EVALUATING PERCEPTIONS OF CO-MANAGEMENT ON SMALL-SCALE FISHERIES IN THE WILD COAST OF SOUTH AFRICA

Submitted in partial fulfilment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

FACULTY OF COMMERCE

RHODES UNIVERSITY

by

Vusi Gedla Mthombeni

01 DECEMBER 2023

Abstract

Shared perceptions by stakeholders can improve the understanding of managing natural resources. This study aimed to evaluate stakeholders' perceptions towards co-management of small-scale fisheries to improve the management of these resources. Eleven participants were purposively sampled from government agencies, non-profit organisations and community representatives from Coffee Bay, Port St Johns, Lusikisiki and Xolobeni on the Wild Coast of South Africa. Predetermined themes derived from the literature were used to develop the interview schedule. Semi-structured, one-on-one interviews were conducted to probe the participants' understanding of the term "co-management" and its objectives, benefits, processes, and outcomes. Data were recorded and transcribed into text, and thematic analysis was used to detect themes that emerged from the data. The results indicated that all participants perceived co-management of Small-scale fisheries as beneficial. Securing access rights through fishing permits was a benefit that was exclusive to the fishers, whereas self-regulation, sharing of information, and mobilising and utilising the strengths of different stakeholders were the benefits noted by all stakeholder participants. Government representatives viewed the involvement of government in the co-management structures of SSF as necessary, whereas the other representatives' views were that government should be excluded. Incorporating the traditional and government regulatory systems was recommended to manage fisheries resources effectively. The benefits of co-management exceeded costs, suggesting that co-management was viable for the Wild Coast.

KEYWORDS: Co-management; Small-scale fisheries; Ecosystem Approach to Fisheries; Stakeholder Theory; Wild Coast

Declaration

I declare that the Dissertation/Thesis entitled, 'Evaluating perceptions of co-management of small-scale fisheries in the Wild Coast of South Africa', which I hereby submit for the degree, Master of Business Administration at Rhodes University, is my own work. I also declare that this thesis/dissertation has not previously been submitted by me for a degree at this or any other tertiary institution and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Vusi Mthombeni

_____

Name Surname (*signed*)

Acknowledgement

I wish to thank my supervisor, Ms Leticia Greyling for the way in which she empowered me to do and complete my research. The staff members of Rhodes Business School also played an important role in shaping my understanding of research. The institutions that gave me gatekeeper permission to interview their staff members are acknowledged. The participants for this research are thanked for dedicating their time to share their insight and knowledge.

I wish to thank the management of my employer, Department of Economic Development, Environmental Affairs and Tourism for giving me time to undertake this research for my study. A support from friends, family and MBA class of 2022 kept me motivated all the time. The family of Jezi in Makhanda offered me an accommodation during the course of MBA.

Table of Contents

Glossary

EAF: Ecosystem Approach to Fisheries

EBFM: Ecosystem-Based Fisheries Management

ENRM: Environmental Natural Resource Management

FAO: Food and Agriculture Organisation of the United Nations

DAFF: Department of Agriculture, Forestry and Fisheries

DFFE: Department of Forestry, Fisheries and Environment

DEDEAT: Department of Economic Development, Environmental Affairs and Tourism

MPA: Marine Protected Area

NPO: Non-Profit Organisation

SDG: Sustainable Development Goal

SSFs: Small-scale fisheries

SWC: Sustaining Wild Coast

WWF: World Wide Fund

WSU: Walter Sisulu University

UN: United Nations

List of Figures

List of Table

List of Appendices

CHAPTER 1
Introduction and Project Overview

1.1 Introduction and background

The concept of "tragedy of the commons" (Hardin, 1968), which argues that a resource that starts as abundant and freely available to all will decrease with time unless its use is regulated, has been a subject of discussion for some decades within the fisheries sector (Ostrom, 1990; Pomeroy and Williams, 1994). Attempts to regulate fisheries have been made that focused on managing a single fishery species of commercial importance (Berkes, 2003). Over the years, that focus shifted to holistic management to consider the entire ecosystem in recognition of the complexity of fisheries (Cochrane, Augustyn, Cockcroft, David, Griffiths, Groeneveld, Lipińnski, Smale, Smith and Tarr, 2004). That shift was accompanied by the coining and adoption of the concept of the Ecosystem Approach to Fisheries (EAF), which the Food and Agriculture Organisation of the United Nations (FAO) defined as "an Ecosystem Approach to Fisheries which strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries" FAO (2003: 14). From this definition, humans have become an integral part of ecosystems.

In EAF, the fish stocks themselves do not pose a challenge but the fitting of human dimension into fisheries, which entails managing their actions to ensure the sustainability of the resources (Ostrom, 2009). This challenge is prevalent in small-scale fisheries (SSF) since they present a complex socio-ecological system within the fisheries sector (McCay, Brandt and Creed, 2011; Franco-Meléndez, Tam, van Putten and Cubillos, 2021). Socio-ecological system refers to the human benefits that are derived from natural ecosystems, such as food and livelihoods (Pellowe and Leslie, 2020). SSF can be defined as the exploitation of wild capture fisheries for subsistence or recreational purposes using low-gear technology (Basurto, Virdin, Smith and Juskus, 2017). SSFs are characterised by individual ownership with low-gear technology, low catch and reduced environmental impact, which makes them distinct from high-gear technology and high catch, which are company-owned with an increased environmental impact

of large-scale fisheries (Smith and Basurto, 2019). About 50% of the fish consumed globally comes from SSF (FAO, 2015; Rousseau, Watson, Blanchard and Fulton, 2019) and also provides multiple services, such as traditional and recreational support, livelihoods and more than 90% of employment opportunities within the fisheries sector (Franco-Meléndez et al., 2021). The bulk of the fish consumed by residents of developing countries comes from the SSF, making SSF one of the important resources contributing to meeting the nutritional requirements of the citizens (Byrd, Pincus, Pasqualino, Muzofa and Cole, 2021).

1.2 The Management of SSF – A Global Overview

Despite the importance of SSF highlighted above, these fisheries suffer neglect from the government as a result of multi-species and multi-cultural management interventions that should be considered for their success (Castillo and Fujiwara, 2021). The government support is skewed towards the large-scale fisheries because of their contributions to the globalisation for the development of the export market of commercially valued fisheries species (Guyot and Dellier, 2009; Castillo and Fujiwara, 2021) whereas, SSF are subject to conflict by external regulations from the central government (Kosamu, 2015). The government regulations on fisheries favour economic benefits and not social-environment benefits (Schuhbauer and Sumaila, 2016). Integrating the local market into the global market and excluding the fishing communities from participating in the new opportunities presented by globalisation is a common phenomenon in the SSF (Nielsen, Degnbol, Viswanathan, Ahmed, Hara and Abdullah, 2004).

1.2.1 Top-down Management Approach

The government's top-down management system has been ineffective in managing SSF, as its regulations are generally not supported by the fishing communities (Isaacs and Witbooi, 2019). This is largely due to the government's neglect of the social and political contexts of the local communities (Cinner, MacNeil, Basurto and Gelcich, 2013). For example, the fishing quota system, Individual Transferable Quota (ITQ) of allocating fishing rights introduced in South Africa, resulted in the communities' poaching of marine resources to maintain their livelihoods (Isaacs and Witbooi, 2019). The government regulations in other countries have weakened the effective traditional SSF management systems enshrined in the nations' rituals, with strong group cohesion (Khan, Mikkola and Brummett, 2004). The government's top-down management system has resulted in the marginalisation of the SSF sector (Nielsen et al., 2004), and such marginalisation is a global phenomenon (FAO, 2005). The marginalisation of SSF is

the source of the problems causing conflicts, which result in the unequal distribution of benefits and the overexploitation of fisheries resources (Brewer and Moon, 2015). The overexploitation of resources has increased illegal, unreported and unregulated (IUU) fishing (FAO, 1995; Samy-Kamal, 2022; Temple, Skerritt, Howarth, Pearce and Mangi, 2022) and can negatively impact biodiversity and ecosystem services that support livelihoods (Russi, Brink, Farmer, Badura, Coates, Forster, Kumar and Davidson, 2012). These complex challenges facing SSF have long been documented to be caused by social inequality (Pomeroy and Williams, 1994).

1.2.2 Participatory Management Approach

In response to the SSF challenges, there is a shift from the government's top-down management system to a community-based, participatory management system (Samy-Kamal, 2022). Co-management is a widely recognised governance system for the SSF and is building on decentralising decision-making and increasing participation to achieve equitable governance (Pomeroy, 2022). It has emerged as a promising participatory mode of governance to address the over-exploitation of SSF (Gutiérrez, Ray, and Omar, 2011; Gianelli, Martínez and Defeo, 2015). With no universal definition, co-management is defined as a partnership arrangement whereby the community of the local resource users, government and other stakeholders share the authority and responsibility for the management of resources (Pomeroy and Ahmed, 2006). Co-management is recognised and recommended by the FAO document entitled "Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of National Food Security and Poverty Eradication" (FAO, 2015) and can be effective in:

- Achieving the FAO goals of fisheries management guidelines by bringing change in institutional policy and regulatory framework (Westlund and Zelasney, 2019);
- Helping advance gender equity and human rights (Pittman et al., 2019);
- Strengthening tenure rights and decision-making processes, thereby achieving increased and more equitably shared economic benefits (Oldekop, Holmes, Harris and Evans, 2016);
- Providing a strong institutional structure as a sustainable, equitable and efficient fisheries management strategy (Pomeroy and Ahmed, 2006); and
- Achieving the goals of the EAF as a governance model (Jentoft, 2003; Gianelli, Martínez and Defeo, 2015).

Smallhorn-West, Cohen, Phillips, Jupiter, Govan, and Pressey (2022) noted that co-management can address Sustainable Development Goals (SDGs). For example, SDG 14 on the sustainable use of the ocean, SDG 1 on poverty eradication, SDG 2 on food security, SDG 5 on gender equity, SDG 8 on decent work and economic growth, and SDG 17 on partnership for sustainable development. Furthermore, Smallhorn-West et al. (2022) unpacked the link between the co-management of SSF and SDGs by identifying 11 targets against five SDGs that can be achieved. Since South Africa is a signatory to the SDGs (Haywood, Funke, Audouin, Musvoto and Nahman, 2019) and other international treaties that support the conservation of natural resources, studying SSF co-management can yield relevant information for this country.

1.3 The Management of SSF – South African Context

In South Africa, the co-management of SSF began at the dawn of democracy in 1994 (Hauck and Sowman, 2001), whereas consideration to adopt EAF began in 2002 (Shannon, Moloney, Cury, van der Lingen, Cury, Fréon and Cochrane, 2006). However, neither EAF nor co-management appears to have been a success, as evidenced by continued community outcry, which, in 2007, resulted in the Equity Court of the Republic of South Africa issuing an order to force the government to recognise SSF (Sowman, Sunde, Smith and Wicomb, 2011). Subsequently, a Small-scale Fisheries Policy (SSFP) was gazetted in 2012, which envisioned co-management as a mode to enhance a shared responsibility between the government and fishing communities on the exploitation and regulation of SSF (DAFF, 2012).

Recent findings by Cochrane (2021), however, have revealed that SSFs have continued to be as equally marginalised under democracy within EAF, co-management, and SSF policy as they were during the previous eras. The conflict between the state and community is continuing and prevails on the Wild Coast. Conflict in this context of natural resources can be broadly defined as "differences in interests, goals or perceptions" (Coser, 1957, as cited by Soliku and Schraml, 2020: 848). For example, communities were found fishing without a government permit at Dwesa-Cwebe Nature Reserve (on the Wild Coast of South Africa), and the court found them not guilty based on customary law (Ampofo-Anti, 2018). The High Court recently found the government's decision to support oil and gas exploration in the Wild Coast untoward and ruled in favour of SSF (Masifundise, 2022). In these cases, co-management could have been helpful, though its role in resolving conflict in SSF is still a subject of research (d'Armengol, Castillo, Ruiz-Mallén and Corbera, 2018).

1.3.1 Why the Wild Coast?

The Wild Coast falls under the former Republic of Transkei and was incorporated into the Republic of South Africa (Fig. 1) after April 1994, following the dawn of democracy (Mann, McDonald, Sauer and Hecht, 2003). The amalgamation of the fisheries regulations of these two republics happened in 1997 (Government Gazette No. 6029 of 1997, as cited by Mann et al., 2003). Before the amalgamation, South Africa had undertaken an evaluation of the management of fisheries regulations along its coastline, which excluded the Wild Coast (Mann et al., 2003). A similar evaluation was conducted for the Wild Coast soon after the amalgamation of the two republics (Mann et al., 2003). Given the background history stated above, the Wild Coast has conveniently been studied as a distinct region from South Africa.

De Villiers and Costello (2006) considered South Africa's Wild Coast to be the world's most spectacular coastline, based on its rugged scenery with diverse ecosystems with endemic species. Within South Africa, the Wild Coast is the third biodiversity hotspot of endemism after the Cape Floristic Region and Succulent Karoo (Bennie, 2011). There is already an ongoing debate on the uniqueness of the Wild Coast of South Africa that warrants studies to document fishery species (Jooste, Oliver, Emami-Khoyi and Teske, 2018). A possibility exists that this coastline can be assigned a distinct marine bioregion in the country based on the distinct fishery species assemblage and genetic composition (Jooste et al., 2018). The Wild Coast may warrant distinct management to other coastlines of South Africa, so any study undertaken for this coastline is therefore important.

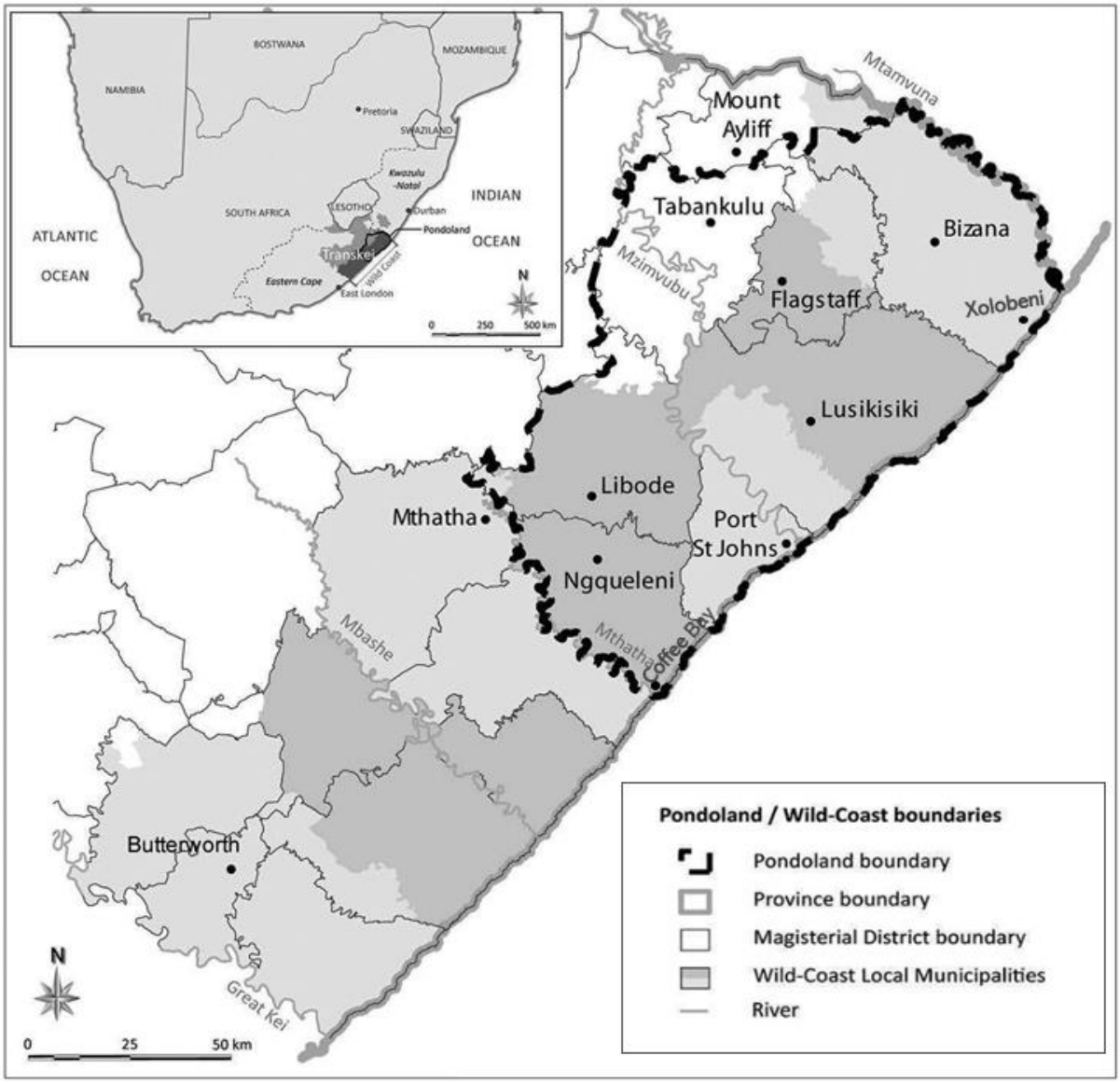

Figure 1.1: The location of the Wild Coast in South Africa (Adapted from Cheteni and Umejesi, 2023).

1.4 Aims and Objectives

The aim and objectives of this research were formulated on the basis that co-management can play a role between the state and fisheries resource users (d'Armengol et al., 2018). This study aimed to evaluate stakeholders' perceptions of SSF co-management on the Wild Coast to make recommendations to improve the management of fisheries resources. The objectives of the study were as follows:

1. To explore fishers' and other stakeholders' perceptions of co-management for use in SSF on the Wild Coast.
2. To identify factors that influence the perceptions of fishers and other stakeholders on co-management in SSF on the Wild Coast.

3. To make recommendations regarding the role co-management could play in the management of SSF on the Wild Coast.

The challenges facing the management of SSF is a global phenomenon in which the co-management approach has yielded different outcomes. This study was considered important to gain the stakeholders' perspectives on co-management as an alternative management approach for SSF on the Wild Coast.

CHAPTER 2
Review of Literature

2.1 Introduction

In this chapter, a review of the literature on the management of SSF was undertaken. The review considered the aim of the study as outlined in Chapter 1 of this dissertation, which targeted evaluating the stakeholders' perceptions of the co-management of SSF. The relevant literature about the governance of SSF was discussed, considering the widely noticeable shifting trend from the conventional top-down management to a decentralised, multi-stakeholder management approach of fisheries resources (Herrón, Castellanos-Galindo, Stäbler, Díaz and Wolff, 2019). Full attention was paid to reviewing fisheries co-management, covering theoretical aspects and challenges facing the implementation of SSF's co-management arrangements. Aspects of co-management reviewed include co-management as institutional linkage, participation, and governance.

2.2 Perception of Resource Management

The management of SSF is influenced by the school of thought under the tragedy of the commons, which posits that in the absence of the regulation for the exploitation of the environmental common resources, the resources will be ruined by self-interested individuals and become unavailable for others in the future (Hardin, 1968; Berkes et al., 2001). The commons refer to the variety of resources from the natural, social, cultural and intellectual world that contribute to the survival of human beings (Nonini, 2006). The natural resources may include land, forest, game, fisheries and wild plant catchment areas, and have received more study attention under the theory of the tragedy of the commons than any of the other variety of common resources (Thomas, Ostrom and Stern, 2003). As noted by Ostrom, Berger, Field, Norgaard and Policansky (1999), the tragedy of the commons is inevitable; humans have, for thousands of years, been able to self-organise to manage their natural common pool resources for sustainability. SSF is the oldest human livelihood in the fisheries sector, which is found all over the world and has contributed immensely to food production (Palsson, 1989). In cases whereby the average rate of resources' "withdrawal" does not exceed the average rate of "replenishment", the natural common resources have failed to get to the tragedy (Ostrom, 1990).

Ostrom (1990) studied the theory of the 'tragedy of the commons' (Hardin, 1968) further and noted that this theory presented a management issue involving non-formal institutions from the communities and formal institutions. According to Ostrom (1990), eight conditions are necessary when managing the environmental, common resources: (i) spatial boundaries and clear identification of who should and should not manage the resources; (ii) rules must be relevant to the local conditions; (iii) the local people must agree with the rules imposed to them; (iv) effective monitoring must be in place; (v) graduated sanctions must be in place; (vi) conflict resolution mechanism that is easy to apply must be in place; (vii) The right to organise at the lower level of the state and local community without interference by the high level of the state should be recognised; and (viii) there must exist multiple level enterprises with the local community. Ostrom's (1990) analysis considered that the resource users should form part of the team drafting rules that regulate the exploitation of common resources. Wall (2014), as cited by Fratsea and Papadopoulos (2022), noted that these rules should be based mainly on socio-cultural conditions rather than only on economic rationality. Socio-cultural conditions can be achieved by including resource users from the local communities in SSF's decision-making (Fratsea and Papadopoulos, 2022).

2.3 Management of SSF

Fisheries management has been defined by Cochrane (2002: 3) as "the integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities to ensure the continued productivity of the resources and the accomplishment of other fisheries objectives". From this definition, it can be deduced that successful fisheries management can optimise the exploitation of fisheries resources for human benefits such as livelihood and recreation, which can be attained through regulating fishing.

2.3.1 Centralised Government Management Approach

The regulation of fisheries has been inherently achieved through the centralised government management approach, which focuses on enhancing the maximum yield of a single target species of commercial importance for large-scale fisheries (Kuperan and Pomeroy, 1998). This management approach, which presents distant, understaffed and underfunded efforts, has failed to manage SSF successfully (Maravelias, Vasilakopoulos and Kalogirou, 2018). Such failure

is attributed to the disrespect and breaking of regulations by communities as a result of these regulations being imposed on them by the central government (Beddington, Lorenzen and Payne, 1997 as cited by Hutton and Pitcher, 1998). Consequently, the central government management approach to managing SSF is considered ineffective (Pomeroy and Pido, 1995). As a result, the multi-stakeholder approach has been considered all over the world as an alternative form of management approach for the SSF (Pomeroy and Berkes, 1997; Berkes, 2009; FAO, 2015).

2.3.2 Multi-stakeholder Management Approach

A participatory, multi-stakeholder management approach is gaining momentum as an alternative form of natural resource management (FAO, 2015). This approach, however, has been welcomed by mixed ideas as some scholars consider it to be more complex, involving stakeholders of different values, views and interests that must be brought together (Hara, 2003), whereas other scholars appreciate the diverse opinions of multi-stakeholder that are incorporated into the management strategy (Jentoft, McCay and Wilson, 1998).

It can be argued that a multi-stakeholder management approach can be relevant for SSF due to their diverse, complex and dynamic nature as they are not founded under formal institutional structures (Ostrom, 1990; FAO, 2020). Informal institutions are founded under values and social norms that can be used to influence the behaviour of fishers, which is contrary to the formal institutions whose rules and regulations are established under government norms and standards (Pellowe and Leslie, 2020; Gómez-Andújar, Gerkey, Conway and Watson, 2022). SSF have no centralised fleet landing sites and selling market due to their inherent informal institutional basis (Ouréns, Melnychuk, Crowder, Gutierrez, Hilborn, Pita and Defeo, 2022), which could explain the poor data recording for the SSF fleets, poor surveillance and bad management (Mahon, McConney and Roy, 2008).

Fisheries resource data are important since they can be used in the assessment of the fish stocks against the management target and employ effective governance (Costello, Ovando, Hilborn, Gaines, Deschenes and Lester, 2012). Purcell and Pomeroy (2015) noted that fisheries resource data are prerequisites for the management approach. Sketchy information on small-scale fishing fleets has also compromised the securing of compliance within the SSF (Dalskov, Glemarec, Kroner, Kindt-Larsen and Nielsen, 2021, as cited by Tassetti, Galdelli, Pulcinella, Mancini and Bolognini, 2022). The challenges of poor data records in SSF can be solved by

integrating the vulnerable and marginalised stakeholders, such as small-scale fishers into the decision-making to increase the opportunities of recording data from the SSF fleets (Karr, Fujita, Carcamo, Epstein, Foley, Fraire-Cervantes, Gongora, Gonzalez-Cuellar, Granados-Dieseldorff, Guirjen, Weaver, Licón-González, Litsinger, Maaz, Mancao, Miller, Ortiz-Rodriguez, Plomozo-Lugo, Rodriguez-Harker, Rodríguez-Van Dyck, Stavrinaky, Villanueva-Aznar, Wade, Whittle and Kritzer, 2017). Such integration can increase compliance, which in turn can improve conservation performance, food production, money generation and livelihood quality (Karr et al., 2017).

Jentoft and Mikalsen (1994), as cited by Hutton and Pitcher (1998), once noted that involving resource users in the decision-making processes can legitimise regulations and enhance adherence to the regulations, thereby improving the efficiency of fisheries management. Gammage and Jarre (2020) also shared the same sentiment as Jentoft and Mikalsen (1994) in that they considered the integration of the vulnerable and marginalised stakeholders into formal decision-making as achievable through capacity building for improvement in the management of SSF resources. Wilson (2003) considered such inclusion as having the potential to increase the accuracy of fishery stocks' information to promote rational decision-making, thereby improving the management of SSF.

Andrew, Béné, Hall, Allison, Heck and Ratner (2007) noted that excluding SSF resource users from participating in decision-making is an institutional marginalisation, and such exclusion can be associated with the lack of institutional support from the state, including insufficient funding and lack of political will. SSFs are overlooked in favour of large-scale fisheries, large-scale aquaculture, reserve conservation areas and other coastal developments such as tourism and the exploration of mineral wealth (Said, Tzanopoulos and MacMillan, 2016). SSF are thus outcompeted by the other sectors for economic activities, thereby threatening their sustainability. Prioritising other developments in jeopardy of SSF can have a negative consequence as, for example, was the case in South Africa when the marine protected area was established, which resulted in an increase in the poaching of fisheries resources (Isaacs, Hara, Dennis, Rouhani, Mannarino, and Jaffer, 2022). The marginalisation of small-scale fishers can be caused by the lack of coordinated effort involving fishers and other stakeholders, which could explain the failure of SSF to attain their economic benefit (Berkes, 2009).

Recognising fisheries resource users as part of the ecosystem within fisheries is supported by Ecosystem-Based Fisheries Management (EBFM) and EAF frameworks (Trochta, Pons, Rudd, Krigbaum, Tanz and Hilborn, 2018). According to the US National Research Council (NRC, 1999), as cited by Lidström and Johnson (2020: 217), EBFM is understood as "an approach that takes major ecosystem components and services – both structural and functional – into account in managing fisheries". EBFM and EAF both share the common trait of valuing the fish habitat, human dimension (through participatory processes) and multispecies of fish to understand the complex processes of the ecosystem (Trochta et al., 2018). According to the holistic ecosystem management approach under EBFM and EAF frameworks, it is understood that fishing does not only impact the target fishery species, but the unintended fisheries species, including other aquatic lives, are also caught, resulting in the disturbance of the physical features of the fish habitats, thereby negatively impacting the entire ecosystem (Townsend, Harvey, deReynier, Davis, Zador, Gaichas, Weijerman, Hazen and Kaplan, 2019). Unintended fishing impacts should, therefore, be incorporated into fisheries management (Townsend et al., 2019).

The implementation of holistic ecosystem management has witnessed some challenges; for example, Gianelli, Martínez and Defeo (2015) the following challenges associated with the EAF: (i) lack of effective mechanisms that involve stakeholders in decision-making; (ii) lack of inter- and intra-institutional coordination, cooperation and communication among the stakeholders; and (iii) lack of coordination in the sharing of responsibilities for managing common pool resources among different stakeholders. Westlund and Zelasney (2019) noted that the challenges highlighted above can be resolved by adopting co-management since it is effective in addressing issues associated with abuse, discrimination and marginalization by bringing change to institutional policy and regulatory framework in SSF.

2.3.3 Co-management

Co-management can be classified under the theory of common property rights (Jentoft, 1989; Kuperan and Pomeroy, 1998). Three kinds of property rights are recognised in this theory: state property, where government agencies are exclusively controlling the resources on behalf of its citizens; communal property, where the communities have the right to exclude others and regulate the resources by themselves; and private property, where an individual or corporate organisation can legally regulate fisheries resources (Ostrom, 1990; Kuperan and Pomeroy, 1998). As a result, the property rights of individuals in the control of fisheries are used to

analyse co-management arrangements. This approach has been effective in controlling common pool resources (Jentoft, 1989; Kuperan and Pomeroy, 1998).

Fisheries are 'common pool resources' that are easily accessible to every human and whose exploitation by one individual decreases the chance of exploitation by another (Pomeroy and Berkes, 1997; Kuperan and Pomeroy, 1998). There is an incentive for individual fishers to catch a fish before someone else catches and this incentive can lead to overexploitation and the breaking of the fisheries' regulations (Hilborn, Orensanz and Parma, 2005). In the absence of control of the fishing incentive, the competing fishers may deplete fish stocks in such a way that they cannot be available in the future (Hannesson, 2004). If fishers are part of decision-making and the regulation of fisheries resources, there will be fewer chances of wanting to overexploit due to ownership. Co-management, as defined in Chapter 1 of this dissertation, is "a partnership arrangement whereby the community of the local resource users, government and other stakeholders share the authority and responsibility for the management of resources" (Pomeroy and Ahmed, 2006). The resource is co-owned by the members of communities under co-management. The definition of co-management highlights the presence of government in the partnership arrangement between government and communities, which sets this management arrangement apart from any other form of management (Sen and Nielsen, 1996).

According to Sen and Nielsen (1996: 406-407), five forms of fisheries co-management arrangements (Fig. 1) can be distinguished based on the roles of resource users and government as follows:

Type A: Instructive: There is only a minimal exchange of information between the government and users. This type of co-management regime is different from centralised management in the sense that the mechanisms exist for dialogue with users, but the process itself tends to be the government informing users on the decisions they plan to make.

Type B: Consultative: Mechanisms exist for governments to consult with users, but all decisions are taken by the government.

Type C: Cooperative: This type of co-management is where the government and users cooperate as equal partners in decision-making. For some authors, this is the definition of co-management (Jentoft, 1989).

Type D: Advisory: Users advise the government of decisions to be taken and the government endorses these decisions.

Type E: Informative: The government has delegated authority to make decisions to user groups who are responsible for informing the government of these decisions."

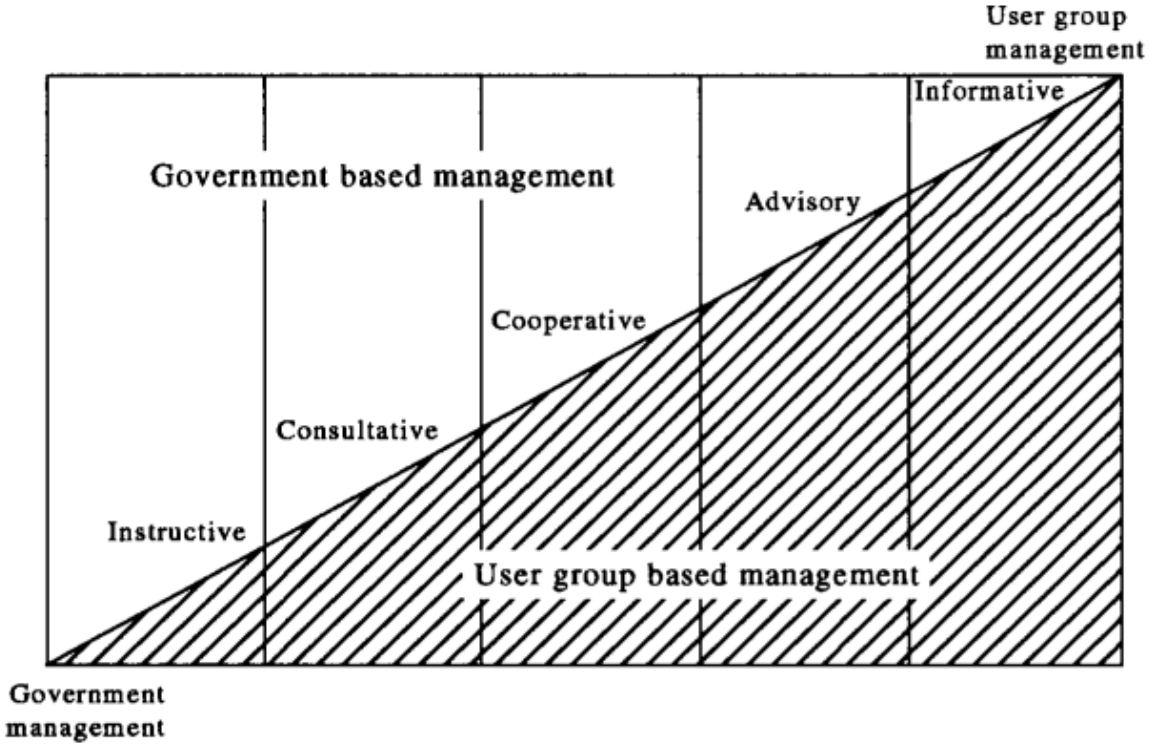

Figure 2.1: Sen and Nielsen's (1996: 407) version of fisheries co-management arrangements as adapted from McCay (1993) and Berkes (1994).

From Figure 1 and the explanation of each of the types of co-management arrangement outlined above, one can deduce that co-management arrangement comprises a wide hierarchy of arrangements which range from the government consulting the fishers for input into decision-making to those in which the fishing communities lead the design, implementation and enforcement of the laws regulating the exploitation of fisheries. The cooperative arrangement is the most desirable form of co-management because it is the only management arrangement that is so close to the definition of co-management as it considers an equal distribution of powers and responsibilities in the partnership between government and resource users. Cooperative arrangement has been interpreted as a "middle course between pure state property and pure communal property regimes" (Abdullah and Pomeroy, 1998: 106).

2.3.4 Co-management in SSF Context

Co-management is perceived as a system where communities and the government work together to improve regulatory processes (Gutiérrez, Ray and Omar, 2011). According to Pomeroy and Berkes (1997), every stakeholder in fisheries co-management seeks more appropriate, efficient, and equitable management which can fulfil one of the following goals: (i) community-based economic and social development; (ii) decentralisation of resource management decision; and (iii) mechanism to reduce conflict using the processes of participatory democracy. Co-management presents a cheaper option to manage natural resources than managing from central government (Alpízar, 2006). Gutiérrez, Hilborn and Defeo (2011) noted that strong leadership, harvest allocation quotas, strong social cohesion, protected areas and self-enforcement are the five most important factors attributing to the success of SSF co-management, whereas APFIC/FAO (2005) had listed four conditions important for successful fisheries co-management as follow:

(i) Enabling policy and legal framework which are supported by government
(ii) Effective institutions and linkages
(iii) Participation by resource users, in addition to other stakeholders
(iv) Incentives for participating individuals.

The involvement of resource users appears to be a common and important consideration in achieving social cohesion and self-enforcement between the analysis of Gutiérrez, Hilborn and Defeo (2011) and APFIC/FAO (2005). It can be argued that the participation of resource users in the management of fisheries is overriding, given that there is already a global problem of overexploitation of SSF resources of Illegal, Unreported and Unregulated (IUU) fishing that is caused by the fishing communities (Selig, Nakayama, Wabnitz, Österblom, Spijkers, Miller, Bebbington, and Sparks, 2022). IUU fishing is a global phenomenon in the fisheries sector caused by fishers who are undermining government and human rights (Selig et al., 2022). Overall, the challenges facing the management of SSF resources require the coordination of all the stakeholders.

Pomeroy and Berkes (1997) noted that the government and resource users constitute co-management, and their roles should be clearly distinguished from the co-management partnership. APFIC/FAO (2005) shared the same idea, too, but considered additional roles from

other stakeholders. These ideas of the stakeholders' roles in fisheries co-management, as perceived by APFIC/FAO (2005), are briefly outlined below.

(a) The Role of the Government

The government's role in the management of SSF is to ensure that there is good governance in place by providing leadership (Pomeroy, Katon and Harkes, 2001). According to APFIC/FAO (2005), the government is able to: (i) develop and amend fisheries policies; (ii) establish agreed objectives for fisheries co-management by facilitating dialogue with the fisheries communities and other stakeholders; (iii) encourage research agencies to conduct research that meets priority needs of stakeholders on co-management; (iv) ensure cross-sectoral integration for fisheries co-management; (v) provide assistance in the empowering of communities for ensuring equitable distribution of the benefits of fisheries co-management (vi) make budget available for fisheries co-management practices.

(b) The Role of the Resource User

The resource users possess knowledge gained through experience and information from the previous generations (Jentoft, McCay and Wilson, 1998; APFIC/FAO, 2005). Incorporating such knowledge into science and using it in the formulation of laws regulating the exploitation of SSF can be useful in the management of these resources (APFIC/FAO, 2005). The resource users must be self-organised to elect their representatives in decision-making bodies at all levels (APFIC/FAO, 2005). They should also take responsibility actions for fisheries co-management.

(c) The Role of Other Partners

International and regional agencies should conduct research and disseminate their information to support the stakeholders of fisheries co-management (APFIC/FAO, 2005). Information on fisheries biologists from various organisations can contribute to the management of fisheries. Civil society organisations and non-governmental organisations can support by building partnerships with the government and other stakeholders to support the local participatory research on co-management issues (APFIC/FAO, 2005).

A further search of the literature revealed that co-management can: (i) bring change in policy institutional and regulatory framework (Westlund and Zelasney, 2019); (ii) help advance gender equity and human rights (Pittman et al., 2019); (iii) strengthen tenure rights and

decision-making processes, thereby achieving increased and more equitably shared economic benefits (Oldekop, Holmes, Harris and Evans, 2016) (iv) be sustainable, equitable and efficient fisheries management strategy that can strengthen institutional structure (Pomeroy and Ahmed, 2006); (v) be a participatory management model that can foster the sustainability of fisheries (Gutiérrez, Ray, and Omar, 2011); (vi) be viewed as a governance model to achieve the goals of the EAF (Jentoft, 2003; Gianelli, Martínez and Defeo, 2015). Below are some of the detailed discussions based on the literature information above.

2.3.4.1 Co-management as a Means for Institutional Linkages

Co-management has gained popularity in the management of SSF due to its capability of creating linkages among various stakeholders from various sectors, including public and private sectors and none formal sectors such as fishing communities (Evans, Cherrett and Pemsl, 2011). According to Marín and Berkes (2010), the co-management process comprises members of society who are involved in the co-management process and those who are not. Those who are excluded may either hinder or weaken the co-management process (Marín and Berkes, 2010). A good co-management process will be characterised by linkages that start within the members of the communities. Social linkages among the members of the communities will expand further to involve local organisations, further extending to external ones (Marín and Berkes, 2010).

2.3.4.2 Co-management as a Participatory Model

Gutiérrez, Ray, and Omar (2011) considered fisheries co-management as a participatory model to foster sustainability. Fisheries co-management is a cornerstone of the FAO "Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication" which, by default, provides recognition of SSF in response to their increasing vulnerability to economic and food benefits (Tilley, Hunnam, Mills, Steenbergen, Govan, Alonso-Poblacion, Roscher, Pereira, Rodrigues, Amador, Duarte, Gomes and Cohen, 2019). House, Kleiber, Steenbergen and Stacey (2023) also noted the role that SSF co-management can play in gender equity, where women empowerment can be at the forefront. Women's inclusion in the decision-making can bring different additional knowledge, thereby improving the management of SSF (James, Gibbs, Whitford, Leisher, Konia and Butt, 2021).

2.3.4.3 Co-management as a Governance Mode

Co-management has emerged as the most promising governance approach for the management of SSF (Gutiérrez, Ray and Omar, 2011). According to Albornoz and Glückler (2020), there

are three specific characteristics for effective governance of natural resources derived by scholars worldwide, and the following details pertain to the SSF:

a) Decision-making

Decision-making relates to a deliberate process whereby parties resolve collective problems in pursue of common objectives (Plummer and Baird, 2013). This can be achieved by having a negotiation structure capable of involving local resource users and this feature of co-management arrangement can influence the cooperation of the interested parties (Albornoz and Glückler, 2020). Although a considerable effort is made to include fishers in the planning and decision-making of the management of their resources, the limited influence of local fishers in the crucial decision-making is still evident (Albornoz and Glückler, 2020).

b) Pluralism

Pluralism refers to the embracement of the diversity of perspectives and backgrounds of stakeholders to address a specific problem in multi-stakeholder coordination (Jentoft, Bavinck, Johnson and Thomson, 2009). Although there can be fisheries management arrangements for each geographic location, these arrangements must be legally accepted by the state for effective governance (Albornoz and Glückler, 2020). Co-management can increase the legitimacy of the management of SSF, reduce the management costs that are incurred from conventional central management and increase equity and empowerment of resource users (Olsson, Folke and Berkes, 2004). Jentoft and Bavinck (2014) pointed out that they were not clear as to whether co-management legitimises the state regulations by resource users, yet Yates (2014) perceived fishers' understanding of the need for strict fishing control to be acceptable, provided that the regulations were meant to sustain their resources for long-term viability. The fishing regulations can be acceptable to the local fishers provided they were formulated collectively with them to integrate their cultural context into the co-management arrangements (Albornoz and Glückler, 2020).

c) Shared Authority

The need to promote responsible and sustainable fisheries and to secure the socio-economic development of SSF is recognised by the FAO of the United Nations (Jentoft, Chuenpagdee, Barragán-Paladines and Franz, 2017), which is being addressed by Sustainable Development Goal 14 (FAO, 2020). Good governance is necessary to achieve these ambitious goals, and the government's role in this regard is to ensure that there is an effective competent authority and

structures managing fisheries resources at all levels within the co-management arrangement (Albornoz and Glückler, 2020). The shared authority entails the distribution of the state power by considering the heterogeneity and independence of stakeholders who are aware of multi-stakeholder participation (Albornoz and Glückler, 2020). The government must also ensure that there is a formal institutional capacity for all co-management structures (Barnes-Mauthe, Oleson and Zafindrasilivonona, 2013). Ouréns, Melnychuk, Crowder, Gutierrez, Hilborn, Pita and Defeo (2022) shared the same sentiment with Barnes-Mauthe and colleagues by revealing that good governance can be attained by enhancing communication and transparency, adaptability, fishers' leadership and capacity building for the SSF. From these discussions, one can deduce that the empowerment of the fishing communities is important for meaningful participation in the sharing of powers.

Kaminski (2012) studied the co-management of East Coast Rock Lobster (ECRL) at Tshani Mankozi dwelling area on the Wild Coast. This fishery is harvested by divers in the local community and sold to local restaurants. It was noted from this study that the divers were catching more lobsters than the national government's daily allocation quota. However, it was noted that the management of this fishery was in the hands of the divers and not the state (Kaminski, 2012). Concerns exist about the sustainability of this important fishery resource.

2.3.5 Critiques of SSF Co-management

Co-management is founded on a positivist ideology in which scientific findings from donor-funded projects are considered to contain all the solutions to the problems of natural resources (Lawry, 1994 as cited by Hara, 2000). Donor-funded projects for the co-management of fisheries originated from Western countries, so their funders have a very strong influence on the management of resources compared to local resource users (Degnbol, Gislason, Hanna, Jentoft, Nielsen, Sverdrup-Jensen, and Wilson, 2006; Ho, Ross and Coutts, 2016). As a result, scientific information from donor-funded projects has been criticised for overlooking indigenous information on cultural and socio-economic drivers governing the exploitation of fisheries (Degnbol et al., 2006). Within co-management, the central role of government tends to still dominate as opposed to the participatory approach due to the unwillingness of the government to dilute its power, thereby undermining co-management (Hara, 2000; Thang, 2018). Additionally, the organisations of the fishing communities are generally considered to be unfit to manage fisheries by themselves, and this perception could explain why co-

management of fisheries has yielded mixed results in different countries (Hara, 2000). As a result, the ideology of co-management is not supported by every modern scholar (Hara, 2000).

Other critiques have pointed out that the co-management of SSF appears to exist in a hypothetical world, where there is a special cultural foundation with a strong communal value that cannot be implemented with ease inreal-world (Jentoft, McCay and Wilson, 1998). The effectiveness of co-management on social impacts remains a subject of concern (Béné, Belal, Baba, Ovie, Raji, Malasha, Njaya, Andi, Russell and Neiland, 2009; d'Armengol, Castillo, Isabel Ruiz-Mallén, and Corbera, 2018). In Africa, O'Leary, Goodman, Tuda, Machumu and West (2020) revealed a case where the inclusion of traditional authorities as community representatives in the co-management of SSF resulted in corruption and marginalisation of communities due to the lack of accountability from the traditional authorities. Despite the critiques on co-management highlighted above, there are success stories that can be told about fisheries co-management as this concept continues to evolve (Freitas et al., 2020).

Nevertheless, co-management, if implemented successfully as a strategy, has the potential to address issues on the sustainability of Small-scale Fisheries (SSF) (Pomeroy and Williams, 1994; Pomeroy and Ahmed, 2006). With the overwhelming literature on the potential of successes that was discussed above, one can argue that co-management arrangements can work on the Wild Coast based on understanding key stakeholders' perceptions. The co-management approach to SSF is the focus of this study.

2.4 The Underpinning Theory: Stakeholder Theory

Stakeholder theory was an underpinning theory for this study. This theory asserts that the importance of stakeholders' interests in the organisation is of utmost importance and that the success of an organisation will be determined by how well the stakeholders' needs are met (Husillos and Alvarez-Gill, 2008, as cited by Latip, Sharkawi, Mohamed, and Kasron, 2022). According to Colvin, Witt and Lacey (2020), stakeholder theory is a business management theory that was adapted to environmental natural resource management (ENRM). The translation of stakeholder theory to ENRM created a new lens to analyse this theory. In natural resource management, stakeholder theory aims to facilitate public participation in decision-making by identifying stakeholders and prioritising their interests (Colvin et al., 2020). To facilitate the discussion of the present study, stakeholder theory was viewed under the lens of ENRM.

Within the sphere of ENRM, stakeholder theory has witnessed a greater attentiveness to decision-making resulting from the integration of multiple voices from the general public (Colvin et al., 2020). Reeds (2008) noted that stakeholder analysis (i.e. the understanding of the stakeholder to inform decision-making) and engagement (i.e. the involvement of stakeholders in decision-making) are central when analysing the stakeholder theory under ENRM. Stakeholder analysis is important to understand the social dimension of ENRM (Reeds, 2008). According to Reed et al. (2009: 1393), stakeholder analysis is a process that:

(i) defines aspects of a social and natural phenomenon affected by a decision or action;
(ii) identifies individuals, groups, and organisations who are affected by or can affect those parts of the phenomenon (this may include nonhuman and non-living entities and future generations); and
(iii) prioritises these individuals and groups for involvement in the decision-making process.

From the three viewpoints stated above, one can deduce that stakeholder engagement is about tackling societal issues between decision-makers and other stakeholders. Stakeholder engagement is an ongoing process for the stakeholders to exchange information (Cundy, Bardos, Church, Puschenreiter, Friesl-Hanl, Müller, Neu, Mench, Witters and Vangronsveld, 2013). Within ENRM, stakeholders can be empowered to participate in decision-making or can be tokenistic, which means that the stakeholders' perspectives can either be sought or not be sought but cannot be incorporated meaningfully into the decision-making (Olvin et al., 2020).

When analysing the stakeholder theory in the management of fisheries, Góes, Reis and Abib (2021) noted that stakeholder theory intersects with the justification theory at a point of incorporating the knowledge about the value of the stakeholders in the decision-making processes. The knowledge of the stakeholders is crucial in strengthening managerial practices by providing a platform for negotiating objectives and executing decisions for increased satisfaction and sustainability (Góes et al., 2021). Each stakeholder should understand the importance and value of fishing (Ignatius and Haapasaari, 2018). Bertheussen and Vassdal (2023) noted that the stakeholder theory can also be integrated into the resource-based theory to explore how value can be created in fisheries resources. The value creation is dependent on stakeholders outside the boundaries of the fishing sector (Bertheussen and Vassdal, 2023).

According to Mikalson and Jentoft (2001), success in managing fisheries resources hinges on considering the public interest through institutional arrangements. Such interest can be attained by probing views, ideas and insights on stakeholders to gain some knowledge on their perceptions on SSF co-management for improving the management of these resources.

CHAPTER 3
Research Methodology

3.1 Introduction

This chapter gives details on the methodology that was used to conduct research for this study. Details on data collection and data analyses are given. Semi-structured interviews were used to collect data on the participant's views, experiences, and opinions on co-management for SSF. The chapter outlines research design, paradigm, data collection, data analysis, and ethical considerations.

3.2 Research Design

This study adopted evaluation research. Evaluation research has gained global recognition by synthesising information through qualitative means, which involves a participatory evaluation process of multiple stakeholders to gain their insight (Trimble and Plummer, 2019). This approach can derive information from qualitative data (Phoenix, Osborne, Redshaw, Moran, Stahl-Timmins, Depledge, Fleming and Wheeler, 2013). Information derived from the qualitative approach can support legitimacy in decision-making by stakeholders (Powell, 2006) and can evoke participants' meaningful and traditionally relevant responses (Mack, Woodsong, MacQueen, Guest and Namey, 2005). This approach was considered relevant to probe stakeholders' knowledge, experience, and background on the feasibility of SSF co-management on the Wild Coast.

3.3 Research Paradigm

A post-positivism research paradigm was associated with the present research. A deductive approach derived from the literature can adopt the post-positivism paradigm (Pearse, 2019). A post-positivism is a paradigm that balances positivism and interpretivism by focusing on issues that involve people's experiences (Deluca, Gallivan and Cock, 2008 as cited by Panhwar, Ansari and Shah, 2017). Accuracy, sound reasoning and production of evidence are central to post-positivism, and truth is bound by context, human action and interaction (Tanlaka, Ewashen and King-Shier, 2019). Post-positivism caters to human limitations and makes objective knowledge about reality. It can minimise bias associated with the research method but maximises confidence in the resultant knowledge (Tanlaka et al., 2019). Post-positivism

can also allow a change if further findings reveal new perspectives, thereby allowing the alteration of what was initially perceived as truth (Allmendinga, 2002).

3.4 Data Collection

Semi-structured interviews were used for this study due to their exploratory nature in qualitative research (Magaldi and Berler, 2020). According to Galletta (2013), semi-structured interviews are beneficial because they can provide information on the lived experience of the participant while addressing the researcher's theoretically driven variables of interest. Since this study adopted a deductive information approach, semi-structured interviews using face-to-face interaction were considered appropriate. Some respondents, however, requested telephonic interviews, and the researcher also considered collecting other data by telephone.

Interview questions were developed and designed in such a way as to uncover respondents' understanding of the concept of co-management, its theory and practice using themes presented in Table 3.1. Purposive sampling, targeting people based on their roles and responsibilities on SSFs were considered.

3.4.1 Sampling

Eleven participants were purposedly recruited from the group of stakeholders involved in the ongoing workshops for the management of SSF on the Wild Coast. The researcher was one of the key stakeholders for these workshops. Participants comprised five fishers from the cooperatives from the following sites (see Fig 1.1 of this document): Coffee Bay for more than a decade of mussel rehabilitation experience, Port St. Johns for more than a decade of finfish fishing, Lusikisiki and Xolobeni for the communities' willingness to work with the government on SSF and conservation for both sites. Dwesa-Cwebe, which was originally targeted for sampling, was omitted due to the challenges of not receiving gatekeeper permission from Eastern Cape Parks and Tourism Agency and fear of the violent fishing communities. The omission of this site was cleared with ethics approval process. Senior officers from the Department of Forestry, Fisheries and the Environment (DFFE), Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), Sustaining Wild Coast (SWC), World Wide Fund-SA (WWF-SA), and Walter Sisulu University (WSU) were also interviewed for their role in the management of SSF. DFFE and DEDEAT represented national and provincial governments, respectively. SWC and WWF-SA represented Non-Profit Organisations (NPOs), and WSU is an institution of higher learning on the Wild Coast. It was,

therefore, important to note similarities and differences in the perceptions of these stakeholders from such diverse backgrounds, whose interviews took place from 21 April 2023 to 23 June 2023 (Appendix A).

Table 3.1: Interview themes and questions used to collect data for this study.

Themes	**Questions**
Understanding co-management	1. In your own opinion, what would co-management of small-scale fisheries entail? 2. Would you recommend co-management for small-scale fisheries on the Wild Coast? Please motivate your answer.
Benefits of co-management	3. Who do you think should be the key stakeholders involved in co-management for small-scale fisheries in the Wild Coast? Please discuss why you've indicated specific organisations or individuals (i.e. please motivate your answer). 4. What kind of benefits do you think can be attained from such a co-management approach to small-scale fisheries in the Wild Coast or South Africa?
Coordinating and communicating co-management	5. What kind of communication practices should be in place for effective co-management, in your opinion? 6. How could pathways for coordination between the formal institutions and communities be created for effective co-management of small-scale fisheries, in your opinion?
Governance	7. In your opinion, what support is needed to enhance the cohesion of stakeholders of small-scale fisheries for co-management in the Wild Coast? 8. Can the diversity of systems of rules from communities and government regulating small-scale fisheries be integrated? Please motivate your answer. 9. How can the role of communities and local power in decision-making on small-scale fisheries be enhanced? 10. In your opinion, how should the powers of decision-making on small-scale fisheries be shared among stakeholders?
Participation	11. How to achieve equity and diversity within small-scale fisheries? 12. Are there fisheries of cultural or religious importance on the Wild Coast? If so, a) what measures should be in place to ensure their continual availability? b) who should put those measures? c) Do you think everyone in the community has a role to play in ensuring the compliance of the regulatory measures? Please motivate your answer. 13. How would you describe the level of community participation in the regulation of the exploitation of small-scale fisheries for successful co-management? 14. Would you say we need community organisational structures for small-scale fisheries? Please motivate your answer.
Ownership and empowerment	15. Who should determine the involvement of stakeholders in small-scale fisheries? 16. How can the involvement of each stakeholder be enhanced? 17. What kind of empowerment is needed for a successful co-management of small-scale fisheries?
Challenges of co-management	18. What do you consider as potential challenges of co-management of small-scale fisheries on the Wild Coast? How can those challenges be overcome?

3.4.2 Interview Procedure

The researcher requested consent for interviews from the participants. The consented participants signed indemnity forms (Appendix B). Other respondents indicated that they were only available by telephone and requested an interview by phone. For the telephonic interviews, the consent was given telephonically, and the consent form was sent by email. In Lusikisiki, the fishers turned out to be unwilling to participate on the day of the interview. However, one of their fellow fishermen came later and offered to be interviewed. Audio recording was done for both face-to-face and telephonic interviews. The interview sessions lasted between 45 and 70 minutes. Interviews were kept interactive throughout the session (Fontana and Frey, 2000). Field data were kept throughout the study period to conform to the dependability and confirmability (Korstjens and Moser, 2018) and reflexivity of the results (Olmos-Vega, Stalmeijer, Varpio and Kahlke, 2022).

3.5 Data Analysis

Thematic analysis was used in this study. Thematic analysis is a widely used valuable method in qualitative data analysis because it allows researchers to make sense of shared meanings and experiences (Braun and Clarke, 2012). Thematic analysis was considered appropriate for this study to uncover participants' shared perceptions of the management of SSF. Thematic analysis is considered a foundational method for qualitative analysis to be used to identify, analyse, describe and report themes within data (Braun and Clarke, 2006). This approach entails the researcher getting familiar with the data, searching for themes, reviewing themes, defining and naming themes and producing the report (Nowell, Norris, White and Moules, 2017).

3.6 Trustworthiness

Unlike quantitative research, qualitative research can use smaller and non-random samples (Creswell, 2014). Trustworthiness is used in qualitative studies to evaluate the accuracy of findings (Creswell, 2014). In this case, predetermined themes linked to the objectives of this study developed before the start of data collection (Table 3.1) were necessary for ensuring the trustworthiness of the study. Audio interview data were transcribed into text using Otter.ai, thereby ensuring that respondents' direct words were captured accurately, without interference by the researcher. This was necessary to minimise the chances of bias in the research findings. Field data were kept throughout the study period to conform to the dependability and confirmability (Korstjens and Moser, 2018) and reflexivity of the results (Olmos-Vega, Stalmeijer, Varpio and Kahlke, 2022).

3.7 Ethical Considerations

This study was guided by the research ethics requirements of Rhodes University and formal ethical approval was requested after a rigorous review process. The Rhodes University Human Research Ethics Committee reviewed this research's ethics application and gave conditional and final approvals (approval number: 2023-5938-7533) in March 2023 and July 2023, respectively. Copies of ethics approval letters are appended (Appendices C and D).

WSU assisted by recruiting voluntary participants who previously participated in the ongoing stakeholder workshops on SSF on the Wild Coast. All participants were above 18 years old. The confidentiality and anonymity of the participants were ensured by not revealing their names. The identity of the participant was hidden from the public to ensure their privacy and confidentiality. Each participant's name was coded as Participant 1, Participant 2, etc., to maintain secrecy. The participants were assured of the confidentiality of their identity (by labelling them as Respondent 1, Respondent 2, etc.), which would not be shared with any other person without their consent.

CHAPTER 4
Data Analysis and Results

4.1 Introduction

This chapter presents findings on the stakeholders' perceptions of co-management for SSF on the Wild Coast of South Africa from 11 interviews. These interviews were intended to get stakeholders' perspectives on the co-management of SSF. Stakeholders of this study comprised fishers, provincial and national government officers and others (university and non-profit organisations). It was interesting to note the similarities and differences of the perception within and across the key stakeholders; and the factors that influence these perceptions. Findings are presented according to the themes that emerged from the literature (Table 3.1 of the previous chapter).

4.2 Sampled Respondents

Respondents comprised fishers from four different sites of the Wild Coast, government departments, NPOs and WSU. Table 4.1 below gives a summary of the number of respondents that were sampled from the stakeholder groups.

Table 4.1: A summary of stakeholders sampled for interviews for the present study.

Sector and organisation	**Number of participants interviewed**	**Respondent #**
Government: DEDEAT	1	Respondent 1
University: WSU	1	Respondent 2
Government: DFFE	1	Respondent 3
Community: Fishing Cooperative – Xolobeni	2	Respondent 4
		Respondent 5
Community: Fishing Cooperative – Lusikisiki	1	Respondent 6
Community: Fishing Cooperative – Port St Johns	1	Respondent 7
Community: Fishing Cooperative – Coffee Bay	1	Respondent 8
Non-profit: SWC	1	Respondent 9
Non-profit: WWF-SA	2	Respondent 10
		Respondent 11

4.3 Analysis of Responses

The analysis of responses presented in this section focused on stakeholders' perceptions of the co-management of SSF. The results of the analysis are presented according to the themes identified before the commencement of the research.

4.3.1 Understanding Co-management

The perceptions of the respondents of the concept of co-management of SSF are analysed by unpacking their understanding of the definition and by identifying who they perceived should be the key stakeholder in this arrangement.

4.3.1.1 Defining Co-management

Respondents gave their perceptions on the definition of co-management, which suggested that all respondents associated the term with forming partnerships between government and other stakeholders like communities. Other respondents used directly the word "partnership", whereas indirect use the word from phrases such as "working together", "power partners" and "we need to be participants". For example, Respondent 1 and Respondent 2 said, "…*partnership between government as the regulatory authority … together with the communities*" and "… *that I would say the power partners*", respectively. Respondent 9 was vocal about the empowerment of the communities when defining co-management with the emphasis saying, "*Co-management should entail a full participation of the local people, it also does mean empowering the local people with the knowledge required to manage the resources*".

All respondents showed the same understanding of the concept of co-management, as they perceived it to entail forming partnerships among stakeholders. Government and communities were important stakeholders when defining co-management.

4.3.1.2 Perceptions of Who Should be the Key Stakeholders in Co-management

Different perceptions were noted from stakeholders in this regard. Respondent 7's perception was that educational institutions should be the key stakeholders, "… *you need someone who does not have conflicting interests. Those are educational institutions*". Similar responses, suggesting educational institutions as the key stakeholders were received from Respondent 2, Respondent 5 and Respondent 9. All the respondents noted above perceived the government

as not a key stakeholder, whereas the remainder of the respondents perceived the government as a key stakeholder.

All government officers, two respondents from NPOs and three fishers perceived that the government should be the key stakeholder in the co-management arrangement for SSF. The rest of the stakeholders felt that government should not be a key stakeholder. A failure to identify the key stakeholders by the respondents can undermine co-management arrangements.

4.3.2 Perception Towards the Benefits of Co-management

Every respondent perceived co-management as beneficial. Information sharing tool was the benefit noted by Respondents 3 and Respondent 2, who used the words "… *sharing information centrally for every stakeholder*" and "… *knowledge dissemination*", respectively. Similarly, Respondent 6 and Respondent 8 had "share information" in their responses.

Self-regulatory was another benefit that was noted by the respondents. For example, Respondent 3 referred to the involvement of communities in the management of fisheries as "… *artificial intelligence operating 24 hours*". Similar responses were also noted from Respondent 5, Respondent 9, and Respondent 11.

Utilising the strength of different stakeholders was noted in some responses. For example, Respondent 1 said, "… *incorporation of expertise from various stakeholders* …". A similar viewpoint was given by Respondent 10, who said, "… *utilising the strengths of different stakeholders… there isn't enough authority capacity to adequately manage resources. And also limited resources, financial resources to enable the management. So, a cost-effective method of managing would be performance management way communities are provided. So, the issue is to look at how those communities can be more engaged and capacitated to be stewards of those resources*".

Other respondents perceived co-management as beneficial for securing fishing rights. For example, Respondent 4 said, "*co-management can help us resolve the issue of permit*…" The same sentiment was shared by Respondent 5 when saying, "*The benefits include the protection of the fishery and the fishing rights as well*", identifying the protection of the resource by the communities as an important role. Gaining access to fishing permits grants someone the right to exploit resources. Respondent 9 had this to say, "*if the conservation, the protection and the*

management of those marine resources is in the best interest of those communities, it makes sense for them because they are there on a daily basis", also supporting the protection of the resource by the communities.

Different views were expressed on the benefits of co-management. Getting fishing permits to access fisheries resources was the benefit that came out only from the fishers. The communities' contributions would be the protection of the resources. Other benefits were not associated with any specific stakeholder group. Different benefits noted by the respondents could suggest different interests in co-management arrangements.

4.3.3 Coordination and Communicating Co-management

Respondents gave their perception of communication practice and means of communication, whose responses are elaborated further in the sub-sections below.

4.3.3.1 Perception of Communication Practice

The national government's leadership role in coordinating co-management was considered important by government officers. For example, Respondent 1 said, "*the lead department national issue should actually coordinate, come up with stakeholder map that will inform the level of participation*".

Other respondents perceived the need for stakeholder representation, without necessarily considering the national government's leading role. For example, Respondent 2 said, "… *to have a representative from each of these participating parties*". Respondent 4 said, "… *get a few people that are well informed in the communities to communicate on behalf of their communities in co-management structures*".

Different views existed between government officers and other respondents. Government officers were of the view that the national government should have a leadership role, whereas other respondents were not explicit about government leadership in their responses.

4.3.3.2 Means of Communication

Mixed responses on the means of communication were noted from the respondents. For example, Respondent 1 felt that the face-to-face was appropriate, "*Face-to-face, unfortunately, is the most effective*". All fishers perceived face-to-face meetings as appropriate except for one fisher from Lusikisiki, who mentioned that the use of mobile phone technology was already a

means of communication for their social issues. Respondent 3 also preferred the use of social media by saying, "*we are currently in the fourth industrial revolution era … for instance, then people you know, to project their phones, also WhatsApp platforms, also email platforms, various means of communication is especially appropriate*". Respondent 10's viewpoint was on addressing the language barrier when saying, "*Address language barrier issue, formalise co-management structures*", suggesting that virtual or physical means of communication issues were overridden by language challenges.

Overall, communication was a key for co-management arrangements. The language barrier needed to be addressed. Face-to-face communication was preferred by the majority of the respondents.

4.3.4 Governance

Analysis of attributes that could lead to improved management of SSF was done. Below are details of the perceptions of the respondents from this study.

4.3.4.1 Enhancing Stakeholder Cohesion

All respondents considered capacity building in the form of training necessary for the communities, with DFFE as a lead agent. For example, Respondent 1 and Respondent 3 said, "*… there has to be a champion that takes the lead, in terms of training, so that the type of information that we get from each stakeholder is contextualised*" and "*If we can build the capacity of participants management structure, have specific value and training workshops, certain issues will be dealt with*", respectively.

Although all respondents acknowledge DFFE's leadership role in this regard, non-government officers expressed their anger and lack of trust in government, preferring this task to be delegated to the universities. For example, Respondent 7 and Respondent 5 said, "*My understanding is that DFFE is supposed to be the one leading. it's not happening. I think educational institutions could be, it's not their responsibility*" and "*Government should be the champion but is failing. University could help*", respectively.

Every respondent acknowledged the role of government in this regard. Government officers felt that DFFE should lead, whereas other respondents felt the need to delegate this task to the

university because of the failure of the government. Fishers expressed the need to fix the broken trust between government and communities.

4.3.4.2 Integrating Traditional System into the Government System

Ten out of eleven respondents' perceptions were that traditional and government systems can be integrated. For example, Respondent 1 and Respondent 3 said, "… *the key thing would have to be the review of legislation that governs the small-scale fishers*. *I do think there is room for integration*" and "*Yes. There should be an integration of systems … and I had that also the legislation will be revisited*", respectively. Only Respondent 4 said, "… *not possible. Because as the traditional one has their own way of doing things in the government*", suggesting that integration was not possible.

There was a general agreement stating that both traditional and government systems regulating the exploitation of natural resources could be integrated. The amendment of legislation to accommodate such integration was recommended by respondents.

4.3.4.3 Enhancing Local Power

The general perception from the respondents was that the communities can be empowered using platforms such as fisheries cooperatives and other societal structures already available to raise their issues. This was considered a cost-effective way to deal with community issues rather than having to wait for the provincial and national governments to come up with their initiatives. These views came from Respondent 1, who said, "… *what can be done is that if these small-scale fishers organize themselves, … they can comment on draft legislation, which is already a provision in the current legal framework. But what you find is that they only wait for workshops to come to them, for them to have a voice*".

Capacity building was key in the discussion and was articulated in various phrases during interviews. For example, Respondent 10 and Respondent 9 emphasised the need for capacitating the communities by saying, "*Dedicated interventions that capacitate the communities*" and "*if they are given the roles and responsibilities*, … *if they are trained*, … *you are building on to that foundation of indigenous knowledge*", respectively.

Training of the communities was considered important. Additionally, government officers emphasized the need for communities to be proactive on their social issues. Interaction between

the government and communities should be promoted and must happen in both directions. Community interaction initiatives were proposed.

4.3.5 Participation

Perception of stakeholder participation in SSF was explored. Specifically, questions were asked on how to achieve equity and diversity, the involvement of community engagement in decision-making, and how community organisational structures should be formed. Below are the details of the responses received.

4.3.5.1 Perception of Achieving Equity and Diversity

Responses received on how equity and diversity could be achieved covered gender and ethnicity. Achieving equity and diversity was considered not an issue by the majority of respondents. Traditionally, men harvest finfish and rock lobsters, whereas women harvest only shellfish. This viewpoint was evident to the majority of the respondents, e.g. Respondent 10 said, "*ethnicity diversity is not an issue, it is already happening. Gender equality should be maintained based on tradition, that is women harvesting shellfish versus men harvesting line fish*". Eliminating barrier that prevents people from accessing the resource was an opinion of Respondent 1, who said, "*To achieve equity, you need to eliminate any barriers to entry. For example, as government, we shouldn't charge an exorbitant fee demand to be registered or to have a fishing license*".

Other respondents, however, were vocal about the lack of ethnic and gender equity in SSF. For example, Respondent 9 said, "*There is no equity, and the government is not paying attention to that. To be able to achieve equity, you need to have a government who is willing to invest in those fishing cooperatives. The problem is that we have a lack of cooperative governance, because if there is one, you wouldn't have established cooperatives and promised them boats, then the next step is a priority of the offshore oil and gas, which if it was to happen, there would be incidents of oil spill, killing the fish, thereby disempowering these cooperatives".* Respondent 10 was cautious of gender equity and shared the same thought as Respondent 9 when he said, "*Women fishing on the shoreline and men offshore, we must make sure that nobody is left behind in any aspect of SSF. Equity is problematic to SSF as they do not get a fair share of what they catch. They are the marginalized groups, and price-takers in the value chain. There is a lack of understanding of the value of the market. SSFs don't have the*

necessary infrastructure. Need a more transparent value chain to address this. Dedicated capacitation to participate in the broad value chain".

Within the community organisational structures, gender equity was also considered by ten respondents as not an issue of concern, as gender balance was present in the structures of the fishing cooperatives. Traditionally, women harvest shellfish, whereas men harvest finfish as Respondent 9 said, "*On the coast, most fishermen those who are catching fish using longline are men, but the majority of those who are catching crayfish and shellfish, oysters and mussels are women. You find that to a certain extent, there is a gender balance*". However, not every respondent agreed on the presence of gender balance, as Respondent 11 felt that there was room for improvement by saying, "*We have our women, they can fish the finfish and I can assure you, they can outcompete men when diving*". Capacitation of women was emphasised by Respondent 11.

Ten respondents were of the view that equity and diversity did not pose issues of concern because they are catered from tradition. However, one fisherwoman felt that the tradition was discriminatory and needed to be revised because of the suppression of skills by gender.

4.3.5.2 Perception of Community Engagement in Decision-making

Responses received from government respondents, WSU and two fishers from Coffee Bay and Lusikisiki indicated that there were adequate community consultations by the government on SSF matters. Respondent 1, for example, said, "*I've actually participated in a number of workshops, where we as invited … DFFE do definitely engage communities, in terms of providing them an opportunity to comment on draft legislation*".

Other respondents indicated that there was inadequate or no consultation by the government. For example, Respondent 11 and Respondent 9 said, "*Communities were never consulted on the matters pertaining to the regulation of SSF*" and "*Very little. Local people should be at the core of the implementation of the marine living resources*". Respondent 10 also felt that there was inadequate consultation when saying, "*From a scale of 1 to 5, 1 being weak and 5 being excellent, I would choose 1*".

Mixed results were obtained from this sub-section, with two government officers, WSU and two fishers, commending the government on community engagement before decision-making. The rest of the respondents replied, saying that was not the case.

4.3.5.3 Perception of the Establishment of Community Organisational Structures

Every stakeholder perceived that there was a need for community organisational structures. For example, Respondent 1 and Respondent 10 replies were, "*Yes, definitely. It has to be at a tiered approach. ... there has to be a higher level of structure way where they are provincial level engagements*" and "*Community structures are needed and should be formalised*", respectively.

The emphasis here was on the establishment and formalising of community structures for resolving community issues. These interventions were considered important to facilitate co-management arrangements.

4.3.6 Ownership and Empowerment

4.3.6.1 Perception of Who Should Determine the Involvement of Stakeholders in SSF

Mixed responses were received from the interviews in this sub-section. Some respondents perceived the government having to take a leadership role, e.g. Respondent 1 and Respondent 3 said, "*I think the lead department national issue should actually coordinate, come up with stakeholder map that will inform the level of participation as well as the role of each stakeholder*" and "*Based on the Constitution, the authorities are the ones to take a lead*", respectively. Respondent 9 said, "*Officials responsible for the implementation of the Marine Living Resources Act*", sharing the same idea as the two respondents stated above.

Respondent 7 thought that it should be the responsibility of both government and universities: "*I think it should be primary and secondary stakeholders. In the primary, it's basically government … secondary one would be educational institutions*". Respondent 4 thought it should be the university, "*I think it is the university because the university has been able to just research*". Respondent 10 perceived that there should not be a specific stakeholder attached to this responsibility, but it should be any stakeholder representing the interest of the people "*This depends on a case by case … but it is important that the organisation does represent the interest of the communities*".

Respondents' viewpoints were different in this case, with the government being recognised by its officers, whereas fishers opted for university.

4.3.6.2 Enhancing the Involvement of Stakeholders

The respondents felt that not everyone could participate in the gathering for co-management arrangements, hence the need for stakeholder representation. There was a general perception of stakeholders to have a representation as Respondent 1, for instance, talked of the need for competent stakeholder representation, "… *quality of ad hoc representatives*". Respondent 10 considered every situation as different and said, "… *dependent on the community co-management structures*", and suggested a hybrid communication platform, which could increase the number of participants.

Representation was key for ensuring the involvement of diverse stakeholders in co-management structures. Both physical and virtual could enhance a thorough stakeholder representation. Competent members had to be selected to ensure full participation.

4.3.6.3 Empowerment

All stakeholders considered training as an important intervention to empower the fishing communities. For example, Respondent 1 and Respondent 10 said the following when referring to the empowerment of the communities "… *need to be empowered about the species that are within their spaces*" and "*It is essential that these fishers are capacitated*", respectively. Others such as such as Respondents 7, Respondent 3 and Respondent 9 used the word "training" in their responses to imply the empowerment needed. For example, Respondent 9 used the word "training", followed by highlighting his perception of how best this could be done by saying, "*there should be training, setting up of the report structures … the government must link this with an incentive scheme. Any community that is managing its resources well must be rewarded, for example, building them a lodge or campsite by the Department of Economic Development and Environmental Affairs to enhance ecotourism*".

Overall, the respondents were aware of the training needs required for effective co-management arrangements. There appeared to be no contradicting perception among the stakeholders interviewed in this regard.

4.3.7 Potential Challenges of Implementing Co-management on the Wild Coast

Respondents shared their different views on what they perceived could be the challenges of co-management of SSF on the Wild Coast. Below are the details of what they perceived.

4.3.7.1 Dichotomy in the Regulation of Natural Resources

The competing interests in the use of resources were highlighted during the interview. Respondent 1 talked about fishing rights issued by the government to the communities residing adjacent to the Marine Protected Area (MPA) and said, "*Now you have the same Minister, that gives people rights … So, there's that there's a dichotomy. They cannot implement those rights, because they have no way to implement those rights. They will have to go beyond the Marine Protected Area. They don't have the resources*". This statement was given in the context of fishers being given fishing rights, yet they were living adjacent to the MPA, without any provision to fish elsewhere. Being reliant on fisheries resources, such communities had no choice other than fishing in the MPA. Issues like these were considered serious as they arose within the same government department, so one wonders how this department would deal with multiple issues from multiple stakeholders under co-management.

4.3.7.2 Lack of Literacy and Transparency

The respondents considered the lack of literacy and transparency as a challenge in the Wild Coast. Respondent 2 and Respondent 10, said, "*Literacy is the major challenge*" and "*Getting … people who won't be using co-management as a vehicle to push their own agenda at the expense of small-scale fishers*", respectively. Lack of literacy and transparency can compromise co-management as it is linked to communication. Respondent 3 considered the lack of literacy to have a direct negative impact on communication and said, "*Communication among stakeholders and active participation of communities among stakeholders*". Respondent 11 considered also the lack of communication as a challenge.

There needs to be literacy and transparency for effective co-management arrangements. The lack of literacy and transparency can negatively affect communication, which is core for co-management.

4.3.7.3 Failure to Address Power Dynamics

There was a general perception that most of the power was centred on the government. Failure to decentralise government power means that co-management of SSF cannot be realised. This generalised view was evident in some responses. For example, Respondent 7 said, "*Power*

dynamics. That's the biggest challenge". The same view was shared by Respondent 8 and Respondent 9.

Stakeholders were vocal about the supreme power of government and felt that, unless government power was devolved, co-management was doomed. This challenge was raised by non-government officer respondents.

4.3.7.4 Inability to Combat IUU

There was a concern that IUU (illegal, unreported, unregulated) fishing is threatening the future of our natural resources and that the government's regulatory measures are inadequate. In this context, Respondent 11 said, "*Government policing from Monday to Friday is inadequate because IUU happens also on weekends*". The same sentiment was shared also by Respondent 4 and Respondent 5.

IUU fishing was a concern highlighted by some respondents of this study. It appeared that the government's efforts to combat IUU fishing were failing as it targeted subsistence fishers instead of unknown boat owners. Unknown boat owners were reported to come and trawl the shore when government officers were not around. The respondents perceived subsistence fishers' impact as minimal compared to those of the boat owners.

4.3.7.5 Difficulty in Accessing Fisheries Resources

Poor road infrastructure, which makes movement to meeting venues and fishing sites difficult, was a challenge. Respondent 3 said, "*accessibility to the area, that is building an access road*". Government law enforcement criticised, as Respondent 9 said, "*law enforcement agencies acting as enemies of the local communities, which can be overcome by working together and cooperatively with the local communities*".

Legislative and physical infrastructural barriers were highlighted as issues of concern by these stakeholders. Improving interaction between government and communities was recommended.

4.4 Conclusion

The result chapter has highlighted that all stakeholders have a common understanding of the term "co-management". Similarities and differences in their perceptions were noted, which will be discussed in detail in Chapter 5.

CHAPTER 5
Discussion

5.1 Introduction

This chapter discusses the findings on the stakeholders' perceptions of co-management for SSF on the Wild Coast of South Africa. These findings were derived from the data of the interviews for this study. To facilitate this discussion, seven themes derived from the literature were grouped based on the procedure of data collection (see Table 3.1 of Chapter 3).

5.2 Understanding Co-management of SSF

Every response given by each participant on the definition of co-management carried the message that this term entailed the involvement of different stakeholders in the management of SSF. These responses were in line with the general understanding of co-management of SSF, which is viewed as a mechanism for collaboration and adaptive creativity (Pomeroy and Berkes, 1997). Enhancement of partnership among stakeholders was a distinguishing character from responses received when defining co-management in the present research. Details of the understanding of the stakeholders' perceptions and the associated key stakeholders in the co-management of SSF are discussed in detail below.

5.2.1 Forming Partnerships Among Stakeholders

All respondents were of the view that co-management is about forming partnerships with different stakeholders to improve the management of SSF. This viewpoint was in line with the global literature. For example, Retnoningtyas, Yulianto, Soemodinoto, Herdiana, Kartawijaya, Natsir and Haryanto (2021) noted that partnership is important in the management of fisheries because opinions and concerns can be communicated to generate constructive inputs to improve the effectiveness and performance of fisheries management initiatives. The enhancement of partnerships across agencies is necessary for implementing fisheries management, whose success hinges on the decision-making processes based on stakeholders' knowledge, values, needs and social interactions (Schwermer, Barz and Zablotski, 2020).

5.2.2 Perceptions of Who Should be the Key Stakeholders

The respondents of this research were divided into those who perceived that the government should be a key stakeholder and those who perceived it should not. According to FAO (2021: 14), the government is an important stakeholder in the management of SSF, "key stakeholders in the small-scale fisheries sector can include a variety of individuals, groups, customary organizations and authorities, such as civil society organizations and most vulnerable groups (such as women and youth), fishing communities, government parliamentarians, the private sector, national public institutions, national human rights institutions, regional organizations and networks, academia, law centres/clinics, legal-aid centres, and last but not least, all actors along the value chain (i.e. fishers and fish workers such as processors, vendors, traders, suppliers, intermediaries, retailers, exporters, consumers)". The role of government as an important stakeholder in the management of SSF, therefore, cannot be disputed. Identifying the key stakeholders is important for successful co-management arrangements.

5.3 Benefits of Co-management of SSF

Given the evidence of benefits of co-management mentioned by the respondents of this study, it can be deduced that there were more benefits than costs associated with co-management arrangements. According to Pomeroy, Katon, and Karkes (2001) and Napier, Branch and Harris (2005), the benefits that exceed the cost of participating in management arrangements predict successful co-management. In this case, co-management of SSF is feasible for the Wild Coast. A detailed discussion on the benefits of co-management outlined in Section 4.3.2 of this document is given in Sub-sections 5.3.1 to 5.3.4 below.

5.3.1 Mobilising and Utilising Different Stakeholders' Strengths

Mobilising and utilising the strength of other stakeholders were benefits noted in Section 4.3.2 of this study. The respondents mentioned that the government had limited resources available and could not manage resources successfully. So, adopting co-management would bring a solution. These viewpoints were in line with the literature, where the communities could be the primary management actors of fishery resources (Freed, Dujon, Granek and Mouhhidine, 2016). Co-management can create participatory planning processes that involve interaction of culturally and socially heterogeneous communities with other stakeholders in improving the management of SSF (Kushardanto, Jakub, Suherfian, Subarno, Ansyori, Sara, Alimina,

Fajriah, Kardini, de la Rosa, Yuliani, Medianti, Pradana, Setiawan, Muhammad, Djafar, Box, Cox and Campbell, 2022).

5.3.2 Benefits of Securing Fishing Rights

Some respondents viewed co-management as an important tool to help them gain access to government fishing permits to harvest and protect the resources (Section 4.3.2). Communities in the Wild Coast were struggling to obtain fishing permits, and co-management was viewed as a tool to facilitate permit administration. This viewpoint was in line with the literature, as fishing permits give fishers access rights and ownership of the fisheries' resources worldwide. For example, Aguión, Ojea, García-Flórez, García-Flórez, Cruz, Garmendia, Davoult, Queiroga, Rivera, Acuña-Fernández and Macho (2022) noted the securing of access fishing rights as an important step in giving fishers incentives to participate in the monitoring and evaluation of fisheries stocks, and the information generated from these activities could guide decision-making processes. Hilborn and Ovando (2014) also shared the same sentiment when considering that traditional fisheries management had been successful for centuries before the world was colonised, supporting the idea of giving the local communities rights to access fishing to contribute to the data collection for improving the management of SSF. Legally supported rights are required for communities to protect fisheries' resources against outsiders (Pomeroy, Katon and Harkes, 2001).

If co-management were to be adopted and access rights be granted to the communities of the Wild Coast, the conditions of unemployment, poverty and lack of capital (noted by Mitchell and Anderson, 2011) should be addressed. Ignoring these conditions could undermine co-management, as was noted in Zambia (Overå, 2011). Similar findings were reported in Belize by Bowman, Mangi and Oxford (2021), despite access to fishing rights of community ownership and stewardship (Wade, Spalding and Biedenweg, 2019).

5.3.3 Self-regulation

Self-regulation was also a benefit noted by the respondents of this study (Section 4.3.2), who advised that involving the local people in the regulation of fisheries resources would be superior to government regulations because of the unlimited time of monitoring, covering more areas compared to government law enforcement. It entails giving owner rights to local communities, thereby changing the resource use status of common pool fisheries resources to

reduce fishing intensity (Freitas, Rivas and Kahn, 2005). Van Hoof (2010) referred to self-regulation as co-enforcement, sharing the same sentiment as Freitas, Rivas and Kahn. (2005).

Self-enforcement in the management of natural resources can also be achieved using culturally important species (CIS) (Freitas, Lopes, Campos-Silva, Noble, Dyball and Peres, 2020). CIS were not mentioned by the respondents of this study. Instead, the rivers, estuaries and oceans were valued as sacred places, where local communities could not do anything untoward (Section 4.3.2). Violating the rules of the ocean, for example, would attract bad luck; hence a traditional regulation system was recommended by these communities. The same viewpoint was documented in Madagascar by Muttenzer and Andriamahefazafy (2021: 378), who noted, "Sea spirits who are said to own these places reveal themselves to humans through their perceived presence in the landscape, stones, trees, human hosts, and physical appearances of mermaids. People respond to these revelatory signs with appropriate ritual performances. For example, a sacrifice must be performed to cleanse a sacred place from ritual defilement caused by a taboo breach".

5.3.4 Information Sharing and Overcoming the Language Barrier

Respondents of this study viewed co-management as a platform for sharing information (Section 4.3.2). Local people should be empowered with the knowledge required to manage fisheries resources to sustain their livelihood. This viewpoint was in line with the literature, as FAO (2022), recommended that small-scale fishers should be empowered with the relevant information for meaningful contributions to the stakeholder discussions.

However, language was considered key for the sharing of information for the Wild Coast (see Section 4.3.3.2). In the management of natural resources, language appears to have been neglected, as Stevenson (2006: 170), for instance, noted language issues in the Aboriginal community as follows, "the language, concept, and procedures of many co-management agreements are not only antithetical to, but frequently undermine, Aboriginal values and understandings". Stevenson (2006) cited the use of terms such as "stock", "harvest", and "quota" as having no meaning to most Aboriginal languages and refers to the use of these terminologies by the authorities as a violation of traditional relationships with nature. Resolving language in the management of natural resources is a complex subject that needs a thorough investigation. It could be noted, however, that the challenge of language has undermined co-management in other parts of the world. In Mozambique, for example, language

illiteracy resulted in the decisions being taken on behalf of those who could not understand Portuguese, thereby undermining the co-management of Limpopo National Park (de Oliveira, Otsuki, and Mubai, 2021). Taking decisions on behalf of the community would most likely be on the Wild Coast if the language challenge was not addressed. The poorest level of literacy emanating from the highest number of learners who cannot finish their basic education compared to the learners from the rest of South Africa was reported on the Wild Coast (Stats SA, 2016). These are some of the considerations to be borne in mind if co-management was to be implemented for the Wild Coast.

5.4 Coordination and Communicating Co-management

Coordination and communication are key in co-management arrangements. Respondents of this study gave their perceptions on the types of interaction for co-management arrangements, as discussed below.

5.4.1 Promoting Face-to-face Interaction

The respondents of this study shared their views on what could be the best platform of interaction (Section 4.3.3.2). Although virtual platforms were already in use, face-to-face interaction was recommended because the cellular network was said to be unreliable. The respondents highlighted the need for reliable attendance at the meetings, where serious matters happening in the communities could be raised. No opportunity to attend meetings had to be missed by community representatives. The literature also supported face-to-face stakeholder interaction. For example, Obregón, Admiraal, van Putten, Hughes, Tweedley and Loneragan (2020) noted that face-to-face interactions between fishers and other stakeholders as important to improve the network for the sharing of information. Some people tend to give out information freely when there is face-to-face engagement, while others prefer social media networking; hence, Obregón et al. (2020) recommended that the combination of these two media platforms should be considered. However, given the challenge of unreliable cellular networks noted from the present study, the combination of these two platforms may not necessarily apply across all the communities of the Wild Coast. Combining the two platforms should be the target for all co-management arrangements.

5.5 Governance

5.5.1 Enhancing Stakeholder Cohesion

There was a general perception from the respondents of this study that the national government department (DFFE) must be the lead agent to enhance stakeholder cohesion (Section 4.3.4.1). The respondents were of the opinion that the local communities should also be capacitated to participate in the co-management discussions. This viewpoint was in line with the global literature, as, for example, Basurto, Siegelman, Navarro, Mancha-Cisneros, Burgos, Kraan, Pauwelussen and Toonen (2023) noted that social cohesion and good leadership are important attributes that can lead to improved management of SSF. Good stakeholder networks, trust, and cohesion should be promoted in the communities to achieve good governance (Gutiérrez et al., 2011). This viewpoint was also revealed by Freed et al. (2016) in the Comoros, who noted that community engagement, horizontal networks and state support are needed for good governance. The heterogeneity of stakeholders must be recognised rather than treated as a single management entity (Dujon, Granek and Mouhhidine, 2016). Community collective action and coordination should be enhanced to maintain social processes for effective resource governance (Dujon, Granek and Mouhhidine, 2016).

5.5.2 Integrating Traditional into the Government System

There was a general perception that traditional and government regulatory systems could be integrated to improve the management of SSF (Section 4.3.4.2). Respondents viewed communities as rich in traditional knowledge, whereas government officers were rich in academic knowledge. Integrating the two knowledge systems could improve the management of SSF, and the thinking was in line with the global literature to impart relevant policies and strategies for the successful management of fisheries (FAO, 2022).

There is a need for the inclusion of indigenous knowledge into scientific knowledge for decision-making processes (Ainsworth, Pita, Pita, Roumbedakis, Pierce, Longo, Vertes, Castelo, Montero-Castaño, Valeiras, Rocha, García-de-Fuente, Acuña, Rueda, Fabregat, Martín-Aristín and Villasante, 2023). These interventions can help achieve SDG 14 (‘Life Below Water’) by promoting sustainable fishing, combating IUU, and providing small-scale fishers access to fisheries resources and markets. Small-scale fishers should be empowered with education, power and cohesive social institutions (Isaacs, 2006). They can also be equipped with the relevant policies and strategies (FAO, 2022). In Australia, for example,

integrating a traditional system into the government system helped with the sharing of the diversity of knowledge, thereby enhancing the resilience of the social-ecological system (Butler, Tawake, Skewes, Tawake and McGrath, 2012). In their study, Butler et al. (2012) recommended the establishment of new traditional forums to facilitate the co-management arrangement. Forums could also help with the mutual testing and validation of the two systems (Butler et al., 2012).

5.6 Participation

5.6.1 Equity

Equity in terms of gender and ethnicity was not reported as an issue of concern by the majority of respondents on the Wild Coast, as gender balance is catered to in the fishing tradition and community organisational structures such as cooperatives (Section 4.3.5.1). According to the fishing tradition, women harvest shellfish and rock lobsters, whereas men harvest mainly finfish. One respondent viewed this fishing tradition as a form of gender discrimination. This viewpoint was also confirmed by the literature, which noted this tradition as depriving women of economic opportunities worldwide (Cele, 2020). Gender-specific category in fishing has resulted to structural economic opportunities in favour of men, as shellfish carry low economic value (Sulu, Eriksson, Schwarz, Andrew, Orirana, Sukulu, Oeta, Harohau, Sibiti, Toritela and Beara, 2015).

FAO (2016) recognises that there should be a gender implementation guide to support gender equity in SSF. Responding to the gender issue, Ghana, for example, did an assessment of gender disparities and noted that a gender-inclusive policy is needed to achieve gender equity in co-management (Amadu, Armah, Aheto, Adongo, Ekumah and Salifu, 2023). Amadu et al. (2023: 30) listed recommendations that could help achieve gender equity as follows: (i) enhancing women's capabilities; (ii) eliminating gender norms and other barriers that inhibit participatory decision-making and fisheries management as co-management is being formally adopted and (iii) developing legislative frameworks to deal with all forms of gender-based discriminations in the SSF sector. These recommendations can be tested in South Africa for co-management.

5.6.2 Community Participation

Respondents were nearly equally divided into those who testified that there was adequate government effort to involve the local communities in decision-making and those who denied such effort (Section 4.3.5.2). Further research to determine the correct answer in this regard was recommended by the researcher because the present study could not resolve this question.

5.7 Empowerment

Empowerment is sometimes called capacity building and refers to education and training, where local leaders are provided with the required skills for the new management role (Quimby and Levine, 2018). Discussion of empowerment is discussed below.

5.7.1 Capacity Building

The responses from this study supported the capacitation of communities through training (Section 4.3.6.3). Additionally, the need to incentivise them to manage their natural resources well was highlighted. This is in line with findings by Brown, Staples and Funge-Smith (2005), who noted that communities should be able to form their organisational structures which can question government policies. The rules of community organisational structure should be subject to the country's legislation. The government should listen and be accessible to the communities. For empowerment, communities should be involved through participatory approaches, where issues of concern can be identified to formulate plans and make decisions (Brown, Staples and Funge-Smith, 2005). According to Brown, Staples and Funge-Smith (2005), in a situation where communities are entirely dependent on fishing for livelihoods, communities can be empowered to understand their situation to come up with alternatives to initiate preparatory actions to address their challenge rather than having the government enforce conservation measures for the management of fisheries. In every empowerment endeavour, the improvement of human well-being should always be a priority before embarking on improving ecological well-being (Brown, Staples and Funge-Smith, 2005).

5.8 Challenges

The co-management of SSF has yielded mixed results in different countries and it was important to hear the perceptions of different stakeholders on the Wild Coast. Some challenges are discussed below.

5.8.1 Dichotomy in the Regulation of Natural Resources

Dichotomy in the regulation of natural resources was an important point raised in this study, where competing interests of the communities on the use of natural resources in Pondoland on the Wild Coast were raised (Section 4.3.7.1). These interests are related to fishing for rural livelihoods and the MPA. There appeared to be an unresolved issue for the communities whose livelihoods are dependent on fishing and were living adjacent to the MPA, where they could only fish in the MPA using their fishing rights. This viewpoint highlighted the need for the ministry to be careful of the competing interests when managing natural resources.

5.8.2 Power Dynamics

Power dynamics that exist between the government and other stakeholders were considered as an issue of concern in this study (Section 4.3.7.1). The supreme power of the government would not change, and the incorporation of the communities' views on the final decision-making was questionable, according to the participants of the study. In the global literature, in Bangladesh, for example, co-management managed to equalise power asymmetry among stakeholders, thereby ensuring the sustainability of the hilsa[1] fishery (Mozumder, Pyhälä, Wahab, Sarkki, Schneider, and Islam, 2020). According to Mozumder et al. (2020), the term "power" is understood as an opportunity to participate in and influence decision-making in fisheries resources and power relationships are embedded in SSF, where power dynamics can influence linkages between the desired outcomes and co-management of SSF. Since power can be constructive, disruptive and corruptive and serve special interest (Jentoft, 2007), Mozumder et al. (2020) recommended that EAF should be considered in the management of fisheries to help gain political and stakeholders' buy-in and strengthen linkages among different stakeholders. This viewpoint can be relevant for South Africa, where trust between government and communities was said to be broken.

5.8.3 Inability to Combat IUU Fishing

IUU fishing was mentioned by respondents of this study as an issue of concern (see Section 4.3.7.4). The participants' view was that community involvement in law enforcement can significantly reduce IUU fishing on the Wild Coast. This viewpoint was also in line with the global literature, for example, Mozumder, Uddin, Schneider, Deb, Hasan, Saif, and Nur (2023) noted that IIU fishing can be eliminated by having government departments and non-profit

[1] A local type of herring/shad fish in the region

organisations work with the communities for building resilience, thereby improving the communities' lives and management of the resources. Unresolved IUU fishing issues can collapse fisheries stocks, thereby negatively impacting the economy and the livelihoods of the local communities (Temple, Skerritt, Howarth, Pearce and Mangi, 2022).

5.9 Factors Affecting the Perception of Co-management

Although stakeholders can have a common understanding that co-management is about forming partnerships, their perceptions on how to achieve that partnership can vary (Hara and Nielsen, 2003). Government, for instance, may still consider co-management as a strategy to achieve conservation goals (Hara and Nielsen, 2003). If co-management is government-driven, it will most likely embrace a conservation strategy rather than prioritising the needs of the resource users. The concern over the danger of government supremacy was evidenced by the responses received from this study, indicating the government's failure to consult communities (though this was debatable) and the questionable extent to which communities' inputs were being incorporated into the decision-making. The government-led co-management approach is likely to favour top-down management.

Overall, this chapter discussed interview responses in relation to the global literature. Stories of successes and failures were noted, which would form the basis for recommendations for Chapter 6.

CHAPTER 6
Conclusions and Contributions

6.1 Introduction

This research explored perceptions of co-management on SSF from various stakeholders and factors that influence those perceptions. Stakeholders' perceptions and knowledge are keys to effective natural resource management (Bodin and Crona, 2009). Co-management offers a transdisciplinary and inclusive approach to fisheries management through collaboration, adaptability and coordination of science, policy and stakeholders, which can result in the successful management of natural resources (Obregón et al., 2020). The success of co-management hinges on the sharing of the same perceptions by the stakeholders. Conversely, different perceptions can undermine co-management partnerships (Obregón et al., 2020).

This study was undertaken to get stakeholders' perspectives on co-management and the factors that influence those perspectives, and make recommendations for managing SSF resources. The findings are discussed, alinged with the objectives of the study.

6.2 Key Findings

6.2.1 Understanding Stakeholders' Perceptions

All respondents shared a common understanding of the definition of the term "co-management" that it entailed forming partnerships among different stakeholders for the management of SSF. Every stakeholder would recommend co-management of SSF on the Wild Coast. This basic understanding was crucial as it could be used to start co-management. In the co-management of SSF, the protection of fish from declining is the overriding stakeholders' common interest (Horowitz, Pressey, Gurney, Wenger and Pahang , 2018). Every stakeholder's effort will be to find a way to manage fisheries resources successfully and eliminate IUU fishing. The common perception of different stakeholders to co-manage a resource can lead to a common vision in which trust and relationships can be built (Wondolleck and Yaffee, 2000). Although forming a partnership for the management of the resource can be a starting point, the shared perceptions of these stakeholders are even more important (Wondolleck and Yaffee, 2000).

However, different opinions among stakeholders existed for the Wild Coast, as the following notes were made:

i) Different opinions on the benefits of co-management on SSF.
ii) Different perceptions on whether the government should be the key stakeholder or not.
iii) Different opinions on whether the government's effort to involve the local communities in decision-making was adequate or not, where the stakeholders were equally divided.
iv) Gender equity, where gender-specific fishing inshore and offshore was interpreted as a form of gender discrimination, while others perceived that that was well addressed.
v) Diversity of ethnicity was reported by some respondents, whereas others felt that this required more attention.

If co-management were to be considered and implemented, the overlaps of stakeholders' perceptions should be used as collaboration points, whereas different perceptions should be addressed (Bowman, Mangi and Oxford, 2021).

6.2.2 Factors That Influence the Stakeholders' Perceptions of Co-management

Despite the common understanding of the term 'co-management' that it involves partnership among different stakeholders, the processes on how to achieve partnership and objectives can vary among stakeholders (Berkes et al., 2001). At the onset of co-management, there should be clear objectives, roles and responsibilities of the different stakeholders on how to achieve these. In this study, similarities and differences in stakeholders' perceptions were noted, which could affect the co-management of SSF in a positive or negative way.

Similarities and differences in the perceptions should be understood from the start of co-management (Bowman, Mangi and Oxford, 2021). This calls for creating a shared understanding of co-management, whose lessons can also be learnt from the experiences of other countries. In Vietnam, for example, the local communities were involved in decision-making and taking responsibility in the management of the resources (Takahashi and Duijn, 2012). FAO was an implementing agent for this initiative, which, according to Takahashi and Duijn (2012), a shared understanding was created by implementing five stages: (i) preparatory stage, which entailed conducting surveys to understand socio-economic and fisheries situation. Included in this stage was an assessment of co-management feasibility. Collecting these data fostered a common understanding of co-management. (ii) Inception stage, which focused on

establishing and strengthening fishers associations and other partners in co-management. At this stage, fishers were mobilised to enhance their capacity and networks with other stakeholder groups. The stage ended with the establishment of formal fisheries associations. (iii) The planning stage involved the formulation of fisheries management plans, with the demarcation of fisheries associations, zoning plans, and resource management regulations. (iv) The implementation stage, involved registering resource users and their facilities, such as fishing gear. The collection of membership fees, fishing arrangements, habitat protection, coastal patrolling, and business activity operations by fisheries associations also formed part of this stage. (v) The monitoring and evaluation stage should be done in parallel with the implementation stage. This stage is about measuring the progress towards the intended goal, where indicators of the process (e.g. fishing rights allocated and resource management regulation developed), inputs (e.g. reduced number of operational vessels and reduced IUU fishing) and outputs (e.g. recovery of fish stocks and conservation of critical habitat) were considered.

Takahashi and Duijn (2012) highlighted the lack of institutional support and streamlined legal system as hinderances in operationalising and sustaining fisheries resource management. Nielsen et al. (2004) also noted that empowerment is needed to bring an equal level between government and communities in co-management, while Cavallé, Said and O'Riordan (2020) documented that there was a need for a genuine understanding of the perceptions of all stakeholders, where government could embrace political and legal framework to protect informal arrangements organised by the communities.

6.2.3 Recommendations

Different benefits mentioned by the respondents of this study could suggest different objectives of each stakeholder associated with co-management. Since co-management can be started for different objectives, every stakeholder affected by the decision should participate in the development of the objective (Hauck and Snowman, 2001). Within co-management, the government cannot meet all the basic demands of community livelihoods and should consider an integrated resource management strategy, which can be achieved by the leading government agent forming linkages with other government departments (Hauck and Snowman, 2001). Additionally, embracing a sustainable livelihood approach can help tackle many social challenges, such as illiteracy, unemployment and poverty (Serrat, 2017), thereby contributing to addressing challenges associated with fishing access rights (Sawman, 2006). This can also

be achieved by getting different government departments to work together to solve social issues (Sawman, 2006).

If co-management was to be implemented in the Wild Coast, the communication and language arrangements must be considered, as the communities would prefer convening meetings using their own native language. The issue of language in the co-management of natural resources was complex (Stevenson, 2006). However, there was ongoing research on language translation software to resolve language issues (Tyagi and Bhushan, 2023), which could prove helpful in the Wild Coast management of fishery resources. Further research on language issues on the Wild Coast can yield useful information on how to deal with all the aspects associated with language adequately.

Investing in organisational capacity could be considered for this region. FAO (2015) recognises that building of organisational capacity among fisheries stakeholders at local and regional level as an important consideration for the management of fisheries. For instance, the fisheries scientists can be capacitated to provide scientific advice to the fisheries management, while communities' practical skills on improved fishing techniques can be improved (FAO, 2015).

The information above highlights an important consideration for the stakeholders to note if co-management was to be implemented. The study revealed that co-management can be considered as a management approach for the Wild Coast fisheries, as information on the stakeholders' perceptions of co-management could be used to develop co-management approaches.

6.3 Limitations of the Study

This study focused on the former Republic of Transkei and did not cover the entire South Africa. Participants were limited to the stakeholders who had previously participated in the stakeholders' workshops on SSF. Future research on co-management of SSF could be expanded to quantitative survey, looking at population representation and also include more stakeholders. Studies could also look at other geographical areas and incorporate other fisheries as the current studies focused on subsistence fishermen and fisherwomen collecting fish for their household consumption. Not all of the study sites originally planned were sampled, as Dwesa-Cwebe Nature Reserve and their communities were excluded. The stakeholders'

perceptions of the adequacy of the government's effort to involve local communities in decision-making were not resolved and would require future research.

6.4 Contribution of the Study

This study was undertaken to find out whether the information available from the literature conformed with the research interview data. The findings indicated that a lot of data confirmed with the information available in the literature. The contribution of the study can be summarised as follows:

6.4.1 Knowledge

Knowledge of the management of fisheries resources was generated. The study revealed that co-management of SSF on the Wild Coast was a possible management approach. When starting co-management, language would be an important consideration when interacting with the local communities. Although face-to-face was considered the most effective way of stakeholder engagement, the use of virtual stakeholder engagement should also be considered as other people would give more information on this platform. Communities' involvement in the management of fisheries resources could help reduce IUU fishing, thereby promoting the sustainability of the resource. The study revealed that community empowerment was necessary to capacitate the communities so as to participate meaningfully in the management of resources.

6.4.2 Policy

The study could serve as a guideline to stakeholders for the development of sustainable management policies for SSF and the incorporation of co-management principles in these fisheries. There could be strategies and approaches to consider for successful co-management. For example, embracing a sustainable livelihood approach would require different government departments to work together to address social issues. Achieving gender equity requires strategies that empower women by adopting FAO (2016) guidelines on gender equity and recommendations by Amadu et al. (2023) in developing policy on gender equity can be adopted.

Since co-management is a long-term process (Cavallé, Said and O'Riordan, 2020), this study marks the beginning of a long, but potentially engaging and valuable journey towards improved management of fishery resources.

References

Abdullah, N.M.R. and Pomeroy, R.S., 1998. Transection costs and fisheries co-management. *Marine Resource Economics*, 13, pp.103–103.

Aguión, A., Ojea, E., García-Flórez, L., Cruz, T., Garmendia, J. M., Davoult, D., Queiroga, H., Rivera, A., Acuña-Fernández, J. L. and Macho, G. 2022. Establishing a governance threshold in small-scale fisheries to achieve sustainability. *Ambio*, *51*(3), pp. 652–665. https://doi.org/10.1007/s13280-021-01606-x.

Ainsworth, G.B., Pita, P., Pita, C., Roumbedakis, K., Pierce, G.J., Longo, C., Verutes, G., Fonseca, T., Castelo, D., Montero-Castaño, C., Valeiras, J., Rocha, F., García-de-la-Fuente, L., Acuña, J.L., Del Pino Fernández Rueda, M., Fabregat, A.G., Martín-Aristín, A., Villasante, S., 2023. Identifying sustainability priorities among value chain actors in artisanal common octopus fisheries. *Reviews in Fish Biology and Fisheries*. 4, pp. 1-30. doi: 10.1007/s11160-023-09768-5.

Albornoz, C. and Glückler, J., 2020. Co-management of small-scale fisheries in Chile from a network governance perspective. *Environments*, 7(12), pp. 1–20. doi:10.3390/environments7120104.

Allmendinger, P., 2002. Towards a post-positivist typology of planning theory. *Planning Theory,* 18(3), pp. 91–97.

Alpízar, M.A.Q. 2006. Participation and fisheries management in Costa Rica: From theory to practice. *Marine Policy*, 30, pp. 641–650.

Amadu, I., Armah, F., Aheto, D., Adongo, C., Ekumah, B., Salifu, I., 2023. Assessing gender disparities in livelihood resilience of small-scale fisherfolk in selected coastal communities in Ghana. [Online] Available at: <https://www.researchgate.net/publication/374843235> [Accessed 26 November 2023].

Ampofo-Anti, O.Y., 2018. Court gives community right to fish without permit. *Groundup*. [Online] Available at: <https://www.groundup.org.za/article/court-gives-community-right-fish- without-permit> [Accessed 6 June 2022].

Andrew, N.L., Béné, C., Hall, S.J., Allison, E.H., Heck, S. and Ratner, B.D., 2007. Diagnosis and management of small-scale fisheries in developing countries. *Fish and Fisheries*, 8(3), pp. 227–240. doi: 10.1111/j.1467-2679.2007.00252.x.

APFIC/FAO, 2005. APFIC Regional Workshop on "Mainstreaming fisheries co-management" Siem Reap, Cambodia, 9-12 August 2005, RAP Publication 2005/23, pp. 1–48.

Barnes-Mauthe, M., Oleson, K.L. and Zafindrasilivonona, B., 2013. The total economic value of small-scale fisheries with a characterization of post-landing trends: An application in Madagascar with global relevance. *Fisheries Research*, 147, pp. 175–185.

Basurto, X, Siegelman, B., Navarro, M.I., Mancha-Cisneros, M.M., Burgos, A., Kraan, M., Pauwelussen, A. and Toonen, H., 2023. Global patterns of management and governance of small-scale fisheries: contributions towards the implementation of SSF Guidelines. In FAO, Duke University and WorldFish, 2023. *Illuminating Hidden Harvest: the contribution of small-scale fisheries to sustainable development*. Rome, FAO; Durham, USA, Duke University; Penang, Malaysia, WorldFish. pp. 203–210.

Basurto, X., Virdin, J., Smith, H. and Juskus, R., 2017. Strengthening Governance of Small-Scale Fisheries: An Initial Assessment of Theory and Practice. Oak Foundation. [Online <www.oakfnd.org/environment> [Accessed 2 June 2022].

Béné, C., Belal, E., Baba, M.O., Ovie, S., Raji, A., Malasha, I., Njaya, F., Andi, M.N., Russell, A. and Neiland, A. 2009. Power, struggle, dispute and alliance over local resources: analysing 'democratic' decentralization of natural resources through the lenses of Africa Inland Fisheries. *World Development*, 37, pp. 1935–1950.

Bennie, A., 2011. Questions for labour on land, livelihoods and jobs: A case study of the proposed mining at Xolobeni, Wild Coast. *South African Review of Sociology*. 42(3), pp. 41–59.

Berkes, F., 2003. Alternatives to conventional management: Lessons from small-scale fisheries. *Environments*, 31(1), pp. 5–19.

Berkes, F., 2009. Evolution of co-management: Role of knowledge generation, bridging organisations and social learning. *Journal of Environmental Management* 90, pp. 1692–1702.

Berkes, F., Mahon, R., McConney, P., Pollnac and Pomeroy, 2001. Managing small-scale fisheries: Alternative directions and methods, Ottawa, International Development Centre.

Bertheussen, B.A., Vassdal, T., 2023. Appropriation of economic values in a rights-based fishery. *Ocean and Coastal Management*, 237, pp. 106537, https://doi.org/10.1016/j.ocecoaman.2023.106537.

Bodin, O., and Crona, B. I., 2009. The role of social networks in natural resource governance: what relational patterns make a difference? *Global Environmental Change* 19, pp. 366–374. doi: 10.1016/j.gloenvcha.2009.05.002.

Bowman, C., Mangi, S. and Oxenford, H., 2021. Using stakeholder's perspectives of 'Managed Access' to guide management efforts in small-scale fisheries. *Environmental Conservation*, 48(2), pp. 100–109. Doi:10.1017/S0376892921000047.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp.77–101. https://doi.org/10.1191/1478088706qp063oa.

Braun, V. and Clarke, V., 2012. Thematic analysis edited by H. Cooper, APA Handbook of Research Methods in Psychology: Vol 2 pp. 57–71.

Brewer, T.D., and Moon, K., 2015. Towards a functional typology of small-scale fisheries co-management informed by stakeholder perceptions: A coral reef case study. *Marine Policy*, 51, pp. 48–56.

Brown, Staples and Funge-Smith, 2005. Mainstreaming fisheries co-management in the Asia-Pacific. Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Pacific, Bangkok. pp. 1–4.

Butler, J.R.A., Tawake, A., Skewes, T., Tawake, L. and McGrath, V., 2012. Integrating traditional ecological knowledge and fisheries management in the Torres Strait, Australia: The catalytic role of turtles and dugong as cultural key species. *Ecology and Society*, 17(4), pp. 1–19. http://www.jstor.org/stable/26269219.

Byrd, K.A., Pincus, L., Pasqualino, M.M., Muzofa, F. and Cole, S.M., 2021. Dried small scale fish provide nutrient densities important for the first 1000 days. *Maternal and Child Nutrition*, 17(4), e13192. https://doi:101111/mcn.13192.

Castillo, S. and Fujiwara, L., 2021. Assessment of a small-scale fishery: Lane snapper (*Lutjanus synagris*) using a length metric method. *PLoS ONE*, 16(2), e0233479. https://doi.org/10.1371/journal.pone.0233479.

Cavallé, M., Said, A., O'Riordan, B., 2020. Co-Management for small-scale fisheries: Principles, practices and challenges". Published by Low Impact Fishers of Europe. [Online] Available at < https://lifeplatform.eu/wp-content/uploads/2021/02/LIFE-Co-Management-for-SSF-compressed.pdf > [Accessed 25 October 2023].

Cele, N., 2020. Are you a fisher or mussel collector?: Examining gendered identity markers in the small-scale fishing industry. *Agenda*, 34(1), pp. 141–150.

Cheteni, P. and Umejesi, I., 2023. Evaluating the sustainability of agritourism in the wild coast region of South Africa, *Cogent Economics and Finance*, 11(1), pp. 2163542. doi: 10.1080/23322039.2022.2163542.

Cinner, J.E., MacNeil, M.A., Basurto, X. and Gelcich, S., 2013. Looking beyond the fisheries crisis: Cumulative learning from small-scale fisheries through diagnostic approaches. *Global Environmental Change*, 23(6), pp. 1359–1365.

Cochrane, K.L., 2002. A fishery manager's guidebook. Management measures and their application. FAO Fisheries Technical Paper No. 424. Food and Agriculture Organisation of the United Nations, Rome.

Cochrane, K.L., 2021. Reconciling sustainability, economic efficiency and equity in marine fisheries: Has there been progress in the last 20 years? *Fish and Fisheries*, 22(2), pp. 298–323.

Cochrane, K.L., Augustyn, C.J., Cockcroft, A.C., David, J.H.M., Griffiths, M.H., Groeneveld, J.C., Lipińnski, M.R., Smale, M.J., Smith, C.D., and Tarr, R.J.Q., 2004. An ecosystem approach to fisheries in the Southern Benguela context. *African Journal of Marine Science*, 26(1), pp. 9–35.

Colvin, R.M., Witt, G.B. and Lacey, J., 2020. Power, perspective, and privilege: The challenge of translating stakeholder theory from business management to environmental and natural resource management. *Journal of Environmental Management*, 271, pp. 110974.

Costello, C., Ovando, D., Hilborn, R., Gaines, S.D., Deschenes, O. and Lester, S.E., 2012. Status and solutions for the world's unassessed fisheries. *Science (New York, N.Y.)*, 338(6106), pp. 517–520. doi: 10.1126/science.1223389.

Creswell, J. W., 2014. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications, Los Angeles.

Cundy, A. B., Bardos, R. P., Church, A., Puschenreiter, M., Friesl-Hanl, W., Müller, I., Neu, S., Mench, M., Witters, N. and Vangronsveld, J., 2013. Developing principles of sustainability and stakeholder engagement for "gentle" remediation approaches: The European context. *Journal of Environmental Management*, 129, pp.283–29.

d'Armengol, L., Castillo, M.P., Isabel Ruiz-Mallén, I. and Corbera, E., 2018. A systematic review of co-managed small-scale fisheries: Social diversity and adaptive management improve outcomes. *Global Environmental Change*, 52, pp. 212–225. https://doi.org/10.1016/j.gloenvcha.2018.07.009.

DAFF (Department of Agriculture, Forestry and Fisheries), 2012. *Policy for the small-scale fisheries sector in South Africa*. Pretoria, DAFF.

de Oliveira, E.R.C., Otsuki, K., and Mubai, M.E., 2021. Tackling challenges for co-management of natural resources: the community council in Limpopo National Park, Mozambique. *Development in Practice*, 31(5), pp. 707–713. doi: 10.1080/09614524.2021.1898547.

De Villiers, D. and Costello, J., 2006. Mkambati and the Wild Coast: South Africa and Pondoland's Unique Heritage. South Africa, Wilderness Safaris, pp. 1–216.

Degnbol, P., Gislason, H., Hanna, S., Jentoft, S., Nielsen, J.R., Sverdrup-Jensen, S. and Wilson, D.C., 2006. Painting the floor with a hammer: technical fixes in fisheries management. *Marine Policy*, 30(5), pp. 534–543.

Evans, L., Cherrett, N. and Pemsl, D., 2011. Assessing the impact of fisheries co-management interventions in developing countries: A meta-analysis. *Journal of Environmental Management*, 92(8), pp. 1938–1949. doi.org/10.1016/j.jenvman.2011.03.010.

FAO, 1995. Code of Conduct for Responsible Fisheries. Rome: Food and Agriculture Organisation, pp. 1–41. [Online] Available at: <https://www.fao.org/3/v9878e/V9878E.pdf>, [Accessed 10 March 2022].

FAO., 2003. Fisheries management. The ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries, 4(Suppl. 2), pp. 1–112.

FAO, 2005. Increasing the contribution of small-scale fisheries to poverty alleviation and food security. FAO Technical Guidelines for Responsible Fisheries No. 10. Rome, Italy.

FAO, 2015. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. pp. 1–18. [Online] Available at <http://www.fao.org/3/a-i4356en.pdf> [Accessed 2 February 2023].

FAO, 2016. Towards gender-equitable small-scale fisheries: Proceedings of the "Expert workshop on gender-equitable small-scale fisheries in the context of the implementation of the SSF Guidelines", 28–30 November 2016. pp. 1–61, Rome, Italy.

FAO, 2020. The State of World Fisheries and Aquaculture. Sustainability in action, Rome, Italy. [Online] Available at <https://doi.org/10.4060/ca9229en>. [Accessed 25 March 2023].

FAO. 2021. Small-scale fisheries and the human right to adequate food – Making the connection: exploring synergies in the implementation of the SSF Guidelines and the Right to Food Guidelines. Rome. pp. 1–35. https://doi.org/10.4060/cb4939en.

FAO, 2022. International year of artisanal fisheries and aquaculture. [Online] Available at < https://www.fao.org/3/cb4875en/cb4875en.pdf> [Accessed 25 November 2023].

Fontana, A. and Frey, J. H., 2000. The Interview: From structured questions to negotiated text. *Handbook of qualitative research,* 2(6), pp. 645–672.

Franco-Meléndez, M., Tam, J., van Putten, I. and Cubillos, L.A., 2021. Integrating human and ecological dimensions: The importance of stakeholders' perceptions and participation on the performance of fisheries co-management in Chile. *PLoS ONE*, 16(8), e0254727. doi: 10.1371/journal.pone.0254727.

Fratsea, L.M. and Papadopoulos, A.G. 2022. Fisheries Co-Management in the Age of the commons: Social capital, conflict, and social challenges in the Aegean Sea. *Sustainability*, 14, pp. 14578. https://doi.org/10.3390/su142114578.

Freed, S., Dujon, V., Granek, E.F., Mouhhidine, J., 2016. Enhancing small-scale fisheries management through community engagement and multi-community partnerships: Comoros case study. *Marine Policy*, 63, pp. 81–91. https://doi.org/10.1016/j.marpol.2015.10.004.

Freitas, C.T., Lopes, P.F.M., Campos-Silva, J.V., Noble, M.M., Dyball, R. and Peres, C.A., 2020. Co-management of culturally important species: A tool to promote biodiversity conservation and human well-being. *People and Nature*, 2(1), pp. 61–81.

Freitas, C.E.C., Rivas, A.A.F. and Kahn, R., 2005. Self-regulation strategies and co-management of fisheries resources in the Amazon basin. *Ecosystems and Sustainable Development*, 511, pp. 511–516.

Galletta, A., 2013. Mastering the semi-structured interview and beyond: From research design to analysis and publication (Vol. 18). NYU press. pp. 1–245.

Gammage, L.C. and Jarre, A., 2020. Using Structured Decision-Making Tools With marginalised Fishers to Promote System-Based Fisheries Management Approaches in South Africa. *Frontiers in Marine Science*, 7, pp. 477. doi: 10.3389/fmars.2020.00477.

Gianelli, I., Martínez, G., and Defeo, O., 2015. An ecosystem approach to small-scale co-managed fisheries: The yellowclam fishery in Uruguay. *Marine Policy*, 62, pp. 196–202.

Góes, H.A.D.A., Reis, G.G. and Abib, G., 2021. When stakeholder theory meets justification theory: An intersection proposal. *Cadernos EBAPE. BR*, 19(4), pp. 901–917. https://doi.org/10.1590/1679-395120200179.

Go´mez-Andu´ jar N.X., Gerkey, D., Conway, F. and Watson, J.R., 2022. Social cohesion and self-governance arrangements among small-scale fisheries in Puerto Rico. *Frontiers in Marine Science* 9, pp.966309. doi: 10.3389/fmars.2022.966309.

Gutiérrez, N., Hilborn, R. and Defeo, O. 2011. Leadership, social capital and incentives promote successful fisheries. *Nature*, 470, pp. 386–389. https://doi.org/10.1038/nature09689.

Gutiérrez, N.L., Ray, H., and Omar, D., 2011. Leadership, social capital and incentives promote successful fisheries. *Nature* (London) 470(7334), pp. 386–389.

Guyot, S. and Dellier, J., 2009. Rethinking the Wild Coast, South Africa. Saarbrucken: VDM Verlag.

Hannesson, R., 2004. The privatization of the ocean. Boston, Mass: MITT Press.

Hara, M., 2000. Fisheries co-management; what and whose agenda? (Paper presented at the WARFSA/WaterNet Symposium: Sustainable Use of Water Resources, Maputo, 1-2 November 2000).

Hara, M., 2003. Co-management of natural resources: Theory and the attendant assumptions, *In* Hauck, M. and Sawman, M (eds), Waves of change: Coastal and fisheries co-management in South Africa, Cape Town, University of Cape Town Press, pp. 13–36.

Hara, M. and Nielsen, J.R., 2003. Experiences with fisheries co-management in Africa *In* Wilson, D.C., Nielsen, J.R. and Degbol, P. (eds), The fisheries co-management experience: Accomplishments, challenges and prospects. pp. 81–97. Dordrecht, Kluwer Academic Publishers.

Hardin, G., 1968. The Tragedy of the commons. *Science*, 162 no. 3859, pp. 1243–48. http://www.jstor.org/stable/1724745.

Hauck, M., and Sowman, M., 2001. Coastal and fisheries co-management in South Africa: An overview and analysis. *Marine Policy*, 25, pp. 173–185.

Haywood, L.K., Funke, N., Audouin, M., Musvoto, C. and Nahman, A. 2019. The Sustainable Development Goals in South Africa: Investigating the need for multi-stakeholder partnerships. *Development Southern Africa*, 36(5), pp. 555–569. doi: 10.1080/0376835X.2018.1461611.

Herrón, P., Castellanos-Galindo, G.A., Stäbler M., Díaz, J.M. and Wolff M., 2019. Toward Ecosystem-Based Assessment and Management of Small-Scale and Multi-Gear Fisheries: Insights From the Tropical Eastern Pacific. *Frontiers in Marine Science* 6, pp. 127. doi: 10.3389/fmars.2019.00127.

Hilborn, R., Orensanz, J.M. and Parma, A.M. 2005. Institutions, incentives and the future of fisheries. *Philosophical Transactions of the Royal Society London. Series B, Biological Sciences*, 360(1453), pp. 47–57.

Hilborn, R., Ovando, D., 2014. Reflections on the success of traditional fisheries management. *ICES Journal of Marine Science*, 71(5), pp. 1040–1046. https://doi.org/10.1093/icesjms/fsu034.

Ho, N.T.T., Ross, H. and Coutts, J., 2016. Can't three tango? The role of donor-funded projects in developing fisheries co-management in the Tam Giang Lagoon system, Vietnam. *Ocean & Coastal Management*, 121, pp. 97–106.

Horowitz, J., Pressey, R.L., Gurney, G.G., Wenger, A.S and Pahang, K.A. 2018. Investigating stakeholder perceptions of fish decline: Making sense of multiple mental models. *Sustainability*, 10, pp. 1222, doi:10.3390/su10041222.

House, J., Kleiber, Steenbergen, D.J. and Stacey, N. 2023. Participatory monitoring in community-based fisheries management through a gender lens. *Ambio*, 52, pp. 300–318. doi.org/10.1007/s13280-022-01783-3.

Hutton, T. and Pitcher, T.J., 1998. Current directions in fisheries management policy: A perspective on co-management and its application to South African fisheries. *South African Journal of Marine Science*, 19, pp. 471–486.

Ignatius, S., and Haapasaari, P., 2018. Justification theory for the analysis of the socio-cultural value of fish and fisheries: The case of Baltic salmon. *Marine Policy*, 88, pp. 167–173.

Isaacs, M., 2006. Small-scale fisheries reform: Expectations, hopes and dreams of "a better life for all". *Marine Policy*, 30, pp. 51–59.

Isaacs, M. and Witbooi, E. 2019. Fisheries crime, human rights and small-scale fisheries in South Africa: A case of bigger fish to fry. *Marine Policy*, 105, pp. 158–168.

Isaacs, M., Hara, M. M., Dennis, T. L., Rouhani, Q. A., Mannarino, C., Jaffer, N. 2022. *A Situational Analysis of Small-Scale Fisheries in South Africa: From Vulnerability to Viability*. V2V Working Paper 2022–9. V2V Global Partnership, University of Waterloo, Canada.

James, R., B. Gibbs, L. Whitford, C. Leisher, R. Konia, and Butt, N., 2021. Conservation and Natural Resource Management: Where are all the women? *Oryx*, 55(6), pp. 860–867. doi:10.1017/S0030605320001349.

Jentoft, S., 1989. Fisheries Co-Management: delegating government responsibility to fishermen's organisations. *Marine Policy*, 13(2), pp. 137–154.

Jentoft, S., 2003. Co-management – The Way Forward, in Wilson D,C., Nielsen, J.R., and Degnbol, P. (eds), *The Fisheries Co-management Experience: Accomplishments, Challenges and Prospects*, Dordrecht: Kluwer Academic Publishers, pp. 2–14.

Jentoft, S., 2007. In the power of power. The understated aspect of fisheries and coastal management. *Human Organization*, 66(4), pp. 426–437.

Jentoft, S. and Bavinck, M., 2014. Interactive governance for sustainable fisheries: Dealing with legal pluralism. *Current Opinion in Environmental Sustainability*, 11, pp. 71–77.

Jentoft, S., Bavinck, M., Johnson, D.S. and Thomson, K.T., 2009. Fisheries co-management and legal pluralism: How an analytical problem becomes an institutional one. *Human Organizathion*, 68(1), pp. 27–38.

Jentoft, S., McCay, B.J., and Wilson, D.C., 1998. Social theory and fisheries co-management. *Marine Policy*, 22(4–5), pp. 423–436.

Jentoft, S., Chuenpagdee, R., Barragán-Paladines, M.J. and Franz, N. eds., 2017. The small-scale fisheries guidelines: global implementation, Vol. 14, Amsterdam: Springer.

Jooste, C.M., Oliver, J., Emami-Khoyi, A., and Teske, P.R., 2018. Is the Wild Coast in the Eastern South Africa a distinct marine bioregion? *Helgoland Marine Research*, 72(6), pp. 1–7.

Kaminski, A., 2012. Social capital and fisheries co-management in South Africa: The East Coast Rock Lobster fishery in Tshani Mankozi, Wild Coast, Eastern Cape. Unpublished Master of Developmental Study Dissertation, Rhodes University, Makhanda, pp. 1–196.

Karr, K.A., Fujita, R., Carcamo, R., Epstein, L., Foley, J.R., Fraire-Cervantes, J.A., Gongora, M., Gonzalez-Cuellar, O.T., Granados-Dieseldorff, P., Guirjen, J., Weaver, A.H., Licón-González, H., Litsinger, E., Maaz, J., Mancao, R., Miller, V., Ortiz-Rodriguez, R., Plomozo-Lugo, T., Rodriguez-Harker, L.F., Rodríguez-Van Dyck, S., Stavrinaky, A., Villanueva-Aznar, C., Wade, B., Whittle, D. and Kritzer, J.P. 2017. Integrating Science-Based Co-management, Partnerships, Participatory Processes and Stewardship Incentives to Improve the Performance of Small-Scale Fisheries. *Frontiers in Marine Science*, 4, pp. 345.

Khan, A.S., Mikkola, H. and Brummett, R., 2004. Feasibility of fisheries co-management in Africa. Naga, *WorldFish Center*, 27(1-2), pp. 60–64.

Korstjens, I., and Moser, A., 2018. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24(1), pp. 120–124.

Kosamu, I.B.M., 2015. Conditions for sustainability of small-scale fiheries in developing countries. *Fisheries Research*, 161, pp. 365–373.

Kuperan, N.M.R.A.K. and Pomeroy, R.S. 1998. Transaction costs and fisheries co-management. *Marine Resource Economics*, 13, pp. 103–114.

Kushardanto, H., Jakub, R., Suherfian, W., Subarno, T., Ansyori, A.I., Sara, L., Alimina, N., Fajriah, Kardini, L.O., de la Rosa, E., Yuliani, A, Medianti, E., Pradana, I., Setiawan, H., Muhammad, Y., Djafar, L.F., Box, S., Cox, C., Campbell, S.J., 2022. Household finances and trust are key determinants of benefits from small-scale fisheries co-management. *Marine Policy*, 145, pp. 105284.

Latip, M., Sharkawi, I., Mohamed, Z. and Kasron, N., 2022. The impact of external stakeholders' pressures on the intention to adopt environmental management practices and the moderating effects of firm size. *Journal of Small Business Strategy*, 32(3), pp. 45–66.

Lidström, S. and Johnson, A., 2020. Ecosystem-based fisheries management: A perspective on the critique and development of the concept. *Fish and Fisheries*, 21(1), pp. 216–222.

Magaldi, D., Berler, M. 2020. Semi-structured interviews. *In*: Zeigler-Hill, V., Shackelford, T.K. (eds) Encyclopedia of personality and individual differences. Springer, Cham. pp. 4825-4830. https://doi.org/10.1007/978-3-319-24612-3_857.

Mack, N., Woodsong, C., MacQueen, K.M., Guest, G., and Namey, E., 2005, *Qualitative Research Methods Research Methods: A Data Collector's Field Guide*, North Carolina: Family Health International.

Mahon, R., McConney, P. and Roy, R.N., 2008. Governing fisheries as complex adaptive systems. *Marine policy*, 32, pp. 104–112. doi: 10.1016/j.marpol.2007.04.011.

Mann, B.Q., McDonald, A.M., Sauer, W.H.H. and Hecht, T., 2003. Evaluation of participation in and management of the Transkei shore linefishery. *African Journal of Marine Science*, 25, pp. 79–97.

Maravelias, C.D., Vasilakopoulos, P. and Kalogirou, S., 2018. Participatory management in a high value small-scale fishery in the Mediterranean Sea. *ICES Journal of Marine Science*, 75(6), pp. 2097–2106. doi.org/10.1093/icesjms/fsy119.

Marín, A. and Berkes, F., 2010. Network approach for understanding small-scale fisheries governance: The case of the Chilean coastal co-management system. *Marine Policy*, 34, 851–858.

Masifundise, 2022. A victory for small-scale fishers and fishing communities of the Wild Coast. Unpublished Article. [Online] Available at <https://www.masifundise.org/a-victory-for-small-scale-fishers-and-fishing-communities-of-the-wild-coast/> [Accessed 5 December 2022].

Mattsson, B.J., Arih, A., Heurich, M., Santi, S. and Štemberk, J., 2019. Evaluating a collaborative decision-analytic approach to inform conservation decision-making in transboundary regions. *Land Use Policy*, 83, pp. 282–296. https://doi.org/10.1016/j.landusepol.2019.01.040.

McCay, B.J., Brandt, S. and Creed, C.F., 2011. Human dimensions of climate change and fisheries in a coupled systems: The Atlantic Surfclam case. *ICES Journal of Marine Science*, 68(6), pp. 1354–1367. https://doi.org/10.1093/icesjms/fsr044.

Mikalsen, K.H. and Jentoft, S., 2001. From user-groups to stakeholders? The public interest in fisheries management. *Marine Policy*, 25(4), pp. 281–292.

Mitchell, S., Andersson, N., 2011. Equity in development and access to health services in the Wild Coast of South Africa: the community view through four linked cross-sectional studies between 1997 and 2007. *BMC Health Services Research*, 11 (Suppl 2), S5, pp. 1–11. https://doi.org/10.1186/1472-6963-11-S2-S5.

Mozumder, M.M.H., Pyhälä, A., Wahab, M.A., Sarkki, S., Schneider, P. and Islam, M.M., 2020. Governance and power dynamics in a small-scale Hilsa shad (*Tenualosa ilisha*) fishery: A case study from Bangladesh. *Sustainability*, 12(14), pp. 5738.

Mozumder, M.M.H., Uddin, M.M., Schneider, P., Deb, D., Hasan, M., Saif, S.B. and Nur, A-A.U., 2023. Governance of illegal, unreported, and unregulated (IUU) fishing in Bangladesh: status, challenges, and potentials. *Frontiers in Marine Science*, 10, pp. 1150213. doi: 10.3389/fmars.2023.1150213.

Muttenzer, F., and Andriamahefazafy, M., 2021. From ritual performers to ocean defenders: fisher migrations, identity narratives and resource access in the Barren Isles, West Madagascar. *African Identities*, 19(3), pp. 375–399. doi: 10.1080/14725843.2021.1937052.

Napier, V.R., Branch, G. and Harris, J.M., 2001. Evaluating conditions for successful co-management of subsistence fisheries in KwaZulu-Natal, South Africa. *Environmental Conservation*, 32(2), pp. 165–177.

Nielsen, J.R., Degnbol, P., Viswanathan, K.K., Ahmed, M., Hara, M. and Abdullah, N.M.R., 2004. Fisheries co-management – an institutional innovation? Lessons from South East Asia and Southern Africa. *Marine Policy*, 28, pp. 151–160.

Nonini, D.M., 2006. Introduction: The global idea of 'the commons'. *Social Analysis* 50(3), pp. 164–177.

Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J., 2017. Thematic analysis: Striving to meet the trustworthiness criteria. International journal of qualitative methods, 16(1), 1609406917733847. https://doi.org/10.1177/1609406917733847.

O'Leary, J. K., Goodman, M., Tuda, A., Machumu, M., and West, L., 2020. Opportunities and challenges in achieving co-management in marine protected areas in East Africa: A comparative case study. *Journal of the Indian Ocean Region*, 16(3), pp. 317–347. https://doi.org/10.1080/19480881.2020.1825201.

Obregón, C., Admiraal, R., van Putten, I., Hughes, M., Tweedley, J.R. and Loneragan, N.R., 2020. Who You Speak to Matters: Information Sharing and the Management of a Small-Scale Fishery. *Frontiers in Marine Science*, 7, pp. 578014. doi: 10.3389/fmars.2020.578014.

Oldekop, J.A., Holmes, G., Harris, W.E. and Evans, K.L., 2016. A global assessment of the social and conservation outcomes of protected areas. *Conservation Biology*, 30(1), pp. 133–141.

Olmos-Vega, F.M., Stalmeijer, R.E., Varpio, L., and Kahlke, R., 2022. A practical guide to reflexivity in qualitative research: AMEE Guide No. 149, *Medical Teacher*, pp. 1–11.

Olsson, P., Folke, C. and Berkes, F. 2004. Adaptive Comanagement for Building Resilience in Social-Ecological Systems. *Environmental Management*, 34(1), pp. 75–90.

Ostrom, E., 1990. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge: Cambridge University Press, United Kingdom.

Ostrom, E., Berger, J., Field, C.B., Norgaard, R.B., and Policansky, D., 1999. Revisiting the commons: Local lessons, global challenges. *Science*, 284, pp. 278–282.

Ouréns, R., Melnychuk, M.C., Crowder, L.B., Gutierrez, N.L., Hilborn, R., Pita, C. and Defeo, O., 2022. Linking small-scale fisheries performance to governance attributes: A quantitative assessment from stakeholders' perceptions in the Americas and Europe. *Marine Policy*, 136, pp. 104876. https://doi.org/10.1016/j.marpol.2021.104876.

Overå, R., 2011. Modernisation Narratives and Small-Scale Fisheries in Ghana and Zambia, *Forum for Development Studies*, 38(3), pp. 321–343, doi: 10.1080/08039410.2011.596569.

Palsson, G., 1989. The art of fishing. MAST. *Maritime Anthropological Studies*, 2, pp. 1–20.

Panhwar, A.H., Ansari, S., and Shah, A.A., 2017. Post-positivism: An effective paradigm for social and educational research. *International Research Journal of Arts and Humanities*, 45(45), pp. 253–260.

Pearse, N., 2019. An Illustration of a deductive pattern matching procedure in qualitative leadership research. *The Electronic Journal of Business Research Methods*, 17(3), pp. 143–154.

Pellowe, K.E. and Leslie, H.M., 2020. The interplay between formal and informal institutions and the potential for co-management in a Maxican small-scale fisheries. *Marine Policy*, 121, pp. 104179. https://doi.org/10.1016/j.marpol.2020.104179.

Phoenix, C., Osborne, N.J., Redshaw, C., Moran, R., Stahl-Timmins, W., Depledge, M.H., Fleming, L.E., Wheeler, B.W., 2013. Paradigmatic approaches to studying environment and human health: (Forgotten) implications for interdisciplinary research. *Environmental Science and Policy*, 25, pp. 218–228.

Pittman, J., Gianelli, I., Trinchín, R., Guti´errez, R., De la Rosa, A., Martínez, G., Masello, A., Defeo, O., 2019. Securing sustainable small-scale fisheries through co-management: the yellow clam fishery in Uruguay. In: Westlund, L., Zelasney, J. (Eds.), Securing sustainable small-scale fisheries: Sharing good practices from around the world. FAO Fisheries and Aquaculture Technical Paper No. 644. Rome, pp. 1–184.

Plummer, R. and Baird, J., 2013. Adaptive co-management for climate change adaptation: Considerations for the Barents region. *Sustainability*, 5, pp. 629–642.

Pomeroy, R.S., and Ahmed, M., 2006. Fisheries and Coastal Resources Co-management in Asia: Selected Results from a Regional Research Project, Monographs, The WorldFish Center, No. 37082, pp. 1–148.

Pomeroy, R.S. and Berkes, F. 1997. Two to tango: the role of government in fisheries co-management, *Marine Policy*, 21(5), pp. 465–480.

Pomeroy, R., Arango, C., Lomboy, C.G., Box, S., 2020. Financial inclusion to build economic resilience in small-scale fisheries. *Marine Policy*, 118, pp. 103982, https://doi.org/10.1016/j.marpol.2020.103982.

Pomeroy, R.S., Katon, B.M. and Karkes, I., 2001. Conditions affecting the success of fisheries co-management: Lessons from Asia. *Marine Policy*, 21(5), pp. 465–480.

Pomeroy, R.S. and Pido, M.D., 1996. Initiatives towards fisheries co-management in the Philippines: The case of San Miguel Bay. *Marine Policy*, 19(3), pp. 213–226.

Pomeroy, R.S., and Williams, M.J., 1994. Fisheries co-management and small-scale fisheries: A policy brief. International Center for Living Aquatic Resources Management, Manila, pp. 1–15.

Powell, R.R., 2006. Evaluation Research: An Overview. *Library Trends*, 55(1), pp. 102–120.

Purcell, S.W. and Pomeroy, R.S. 2015. Driving small-scale fisheries in developing countries. *Frontiers in Marine Science*, 2(44). doi. 10.3389/fmars.2015.00044.

Quimby, B., and Levine, A., 2018. Participation, Power, and Equity: Examining three key social dimensions of fisheries co-management. *Sustainability*, 10, pp. 3324. https://doi.org/10.3390/su10093324

Reed, M., 2008. Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141(10), pp. 2417–2431.

Reed, M., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C., Stringer, L., 2009.Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management*, 90(5), pp. 1933–1949.

Retnoningtyas, H., Yulianto, I., Soemodinoto, A., Herdiana, Y., Kartawijaya, T., Natsir, M., Haryanto, J.T., 2021. Stakeholder participation in management planning for grouper and snapper fisheries in West Nusa Tenggara Province, Indonesia. *Marine Policy*, 128, pp. 104452. doi.org/10.1016/j.marpol.2021.104452.

Rousseau, Y., Watson, R.A., Blanchard, J.L. and Fulton, E.A., 2019. Defining global artisanal fisheries. *Marine Policy*, 108, pp. 1–8.

Russi, D., Brink, P.T., Farmer, A., Badura, T., Coates, D., Forster, J., Kumar, R. and Davidson, N., 2012. The economics of ecosystems and biodiversity for water and wetlands. Final consultation draft; IUCN: Gland, Switzerland.

Said, A., Tzanopoulos and MacMillan, 2016. Bluefin tuna fishery policy in Malta: The pligt of artisanal fishermen caught in the capitalist net. *Marine Policy*, 73, pp. 27–34.

Samy-Kamal, M., 2022. Insights on illegal, unreported and unregulated (IUU) fishing activities by Egyptian vessels in neighbouring countries. *Fishes*, 7(5), pp. 288. https://doi.org/10.3390/fishes7050288.

Sawman, M., 2006. Subsistence and small-scale fisheries in South Africa: A ten-year review. *Marine Policy*, 30, pp. 60–73.

Schuhbauer, A. and Sumaila, U.R., 2016. Economic viability and small-scale fisheries – a review. *Ecological Economics*, 124, pp. 69–75.

Schwermer, H., Barz, F., Zablotski, Y., 2020. A Literature Review on Stakeholder Participation in Coastal and Marine Fisheries. In: Jungblut, S., Liebich, V., Bode-Dalby, M.

(eds) YOUMARES 9 - The Oceans: Our Research, Our Future. Springer, Cham. https://doi.org/10.1007/978-3-030-20389-4_2.

Selig, E.R., Nakayama, S., Wabnitz, C.C.C., Österblom, H., Spijkers, J., Miller, N.A., Bebbington, J. and Sparks, J.L.D, 2022. Revealing global risks of labor abuse and illegal, unreported, and unregulated fishing. *Nature Communications*, 13, pp. 1612. doi.org/10.1038/s41467-022-28916-2.

Sen, S. and Nielsen, J.R. 1996. Fisheries co-management: a comparative analysis. *Marine Policy*, 20(5), pp. 405–418.

Serrat, O., 2017. The Sustainable Livelihoods Approach. In: Knowledge Solutions. Springer, Singapore. pp. 21–26. https://doi.org/10.1007/978-981-10-0983-9_5.

Shannon, L.J., Moloney, C.L., Cury, P.M., van der Lingen, C.D., Cury, P., Fréon, P., Cochrane, K.L., 2006. Ecosystem modelling approaches for South African fisheries management. *American Fisheries Society Symposium*, 49(2), pp. 587–608.

Smallhorn-West, P., Cohen, P. J., Phillips, M., Jupiter, S. D., Govan, H. and Pressey, R. L., 2022. Linking small-scale fisheries co-management to U.N. Sustainable Development Goals. *Conservation Biology*, 36, e13977. https://doi.org/10.1111/cobi.13977.

Smith, H., and Basurto, X., 2019. Defining small-scale fisheries and examining the role of science in shaping perceptions of who and what counts: A systematic review. *Frontiers in Marine Science*, 6, 236, pp. 1–19.

Soliku, O., and Schraml, U., 2020. From conflict to collaboration: the contribution of co-management in mitigating conflicts in Mole National Park, Ghana. *Oryx*, 54(4), pp. 483–493.

Sowman, M., Sunde, J., Smith, H., and Wicomb, W., 2011. Emerging proposals for tenure governance in small-scale fisheries in South Africa. FAO workshop on governance of tenure for responsible capture fisheries, Rome, Italy 4–6 July 2011.

Stats SA, 2016. Education report focusing on the Eastern Cape. [Online] Available at: <https://www.statssa.gov.za/?p=6213> [Accessed, 20 August 2023].

Stevenson, M.G., 2006. The possibility of difference: Rethinking co-management. *Human Organization*, 65(2), pp. 167–180.

Sulu, P.J., Eriksson, H., Schwarz, A.M., Andrew, N.L., Orirana, G., Sukulu, M., Oeta, J., Harohau, D., Sibiti, S., Toritela, A. and Beara, D., 2015. Livelihood and fisheries governance in a contemporary Pacific Island setting. *PLoS ONE*, 10(11), pp. 1–25.

Takahashi, B. and Duijn, A.P., 2012. Operationalizing fisheries co-management: Lessons learned from lagoon fisheries co-management in Thua Thien Hue Province, Viet Nam. FAO Regional Office for Asia and the Pacific, Bangkok. RAP Publication 2012/02, pp. 1–131.

Tanlaka, E. F., Ewashen, C., & King-Shier, K. (2019). Postpositivist critical multiplism: Its value for nursing research. *Nursing open*, 6(3), pp. 740–744. https://doi.org/10.1002/nop2.306.

Tassetti, A.N., Galdelli, A., Pulcinella, J., Mancini, A. and Bolognini, L., 2022. Addressing gaps in small-scale fisheries: A low-cost tracking system. *Sensors*, 22, pp. 839. https://doi.org/10.3390/s22030839.

Temple, A.J., Skerritt, D.J., Howarth, P.E.C., Pearce, J. and Mangi, S.C., 2022. Illegal, unregulated and unreported fishing impacts: A systematic review of evidence and proposed future agenda. *Marine Policy*, 139, pp. 105033.

Thang, H.V., 2018. Rethinking Fisheries Governance: The role of state and meta-governance. Palgrave MacMillan, Vietnam.

Thomas, D., Ostrom, E., and Stern, P.C., 2003. The struggle to govern the commons. *Science*, 302, pp. 1907–1912.

Tilley, A., Hunnam, K.J., Mills, D.J., Steenbergen, D.J., Govan, H., Alonso-Poblacion, E., Roscher, M., Pereira, M., Rodrigues, P., Amador, T., Duarte, A., Gomes, M. and Cohen, P.J., 2019. Evaluating the Fit of Co-management for Small-Scale Fisheries Governance in Timor-Leste. *Frontiers in Marine Science* 6, pp. 392. doi: 10.3389/fmars.2019.00392.

Townsend, H., Harvey, C.J., deReynier, Y., Davis, D., Zador, S.G., Gaichas, S., Weijerman, M., Hazen, E. and Kaplan, I.C. 2019. Progress on implementing Ecosystem-Based Fisheries Management in the United States through the use of ecosystem models and analysis. *Frontiers in Marine Science*, 6, pp. 641. doi.org/10.3389/fmars.2019.00641.

Trimble, M. and Plummer, R., 2019. Participatory evaluation for adaptive co-management of social–ecological systems: A transdisciplinary research approach. *Sustainability Science*, 14, pp. 1091–1103. doi: 10.1007/s11625-018-0602-1.

Trochta, J.T., Pons, M., Rudd, M.B., Krigbaum, M., Tanz, A., Hilborn, R., 2018. Ecosystem-based fisheries management: Perception on definitions, implementations, and aspirations. *PLoS ONE* 13 (1): e0190467. doi.org/10.1371/journal. pone.0190467.

Tyagi, N., Bhushan, B., 2023. Demystifying the Role of Natural Language Processing (NLP) in Smart City Applications: Background, Motivation, Recent Advances, and Future Research Directions. *Wireless Personal Communication*, 130, pp. 857–908. https://doi.org/10.1007/s11277-023-10312-8.

Van Hoof, L., 2010. Co-management: an alternative to enforcement? *ICES Journal of Marine Science*, 67(2), pp. 395–401.

Wade, E., Spalding, A.K. and Biedenweg, K., 2019. Integrating property rights into fisheries management: The case of Belize's journey to managed access, *Marine Policy*, 108, pp. 103631, https://doi.org/10.1016/j.marpol.2019.103631.

Westlund, L. and Zelasney, J., 2019. Securing sustainable small-scale fisheries: sharing good practices from around the world. FAO Fisheries and Aquaculture Technical Paper No. 644. Rome, pp. 1-182.

Wilson, D.C., 2003. Fisheries Co-Management and the Knowledge Base for Management Decisions. In: Wilson, D.C., Nielsen, J.R., Degnbol, P. (eds) The Fisheries Co-management

Experience. Fish and Fisheries Series, vol 26. Springer, Dordrecht. doi.org/10.1007/978-94-017-3323-6_16.

Wondolleck, J.M. and Yaffee, S.L., 2000. Making collaborative work: Lessons from Innovation in Natural Resource Management. Washington, D.C., Island Press, USA.

Yates, K.L., 2014. View from the wheelhouse: Perceptions on marine management from the fishing community and suggestions for improvement. *Marine Policy*, 48, pp. 39–50.

Appendices

Appendix A: Interview schedule used to conduct research of co-management of SSF on the Wild Coast.

Interview date	**Stakeholder participant**	**Interaction type**
21.04.2023	DEDEAT	Face-to-face
21.04.2023	WSU	Face-to-face
02.05.2023	Fisher 1: Xolobeni	Face-to-face
02.05.2023	Fisher 2: Xolobeni	Face-to-face
03.05.2023	Fisher: Lusikisiki	Face-to-face
04.05.2023	Fisher: Port St Johns	Face-to-face
05.05.2023	Fisher: Coffee Bay	Face-to-face
29.05.2023	DFFE	Face-to-face
04.06.2023	SWC	Telephonic
14.06.2023	WWF-SA: Senior Manager	Telephonic
23.06.2023	WWF-SA: Officer	Telephonic

Appendix B: Sample of consent form used for compliance with ERAS for interviewing participants.

PARTICIPANT INFORMED CONSENT DECLARATION

(To be signed by research participant/s)

Project Title: Evaluating perceptions of co-management on small-scale fisheries in the Wild Coast of South Africa

Vusi Mthombeni from the Department of Business School, Rhodes University has requested my permission to participate in the above-mentioned research project.

The nature and the purpose of the research project and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to evaluate the perceptions of stakeholders on co-management for small-scale fisheries on the Wild Coast to inform decision-making for possible improvement on the management of these resources.

2. Rhodes University has given ethical clearance to this research project and I have seen/may request to see the clearance certificate

3. By participating in this research project, I will be assisting the researcher to collect information required for an academic study to improve the management of fisheries.

4. I will participate in the project by answering the questions being asked by supplying the answers based on my opinion and insight on fisheries.

5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences

6. I will not be compensated for participating in the research, but my out-of-pocket expenses will be reimbursed.

7. The following risks are associated with my participation: The researcher is a government employee. However, the researcher's role in conducting this interview has nothing to do with government duties since the work is done on a private capacity for obtaining a degree. The risk is therefore, mitigated.

8. The Researcher intends to publish the research results in the form of dissertation, peer reviewed literature or conference proceedings. However, confidentiality and anonymity of records will be maintained and my name and identity will not be revealed to anyone who has not been involved in the conducting of the research.

Rhodes University, Research Office, Ethical Review
Ethics Coordinator, ethics-committee@ru.ac.za
t: +27 (0) 46 603 7727 f: +27 (0) 86 616 7727
Room 304, Main Admin Building, Prince Alfred Road, Grahamstown 6140

9. In terms of the Protection of Personal Information Act (No. 4 of 2013) it remains my right to request the Researcher to provide me with a detailed explanation of exactly how confidentiality and anonymity of the data I provide will be achieved. I may also request to know exactly how my personal information will be stored securely, for how long it will be stored.

10. If any data collected from me for this research project is to be used by the Researcher for any further study, I am to be informed in writing and my written consent requested again. I need not give consent for the new research if it is incompatible with the initial purpose of the present study (POPIA, s15(3)). Equally, I can simply reject the request. In such cases, a formal request needs to be made to me by the researcher via the Ethics Coordinator (ethics-committee@ru.ac.za).

11. In terms of the POPI Act, I possess the right to receive feedback about this research. This will take the form of dissertation, peer reviewed paper or oral presentation by the researcher unless ***I elect not to receive this feedback.***

12. Any further questions that I might have regarding the nature of the research and/or my participation in it will be answered by Vusi Mthombeni; g07m6148@campus.ru.ac.za

13. By signing this informed consent declaration, I am not waiving any legal claims, rights, or remedies. A copy of this informed consent declaration will be given to me, and the original will be kept on record by the Researcher.

14. I *agree/disagree* (delete inapplicable) to the Researcher's request to take photographs, or videoing me as part of this research project, recognizing that agreement here is likely to raise the risk of compromising my anonymity and that steps will be taken to ensure this will not happen if my consent is given.

15. I *agree/disagree* (delete inapplicable) to the Researcher's use of voice recording of my comments and opinions during interviews, the purpose of which is to ensure the accurate recording of my views/responses. Furthermore, I have the right to request a copy of the interview transcriptions to confirm that my opinions are accurately recorded.

I, ……………………………………………………………………, have read the above information / confirm that the above information has been explained to me in a language that I understand and I am aware of this document's contents. I have asked all questions that I wished to ask, and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

Participants signature	Witness	Date

Rhodes University, Research Office, Ethical Review
Ethics Coordinator: ethics-committee@ru.ac.za
t: +27 (0) 46 603 7727 f: +27 (0) 86 616 7707
Room 204, Main Admin Building, Drostdy Road, Grahamstown, 6139

Appendix C: Ethics Letter (Conditional Approval)

RHODES UNIVERSITY
Where leaders learn

Rhodes University Human Research Ethics Committee
PO Box 94, Makhanda, 6140, South Africa
t: +27 (0) 46 603 7727
f: +27 (0) 46 603 8822
e: ethics-committee@ru.ac.za

https://www.ru.ac.za/researchgateway/ethics/

24 March 2023

Mr Vusi Mthombeni

Email: [redacted]

Review Reference: 2023-5938-7533

Dear Mr Vusi Mthombeni

Re: Evaluating perceptions of co-management on small-scale fisheries in the Wild Coast of South Africa

Researcher: Mr Vusi Mthombeni

Supervisor: [redacted]

This letter confirms that the above research proposal has been reviewed by the Rhodes University Human Research Ethics Committee (RU-HREC) and **PROVISIONALLY APPROVED PENDING PERMISSION/GATEKEEPER LETTER(S)**.

Gatekeeper permission is required from:

[redacted]

Once the Gatekeeper permission letters have been received please forward them. to the Ethics Coordinator, in order to finalize your ethics approval.

Sincerely,

[redacted]

Dr [redacted]

Chair: Rhodes University Human Research Ethics Committee, RU-HREC

cc: Ethics Coordinator

Appendix D: Ethics Letter (Final Approval)

Rhodes University Human Research Ethics Committee
PO Box 94, Makhanda, 6140, South Africa
t: +27 (0) 46 603 7727
f: +27 (0) 46 603 8822
e: ethics-committee@ru.ac.za

https://www.ru.ac.za/researchgateway/ethics/

6 July 2023

vusi mthombeni

Email: [redacted]

Review Reference: 2023-5938-7533

Dear Mr. Vusi Mthombeni

Title: Evaluating perceptions of co-management on small-scale fisheries in the Wild Coast of South Africa

Researcher: Vusi Mthombeni

Supervisor(s): [redacted]

This letter confirms that the above research proposal has been reviewed and **APPROVED** by the Rhodes University Human Research Ethics Committee (RU-HREC). Your Approval number is: 2023-5938-7533

Approval has been granted for 1 year. An annual progress report will be required in order to renew approval for an additional period. You will receive an email notifying you when the annual report is due.

Please ensure that the ethical standards committee is notified should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Please also ensure that a brief report is submitted to the ethics committee on the completion of the research. The purpose of this report is to indicate whether the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the ethical standards committee should be aware of. If a thesis or dissertation arising from this research is submitted to the library's electronic theses and dissertations (ETD) repository, please notify the committee of the date of submission and/or any reference or cataloguing number allocated.

Sincerely,

[redacted]

[redacted]

Acting Chair: Rhodes University Human Research Ethics Committee, RU-HREC

cc: Ethics Coordinator