needs and interests of IP participants and the needs of the beneficiaries	C13
:	:
:	:
:	:

H.2. Excerpt of interview transcription and evaluating the framework items

Confirmable		Modified		
ID	**Summarised transcription**	**ID**	**Summarised transcription**	**Eval-ID**
C1	Another organisation already active in the community wants to partner	P1	'Implementation' is recommended over 'action'	M1
C10	Important to align with something [the partners] need	P14	'Visibility' recommended as an attribute of 'transparency'	M2
C103	Introduced to a leader in the community			
C112	The organisation was willing to share insights	**Gaps and Additions**		
C113	Linking stakeholders who don't know with those who do know		**Summarised transcription**	**Eval-ID**
C114	Whatever [the community leader] says is what goes in that community		Knowing the issues of the community as strategic points for intervention is key, use of geo-mapping of communities, photographs	A1
C116	Transparency is also the community being honest about their feelings and expectations		Help local community members understand what issues actually exist in their community	A2
C117	The budget and what it allows for is explained to the community		Incentives are used to maintain the interest of local community stakeholders and retain their participation	A3
C128	Activities target issues with the greatest impact potential		Ownership of the initiatives by the local community members is crucial	A4
C13	Stakeholder define their own goals, or they align with existing goals		Important to understand the local cultural norms	A7
C14	Championing improves dissemination significantly		Find the local champions of a community and get them on board first	A8
C15	Champions tell other people to use [the intervention] or do [the intervention]		Miscommunication of expectations causes tension	A9
C29	How to communicate so the community understands is a challenge that impedes transparency- there are 'levels' of communication		A constant presence is needed to touch base with stakeholders	A10
C37	Local champions have tended to over-expect what can be acieved		Facilitator must be on the ground	A11
C4	Must at first prove the benefits which are promised; critical for scale-up		Stakeholders are wrongly perceived to know everyone and have lots of money based on their race	A12