CO-MANAGEMENT AND SOCIAL EQUITY AT SILAKA AND HLULEKA NATURE RESERVES, SOUTH AFRICA

By

Anda Mtshintsho

Thesis submitted in the fulfilment of the requirements for the degree of

Master of Science

at

Rhodes University

Supervisor: Professor Gladman Thondhlana

Co-supervisor: Professor Alta de Vos

Abstract

Co-management of protected areas (PAs) is a desired conservation approach aimed at balancing ecological goals and livelihood needs. Central to co-management are issues related to power sharing, responsibilities and benefit sharing. However, there still remains a dominance of an ecological emphasis in PA management, with studies focusing more on 'objective' biodiversity indicators for measuring the effectiveness of protected areas. However, focusing only on ecological indicators addresses a narrow perspective of achieving ecological integrity and misses social dimensions that, in some cases, might be considered more important than technical considerations. Particularly, in contexts with a history of socio-physical displacement of Indigenous people and local communities (IPLC), the social dimensions of wellbeing are complexly embedded into the economic and ecological dimensions, such that ignoring these linkages might jeopardise the success of protected areas. Thus, the aim of this study was to examine the state of research and conceptual advances on social indicators of conservation success in co-managed PAs and stakeholder views and perceptions on socially just conservation in co-managed protected areas in Silaka and Hluleka Nature Reserves, South Africa. To achieve this, a scoping review, semi-structured interviews and futures workshops (using the three horizons framework) were conducted. Findings from the scoping review (chapter 2) revealed that much of the reported social monitoring indicators still rely on quantifiable metrics (i.e., economic benefits) and less on subjective and relational metrics (i.e., qualitative strength of social networks and perceptions). Unsurprisingly, many of the reviewed case studies revealed the use of participation as an indicator of evaluating co-management success. Further, the interviews and futures workshop results in chapter 3 showed that the non-accrual of key co-management expectations such as the employment of local people, benefit-sharing (material or otherwise), participation in decision-making and community development has led to heightened conflicts between the reserve management agency and local people. Consequently, the respondents did not value the co-management arrangements, citing unfulfilled promises. Broadly, the findings of this study emphasise the need for collective and collaborative efforts in developing indicators that are not only socially just but those that are context dependent and sensitive.

Keywords: Co-management, social dimensions, benefit-sharing, indicators, conservation success, perceptions, local people.

Declaration

I, **Anda Mtshintsho**, hereby declare that the work outlined in this thesis was carried out at Department of Environmental Science, Rhodes University, under the supervision of Professors Gladman Thondhlana and Alta de Vos. The components of the thesis comprise original work by the author and have not been submitted to any other university.

Signed: Date: 19 August 2024

Acknowledgments

The completion of this thesis would not have been possible without the unwavering support of my family, my mother and siblings – Inga, Asivelele and Isivile, who cannot fully understand why I am still studying after "so many degrees", but do not support me any less. I am where I am, doing all the things I am doing because of them. A massive thank you to my partner, Varshan Pillay for all the unwavering love and reassurance when things got hard. Your warmth and kindness have kept me sane – Thank you!

I would like to thank my supervisors Professors Gladman Thondhlana and Alta de Vos for their academic and financial support throughout this journey. Special thanks to my principal supervisor, Professor Thondhlana, who worked tirelessly to keep track of my progress and wellbeing and allowing me to barge into his office to discuss all the ideas I had. At times when I felt that this study was beyond my scope of knowledge, you reassured and redirected me. Your invaluable contributions to my academic journey have been nothing short of inspiring. Thank you, Prof!

I owe many thanks to many people. Firstly, I would like to sincerely express my gratitude to the communities of Hluleka and Sicambeni. I can never thank them enough for their willingness to participate in this study and welcoming me into their homes. Without them, this study would have just been a far-fetched dream. Special mentions to the community leaders, notably, Ntsindiso Nongqavu, Nandipha Nogwina, Sfiso Ntsanguzi, Phindile Phikani and Chief Gwadiso (***Ahh Jongilanga!***) who facilitated my stay and data collection at the above-mentioned communities. Many things to my field assistant Phumelela Booi, who made the data collection process much easier. Thanks to Dr. Menelisi Falayi and the Rhodes University Library staff - Thandiwe Menze and Vuyo Ntamo for their assistance in conceptualising my scoping review chapter. Staff and fellow students of the Department of Environmental Science are duly appreciated for their support. Special thanks to Mam'Nomvula Sitole for assisting me with planning for fieldwork and all the supplies I needed for it, Faith Mshengu and Amanda Gambiza for helping me with my map and everyone else for the community of care. I am also grateful to my friends who continue to inspire me in many different ways. Lastly, this study was funded by the National Research Foundation (NRF). I am grateful to the NRF for this generous contribution.

Table of contents

Table of Contents

Abstract ... i

Declaration ... ii

Table of contents ... iv

CHAPTER 1 ... 1

General introduction ... 1

1. Background ... 1

1.1 The co-management approach ... 1

1.2 Protected areas as a conservation approach ... 2

1.3 Political ecology of conservation ... 4

1.3.1 Position of local people in conservation ... 5

1.3.2 Social equity in protected areas ... 6

1.3.3 Perceptions of stakeholders on conservation management ... 9

1.4 The current status of social indicators ... 10

1.5 The South African context ... 11

1.6 Thesis outline ... 12

CHAPTER 2: ... 13

Co-management of protected areas – a scoping review of social indicators for measuring success .. 13

Abstract ... 13

2.1 Introduction ... 13

2.2 Methods ... 18

2.2.1. Data collection ... 18

2.2.2 Data analysis ... 22

2.2.3 Limitations ... 22

2.3 Results and Discussion ... 22

2.3.1 Composition of data ... 22

2.3.2 Dominant indicator themes identified ... 24

2.3.2.1 Economic benefits ... 24

2.3.2.2 Community involvement ... 25

2.3.2.3 Stakeholder empowerment ... 26

2.3.2.4 Governance ... 27

2.3.2.5 Social interactions and wellbeing ... 29

2.3.3 Indicators' link to principles of equity 30
2.3.3.1 Recognition 33
2.3.3.2 Procedure 34
2.3.3.3 Distribution 35
2.4 Advancing equity research in co-management 35
2.5 Conclusions and recommendations 39
CHAPTER 3 41
Local communities' perceptions of co-management arrangements, benefit-sharing, and conflicts: lessons from communities around Silaka and Hluleka Nature Reserves in South Africa 41
Abstract 41
3.1 Introduction 41
3.2 A brief co-management history in South Africa 46
3.3 Case study sites 48
3.4 Methods 50
3.4.1 Data collection 50
Interviews 50
Futures workshops 51
3.4.2 Data analysis 54
3.4.3 Limitations 54
3.5 Results 55
3.5.1 The socio-demographic profile of the respondents 55
3.5.2 Meaning of land and land use activities 55
3.5.3 Perceptions of benefit-sharing 57
3.5.4 Recognition of co-ownership of reserve and claimants' voice in management 58
3.5.5 Wellbeing and desired conditions 59
3.5.6 Respondents' desired futures 60
3.5.7 Pathways to the desired future 61
3.6 Discussion 64
3.7 Conclusions 68
CHAPTER 4 69
Synthesis, recommendations and conclusions 69
4.1 Introduction 69
4.2 Summary of findings 69

4.3 Advancing equity in co-management 70
4.4 Recommendations 71
4.4.1 Recommendations for implementation and practice 71
4.4.2 Future research prospects 72
4.5 Conclusion 72
REFERENCES 74

CHAPTER 1

General introduction

1. Background

Global discourses surrounding social justice issues in conservation advocate for public participation in decision-making and for more rights-based approaches to empower Indigenous people and local communities (Schreckenberg et al., 2016; Gross-Camp, 2017; Salerno et al., 2021; Abede and Jones, 2022). Co-management is understood to be a mitigating approach to the issues of resource access and to solve other issues that came as a result of top-down management measures such as benefit-sharing and decision-making power in their ancestral land (Armitage et al., 2009; Berkes, 2010; Ntshona et al., 2010; Cundill et al., 2013). While co-management approach of PA has potential to positively impact the social dimensions of surrounding communities, the criteria for measuring success is based on ecological indicators (Cumming, 2016; Cundill et al., 2017). The use of ecological indicators to evaluate conservation success is unidirectional and thus only addresses a narrow spectrum of socio-ecological integrity (Tupala et al., 2022). Particularly, in contexts with a history of socio-physical displacement of Indigenous people and local communities, the social dimensions of well-being are complexly embedded into the economic and ecological dimensions, such that ignoring these linkages might jeopardise the success of conservation (Tupala et al., 2022).

1.1 The co-management approach

Co-management is understood as a working relationship between two or more social actors such as the state, local communities and other stakeholders where the relationship operates on a continuum of knowledge generation, deliberation, and power-sharing (Berkes, 2010). In some forms of co-management agreements, the terms and roles of the stakeholders are discussed and decided to ensure equitable sharing of the benefits (Berkes, 2010). The sharing of power, roles and responsibilities is the distinguishing factor for co-management from other kinds of participatory management (Carlsson and Berkes, 2005). Despite the potential of co-management approaches to creating an idealised "win-win" situations for all stakeholders, it is associated with several

weaknesses (Casson, 2015; Mollick et al., 2022). For example, the approach tends to overlook the complexities that are embedded in the relationship between stakeholders and the protected area, especially in countries with histories of colonialism and land dispossessions such as South Africa (Kepe, 2008; Cundill et al., 2013). In addition, the co-management approach exacerbates the power imbalances (Béné and Neiland, 2004; Berkes, 2009; Ullah, 2022). This means that the introduction of co-management reinforces already existing controlling power to the government and its management agencies. In many, if not all the instances, those who are politically disempowered bear the costs of co-management failure (Casson, 2015). Furthermore, the co-management approach is rigidly applied using standardised universal prescriptions (Lockwood et al., 2009). This means that in many cases of its implementation, the approach does not consider the context in which it is applied. Lastly, there tends to be inadequate and short-term commitments by governments to maintain the arrangement (Lockwood et al., 2009). Last, the approach is still failing to appropriately recognise the cultural identity and rights of local communities (Lockwood et al., 2009). That means that the approach is still implemented using a Western centric approach despite the promises of co-management.

1.2 Protected areas as a conservation approach

There have been growing calls for global conservation agencies and organisations to advocate for the protection of natural landscapes due to the prevalent anthropogenic influence on natural systems (Oldekop et al., 2016; CBD, 2020). Protected areas remain the dominant tool with which to achieve such protection (Watson et al. 2014; Schulze et al., 2018; Adams et al., 2019; Nila and Hossain, 2019; Gatiso et al., 2022). The IUCN (2008: 8) define a PA as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values". Well-managed PAs can produce positive results that extend beyond their boundaries and subsequently achieve sustainable development goals (SDG) (Gray et al., 2016; CBD, 2019), such as addressing food (in)security (Cumming, 2016; CBD, 2019). However, biodiversity continues to be on a decline (Roe, 2008; Butchart et al., 2010; Geldmann et al., 2013; Palome et al., 2014; Oldekop et al., 2016; IPBES, 2019; CBD, 2020; Leclère et al., 2020) and the capacity of ecosystems to support and maintain the increasing population of humans is decreasing despite the efforts of PAs (Palome et al., 2014). Protected areas as an approach to conservation still proves to

be controversial and its success a matter of debate (Roe, 2008; Butchart et al., 2010; Maciejewski et al., 2015; Oldekop et al., 2016; Pendleton et al., 2018; Ma et al., 2020), and Ghoddousi et al. (2022) argue that merely expanding PAs will not lead to conservation 'success'. In many of the recorded cases of PAs proclamation, due processes and the rights and needs of local communities were not considered (Berkes, 2004; Maciejewski et al., 2015), with local communities being forcefully displaced to make way for conservation (Andrade and Rhodes, 2012). This gave rise to calls for the proclamation and maintenance of PAs to be managed under a shared and agreed upon vision (Franks and Booker, 2015; Maciejewski et al., 2015). However, despite the extensive legislation and policies that govern protected area management and promote a collaborative or participatory approach to management, this is not always reflected in practice (Holmes-Watts and Watts, 2008; Morgera, 2018; Corson et al., 2020; Barnes et al., 2023). In most cases, local communities play a passive role in managing PAs while enduring most of the trade-offs of conservation, and there is often minimal interaction between different stakeholders such as managers and local communities (e.g., Holmes-Watts and Watts, 2008; Cundill et al., 2013; Mutanga et al., 2015; Thondhlana and Cundill, 2017; Ward, 2018; Moyo, 2023). The lack of participation by local communities means that global objectives for co-management are not realised, which means that many PAs are not fully embracing their duality (Corson et al., 2020).

Understanding the current landscape of PAs' effectiveness and management requires recognition of their complex nature in that they co-exist and interact with the biological and social landscape (Cumming, 2016; Sarmiento-Mateos et al., 2019). With PAs regarded as an integral strategy to conserve biodiversity, they constantly must prove their significance in today's society (Palomo et al., 2014; Cumming et al., 2015; Cumming, 2016; Mathevet et al., 2016). This is also necessary for their sustainability and resilience because PAs are social constructs and society (at least some parts of society) ultimately decides if they should be there, or not. This means that PAs must prove that they have a dual purpose in conserving biodiversity and ecosystem function, but also that they are useful to society, recognising that they might also be valued by some on account of the intrinsic value of nature to those decision makers (e.g. some private or Indigenous areas that are just protecting nature for nature's sake). The idea of PAs being complex social-ecological systems means an understanding of the interactions between humans and nature and how those interactions

give rise to feedback and resilience is needed (Cumming and Allen, 2017). Apart from arguing for PAs' relevance when compared to alternative land uses and pressures from factors such as climate change, the issues of equity, resource access and social and political justice are said to be insufficiently addressed in measuring the success of PAs (Kepe, 2008; Cumming, 2016). Kovacs et al. (2015) and Bonilla-Moheno et al. (2021) argue that many PAs lead to land-use changes, and that these can result in conflicts between various stakeholder groups. Thus, it is important for PAs to be positioned in the social and political landscape to retain their identity which is biodiversity conservation and livelihood improvement (Cumming, 2016). The complex SESs nature of PAs also means that we need to not only focus on quantifiable elements of PAs such as ecological indicators but capture a holistic nature which can be done using social indicators (Cumming, 2016; Cundill et al., 2017). However, capturing these "less obvious" and "less mainstream" elements has proven challenging (Cumming, 2016; Galvin et al., 2018). This is partly due to the fact that social dimensions are notoriously difficult to measure (Cumming, 2016; Cundill et al., 2017). Another reason for this could be attributed to the bias that exists with organisations that fund and manage PAs where indicators to evaluate effectiveness are biased towards natural scientists and conservationists (Cumming, 2016; Cundill et al., 2017). This means that there is a lack of good social sciences to inform many of these indicators (Bennett et al., 2017; Ruoso and Plant, 2021).

1.3 Political ecology of conservation

The political ecology of conservation is defined by Bryant and Bailey (1997) as an arena of asymmetrical power dynamics where different where there are power plays between different social actors for control over and access to natural resources. Robbins (2003, 2012) suggests that the framing seeks to address environmental concerns by integrating various contexts such as political, historical and socio-economic to inform it. The application of this framing in this study is motivated by the contextual nature of co-management and the historical background, in attempts to explore the power dynamics that exist for better practices. Further, the exploration of power dynamics through a political ecology framing allows for the exploration of other factors such as resource access, participation, and other social impacts of conservation. Mollet and Kepe (2018) and Peet et al. (2010) highlight the concern that biodiversity conservation, which in its theoretical basis of conservating biodiversity, improving livelihoods, and subsequently improving global conditions, is done in a way that still promotes elitism in resource access and control. For example,

conservation agencies and organisations tend to ignore the socio-political history embedded in conservation (Redford, 2011; Andrade and Rhodes, 2012) and its impacts on people, thus implicating how conservation is implemented. Mollett and Kepe (2018) suggest that even with current attempts to integrate humans in conservation practices such as co-management, the fact remains that local people are still on the receiving end of conservation trade-offs, that is, they have to sacrifice land, food security, culture and traditional practices, and other relations to and with the environment.

1.3.1 Position of local people in conservation

The general governance and management of PAs have changed significantly in most parts of the world, with conservationists, local communities and other organisations calling for a transformative approach to managing PAs (Andrade and Rhodes, 2012; Dawson et al., 2021; Gatiso et al., 2022; Ma et al., 2022). The change meant that, and in some instances still is, promoting the shift from the top-down, Western-inspired preservationist philosophical approaches to more "inclusive" approaches that incorporated local people and traditional knowledge (Watts and Faasen, 2009; Andrade and Rhodes, 2012; Dawson et al., 2021; Gatiso et al., 2022; Manda et al., 2023). Specific models of conservation such as the Yosemite model and many others, perceived nature as "Wilderness" and consequently, presented Indigenous and local people and their lifestyles as a threat and inferior to Western ways (Neumann, 2004; Martin et al., 2016). This top-down exclusionary approach failed to recognise the social, cultural, and political aspects in the management of PAs (Andrade and Rhodes, 2012). There are many cases where local people were denied entry into such spaces, prohibiting them from performing their daily livelihood, cultural, and traditional practices through extracted natural resources, resulting in social and economic hardships (Brockington and Igoe, 2006; Watts and Faasen, 2009; Andrade and Rhodes, 2012). For example, Thondhlana and Cundill (2017) found that 67% of interviewed communities leaders in different communities neighbouring PAs stated that they have restricted access into the PAs to perform said activities. It was common for local communities to be removed from their ancestral land and with little or no compensation (Connor, 2005; Brownlie and Botha, 2009; Cundill et al., 2017). Some of the adverse social impacts resulting from exclusionary approaches include negative perceptions towards conservation and increased tension and conflicts between conservation managers and local communities (Andrade and Rhodes, 2012; Bennett, 2016), a

situation that has been argued to explain reduced effectiveness of PA management (Andrade and Rhodes, 2012). The exclusion of local people and communities from conservation is further magnified by the relationship between conservation and development and the negative human impacts that are said to be an outcome of PAs (i.e., prioritising biodiversity conservation and financial gain over human involvement), further impoverishing and marginalising local people and communities through regulatory frameworks such as fences and fines (Kabra, 2009).

Because of the diverse nature of communities and the relationships people have with conservation and PAs, various types and approaches of benefit-sharing have been employed globally to engage local communities (Scherl et al., 2014; Wynberg and Hauck, 2014). Some of the most prevalent strategies include outreach programmes where a portion of the revenue is given to the community in various ways (Spenceley et al., 2021), collaborative management programmes where the community and conservation authorities agree on a shared management programme where roles and responsibilities are stipulated (Katikiro et al., 2017), community-based conservation or community-based natural resources management, where local communities are given the responsibility and sometimes a level of ownership of managing natural resources and allowing such communities to benefit from it (Scherl et al., 2014; Wynberg and Hauck, 2014). However, co-management is riddled with equity concerns and there are increasingly calls for addressing equity goals in community-based conservation (Zafra-Calvo et al., 2017; Abede et al., 2020; Mollick et al., 2023).

1.3.2 Social equity in protected areas

Oltremari and Jackson (2006: 215) suggest that in a protected area framework "there is an ethical obligation to attempt to improve the quality of life". Social equity in PAs has been a framework used address many issues of hardships (Schreckenberg et al., 2016), and there is qualitative evidence to support the claim that PAs have in some form contributed to or initiated hardships for many communities (Timko and Satterfield, 2008; Angwenyi et al., 2021). Examples of this include local people or their livestock being injured or killed by wild animals (Matema and Andersson, 2015), crop damage (Subakanya et al., 2018), and restrictions on accessing natural resources (Widianingisih et al., 2016).

Here, equity is understood as a multi-layered approach which in simple terms means fairness in the distribution of "benefits" brought by PAs (Franks et al., 2018). In the context of the Convention on Biological Diversity (CBD), equity is said to be a good element of PA governance in that it highlights three dimensions that could potentially lead to effective management; recognition, procedure, and distribution (Martin et al., 2016, 2018; Friedman et al., 2018; Abede and Jones, 2022). Recognition refers to the intentional highlighting of certain aspects embedded in the setting of conservation such as culture, traditions, and identity (Martin et al., 2016; Friedman et al., 2018). Procedure relates to how conservation decisions are made, who gets to participate and to what extent is the participation (Martin et al., 2016; Friedman et al., 2018). And lastly, "distribution" refers to the different stakeholders involved directly or not, what materialistic "benefits" they get, and how the costs and responsibilities are shared (Martin et al., 2016; Friedman et al., 2018). Other scholars even include a fourth dimension – contextual equity, which considers the socio-economic and political history of the setting (e.g., McDemott et al., 2013). As argued previously, PA effectiveness evaluation tools tend to focus on the distributional aspects, while recognition and procedure are typically glanced over. In cases where attention is paid to recognition and procedural aspects of equity, it is often to appease funders or contractual obligations (Martin et al., 2016; IUCN WCPA, 2019). When these aspects are included, they tend to be shallow and do not capture the true reflection of the different communities (Hicks et al., 2016; IUCN WCPA, 2019). Equity in PAs allows for equitable governance and effective management, which is based on the concept of environmental justice (Franks et al., 2018; IUCN WCPA, 2019).

The idea of equity is fundamentally based on ethical arguments and social justice (IUCN WCPA, 2019). As previously stated, PAs infringed on the rights, livelihoods and overall wellbeing of local people as they were created in the colonial era (Watts and Faasen, 2009; IUCN WCPA, 2019). Social justice and equity in PA management are often one-dimensional, with "benefit-sharing" being its primary attribute. This largely refers to financial gain from tourism revenue and the extraction of natural resources (Zafra-Calvo et al., 2017). Literature argues that generalising what is social justice in conservation is difficult because it is context dependent. Therefore, policymakers and those tasked with formulating evaluation tools for PA management effectiveness must consider moving away from the usual trend of consulting global trends and laws that govern social justice. Instead, PAs' management effectiveness evaluation should focus on the local scale and on what directly impacts local communities and local people (Pacual et al., 2014; Martin et

al., 2016). The positive attributes of PAs' management transformation to local people have been identified and local people should therefore be recognised as key players in the performance of PAs because this helps shape the objectives and strategies of the PAs. There is strong support for the idea that equitable rights to land and resources leads to successful conservation (Oldekop et al., 2016; IUCN WCPA, 2019).

The recognition that more terrestrial and aquatic habitats are under threat, and the need to expand the existing network of PAs to accommodate this need comes with a lot of concern (IUCN WCPA, 2019; Bhola et al., 2021). It is worth noting that many of these areas are home to people who make use of the natural environment to meet their daily livelihood needs. Exclusionary proclamation of PAs in such areas defy what global policies and legislation stipulate, and they often fail because they defy recommended practices for "best" practices of PAs management (IUCN WCPA, 2019). Such instances contribute to the high levels of concerns from Indigenous people and local communities as they perceive PAs as threats, not opportunities. In the global discourse on the post-2020 Global Biodiversity Framework of the CBD, Bhola et al. (2021) raise a concern that there is more focus on working towards conserving a certain proportion of land, and less focus on how it should be conserved. A social equity framing can be used to address such concerns by bringing a focus into the legitimacy of the processes involved in bringing about participation buy-in, transparency, accountability, and compliance into conservation (Pascual et al., 2014; Dawson et al., 2018; Abede and Jones, 2022).

The idea of equity in PAs' management effectiveness can be improved by connecting the framework with context-specific issues that are informed by monitoring and effectiveness assessments (IUCNWCPA, 2019). Therefore, it is crucial to understand equity as an adaptive concept that can be used to address constantly evolving concerns and dynamics such as local communities (Schreckenberg et al., 2016). Further, the concept of equity should be defined by and understood from the perspectives of local people who often bear the costs of conservation such as physical displacements, restrictions on natural resource use, and human-nature conflicts. Local perspectives on the impact of conservation can be used to inform relevant and socially meaningful and equitable conservation interventions (Bennett, 2016; Dawson et al., 2018; Hayes and Murtinho, 2018).

1.3.3 Perceptions of stakeholders on conservation management

While it is plausible that conservation management approaches have become inclusive of various stakeholders in different ways, it has become more apparent that merely citing what is expected from conservation approaches (i.e., participation and benefit-sharing) is not enough to ensure equitable and socially just conservation. Instead, the benefits of shared perceptions by stakeholders have been advocated for conservation management (Chowdhury et al., 2014; Bennett et al., 2019; Katswera et al., 2022). Perceptions are described by Uddin and Foisal (2005: 85) as "attitudes and understandings that reflect their [people] habitual way of life, as well as shared expectations". Similarly, Bennet (2016: 585) describes perceptions as "the way an individual observes, understands, interpreted and evaluated a referent object, action, experience, individual, policy, or outcome". This means that perceptions can offer great insights into how people view, evaluate, understand and interpret conservation impacts. In co-management arrangements, shared understandings and expectations by stakeholders are crucial for management outcomes, in that they can enhance conservation support (Chowdhury et al., 2014; Pascual et al., 2014; Bennett, 2016; Cetas and Yasué, 2017; Bennet at al., 2019; Katswera et al., 2022). However, given the heterogeneity of stakeholders, even those of the same groups (e.g., local communities), it is difficult to have shared perceptions. Even with varying views, the recognitions of these diverse perceptions may aid in improving co-management in particular contexts. Second, perceptions can be used to explore social impacts on local communities and whether they view the impacts as equitable or socially just (Bennett, 2016).

While there is value in comparing perceptions between stakeholders such as managers and resource users (e.g., Thondhlana and Cundill, 2017), in almost all instances, there are power asymmetries in conservation management with mangers and management agencies having more power than local communities (Moyo, 2023). This power dynamic is evident in current contexts where local communities are still excluded from conservation, even with co-management arrangements as seen in South Africa (e.g., Cundill et al., 2013; Thondhlana et al., 2016; Moyo, 2023) and the Democratic Republic of Congo (e.g., Verweijen and Marijnen, 2018). Janssens et al. (2022) suggest that local people's perceptions may offer great insights into the conflicts that arise as a result of the power dynamics. Therefore, stakeholders' perspectives and perceptions are crucial when designing successful co-management outcomes (Allendorf, 2020). Bennett (2016) and

Abukari and Mwalyosi (2020) also suggest that given the "trial-and-error" nature of conservation approaches, it is important to keep constant attention to successes and failures, and perceptions can offer insights into the progress of conservation.

While there are limitations in using perceptions to inform conservation policies and management practices such as the fact that perceptions are subjective and many do not accurately capture the true representation of the context (e.g., capturing all stakeholders' perceptions), there is great value in using them as a starting point to understand some issues of the context and give insights into the acceptability of conservation efforts (Leleu et al., 2012).

1.4 The current status of social indicators

The dynamics of environmental management are complex, and it is essential to highlight all the factors that potentially affect the success of conservation. One aspect that is often overlooked in evaluating PA management effectiveness is usually the social dimensions (Yates et al., 2019; Chen et al., 2022). The missing social dimensions have the potential of reconciling the relationship between local communities and conservation and improves the chances of effective management (Leisher et al., 2013; Corrigan et al., 2017). Though social indicators are increasingly being introduced in management effectiveness evaluations, there is still the challenge of formulating social indicators that capture the complex nature of human values and other factors such as culture, identity and individuality (Hicks et al., 2016). Weeratunge et al. (2014) suggest that wellbeing-centric frameworks as social indicators can cross-scale and incorporate human values and aspirations. Components of such wellbeing-centric approaches include materialistic, relational and subjective dimensions (Weeratunge et al., 2014). A wellbeing-centric approach is fundamental in that it can be applied in different contexts because it is determined by the perceptions of local communities and the socio-economic indicators used. A wellbeing-centric approach to assessing social indicators is crucial in addressing the gaps that exist in PA management. Identifying and developing indicators is fundamental to the evaluation of whether PA goals and objectives are achieved (Pomeroy et al., 2005). Zafra-Calvo et al. (2017) argue that while there is considerable need for a systematic approach to assessing social equity in PAs, there is a mismatch in actualising that in context. For example, in South Africa, social equity concerns have been raised following 'successful' land claims in PAs and the resultant co-management agreements between the land

claimant communities and conservation agencies (Keep, 2008, Cundill et al., 2013; Thondhlana et al. 2015, 2016; Thondhlana and Cundill, 2017).

1.5 The South African context

Similar to some parts of the world, South Africa is known for its history of inequalities brought by the apartheid government. Central to these were racially motivated removals and land dispossessions of local communities, in some instances to make way for conservation (Maluleke, 2018). The history of conservation in South Africa is extensive, dating back to the 17th century when the first reported conservation decree was recorded and was said to have been issued by Jan van Riebeek following the colonisation of the Cape. Following that, when the British came to be in the Cape, more conservation measures followed (Ramutsindela and Shabangu, 2018; De Villiers, 2021). These measures mostly involved strict legislation imposed to prevent hunting of certain species (Carruthers, 1995). Despite hunting being central to Africans and their traditions, the restrictive legislation grew, and hunting was eventually outlawed (Carruthers, 1995; Duffy, 2014). However, the act continued and was permitted for Europeans to enjoy as they were viewed to care about conservation (Duffy, 2014). The approach of 'elitism' conservation continued, and the colonial government started to proclaim game reserves to preserve wildlife for sport hunting (Jones, 2006). To make way for these reserves, local people were forcefully removed and their exclusion from these reserves was enforced (Kepe et al., 2005; Kepe, 2007; Bersaglio, 2017). Thus, for many years, conservation legislation in South Africa was informed by White interests and ideologies (Dahlberg et al., 2010).

Changes in the political structure of the country meant there were calls to reverse the effects of the apartheid government (de Koning, 2010). This meant that there was an emphasis for the inclusion of environmental and social justice in conservation. Thus, previously dispossessed communities could claim their land under the Restitution of Land Rights Act (22 of 1994) and one of the few options they had, should they be successful in their claim, was co-management (de Koning, 2010). However, rural communities are still at the receiving end of conservation trade-offs and people in these regions depend on natural resources for the sustenance of their livelihoods (Holmes-Watts and Watts, 2008; Statistics South Africa, 2012; Vaccaro et al., 2013). Ramutsindela and Shabangu (2018) argue that addressing the injustices of previous systems of conservation need to bridge the

gap that exists between conservation goals and the purpose of land reform. This means that there should be a balance in the prioritisation of both, unlike currently, where conservation seems to be prioritised (Ramutsindela and Shabangu, 2018). Co-management seeks to strike this balance, however recent events in co-managed PAs seems to suggest otherwise as conflicts continue to persist despite the efforts (i.e., Cundill et al., 2013; Thondhlana et al., 2016; DispatchLive, 2017; Thondhlana and Cundill, 2017; Rampheri et al., 2022).

Therefore, the main aim of this research was to explore the social dimensions of co-managed PAs as a basis for developing locally relevant social indicators for measuring PA effectiveness, drawing on case studies of the Silaka and Hluleka Nature Reserves in the Eastern Cape province of South Africa. To achieve the main objective, the following questions were addressed:

1. What is the state of research and conceptual advances on social indicators of conservation success in co-managed protected areas?
2. What are local people's perceptions of the social equity in co-management at Silaka and Hluleka Nature Reserves?
3. Based on the findings, what indicators reflect socially just conservation?

1.6 Thesis outline

The thesis is divided into four different chapters. Chapter 1 provides a general introduction and literature review of the study including the aims and key research questions of the study. Chapter 2 is a scoping review of the state of research and conceptual advances on social indicators of conservation success in co-managed protected areas. Chapter 3 examines local communities' perceptions of social equity in co-management at Silaka and Hluleka Nature Reserves in South Africa. Chapter 4 provides a synthesis of the key findings and conclusion. Chapters 2 and 3 are formatted as journal articles, complete with an abstract, introduction, study area description, data collection and analysis methods, results, discussion and conclusions. In all the chapters, I was responsible for creating drafts, data analysis, literature synthesis, and writing. My supervisors played a critical role in assisting with the research planning, data collection preparation, and providing suggestions and recommendations for the drafts.

CHAPTER 2:

Co-management of protected areas – a scoping review of social indicators for measuring success

Abstract

Co-management of protected areas (PAs) is a widely advocated model by conservation agencies, international organisations and governments as a panacea of decision-making between central and local level actors. However, notorious social inequity such as exclusion of local communities, restrictive regulations for natural resources use and economic impacts has made the model challenging to implement. The inclusion of social dimensions is therefore crucial when evaluating the effectiveness of co-management. This study is a scoping review of the state of research and conceptual insights of social indicators used to evaluate the performance of co-management arrangements and how those indicators are related to principles of equity. Two bibliographic databases, Scopus and Web of Science, were used to search for peer-reviewed literature published between 1990 and 2023. The findings showed that not much research has been conducted in the area of social indicators in conservation management evaluations. Analysis of the indicators showed that economic benefits and participation by local stakeholders were frequently used for assessing the effectiveness of co-managed PAs. The results also showed the abstract nature of indicators. For example, the question of who participates, when, and how is rarely addressed in literature. Further, many of the reported indicators focus on procedural and distributional dimensions of equity. Thus, key gaps identified in the review include limited work on broader social dimensions in assessing co-managed PAs, focus on recognitional equity and co-designing indicators. Suggestions for future research are highlighted.

Key words: Co-management, social wellbeing, social dimensions, equity, co-design, effectiveness evaluation

2.1 Introduction

Human activities in both terrestrial and marine environments are extensive, with negative impacts on biodiversity. Protected areas (PAs) remain the most prominent tool for biodiversity conservation globally, in both aquatic and terrestrial environments (Barnes et al., 2016; Convention on

Biological Diversity (CBD), 2019; Adams et al., 2019; Nila and Hossain, 2019; Gatiso et al., 2022). Due to the ongoing global biodiversity loss, there are calls from the CBD to have 30% of terrestrial land and sea protected by 2030 ("30x30") (CBD, 2022; Waldron et al., 2022). However, there are still extensive debates on the effectiveness of the PA conservation approach and its ability to conserve biodiversity (Roe, 2008; Butchart et al., 2010; Maciejewski et al., 2015; Oldekop et al., 2016). Despite this, PAs are still promoted as a possible mitigation measure to curb biodiversity loss, alleviate poverty, and improve livelihoods (Brooks et al., 2015; Chechina et al., 2018; Naidoo et al., 2019). Some of the ways PAs can alleviate poverty include eco-tourism, empowerment initiatives, and benefit-sharing schemes including resource harvesting among others (Ferraro and Hanauer, 2014; Snyman and Bricker, 2019). The proclamation and expansion of PAs however has both positive and negative direct and indirect socio-economic impacts on adjacent communities (Bennett and Dearden, 2014). Positive impacts of PA expansion include safeguarding biodiversity, fostering economic prosperity through eco-tourism and alleviating poverty through resource extraction. The negative impacts on Indigenous people and local communities can be seen in forceful removals from ancestral land, human-wildlife conflict, restricted access to resources, and many other socio-economic impacts (Brockington and Igoe. 2006; Adams and Hutton, 2007; Vedeld et al., 2012: Cundill et al., 2017; Dong et al., 2021; Parker et al., 2022). Because of these experiences and trade-offs brought by the expansion and proclamation of PAs, some people still hold negative perceptions and views towards the intentions of conservation (Bennett and Dearden, 2014; Bennett, 2016).

Due to past conservation related injustices, co-management was proposed as PA management model, with a view to achieving equitable conservation management through balancing decision-making power between conservation authorities, sharing benefits and reducing costs on local people (Berkes, 2009; Maciejewski et al., 2015). Co-management is defined as "the sharing of power and responsibilities between the government and local resource users" (Berkes et al., 1991:12). Perhaps, a more comprehensive definition is by Borrini-Feyerabend et al. (2004: 69), who define co-management as "a partnership by which two or more relevant social actors collectively negotiate, agree upon, guarantee and implement a fair share of management functions, benefits and responsibilities for a particular territory, area or set of natural resources". Co-management seeks to integrate local people into the management of conservation areas while fulfilling the objectives of conservation with international organisations such as the International

Union for Conservation oof Nature (IUCN) advocating for its promotion, i.e., IUCN's Theme on Indigenous and Local Communities, Protected Areas, and Equity (TILCEPA) (Pathak, 2005; Carlsson and Berkes, 2005; Berkes, 2009). The relationship between people and conservation is a crucial component for PA management as it influences the outcomes of intended goals of the PAs which are predominantly biodiversity conservation and livelihoods' improvement (Oldekop et al., 2016; Allendorf, 2020). Furthermore, the inclusion of local communities in conservation management can legitimise the initiative, gain local support and improve management (Bennett et al., 2019; 2021). As a result, many consider people's perceptions of conservation as one of the ways in which conservation success can be measured (Struhsaker et al*.,* 2005; Bennett, 2016; Tonin and Lucaroni, 2017; Jefferson et al., 2014, 2021).

However, the evaluation of conservation success is complicated by the complex and dynamic relationship between people and nature (Cumming, 2016; Allendorf, 2020). Some of these complexities are brought upon by factors such as perceptions, knowledge, access (or lack thereof) to natural resources, forced migration, loss of sense of place, human-wildlife conflict, and stakeholder conflict (Cundill et al., 2017; IUCN WCPA, 2019). The said duality of PAs (biodiversity conservation and livelihood improvement) needs to account for these socio-economic factors when evaluating protected areas' success (Kepe, 2008; Cumming, 2016). Unfortunately, the social dimensions of PA management remain understudied, with many opting to measure easily quantifiable indicators such as biophysical and economic performance of the PAs (Cumming, 2016; Cundill et al*.,* 2017). Pomeroy et al. (2005) suggest that specific indicators are needed to evaluate management effectiveness of the social dimensions of conservation.

Boyd and Charles (2006: 237) define indicators as "…measures used to quantify or qualitatively describe phenomena that are not easily measured directly, but which society considers valuable to monitor over time". These can be used in management as a tool to facilitate knowledge co-production and translation, and to transcend boundaries and stakeholders (Kourantidou et al., 2020). This means that indicators can be used to deconstruct complex metrics into easily understandable points that can respond to various questions. Indicators can also be used to inform several parties of interest such as funding institutions, policy makers, conservation agencies and the management team of the progress of the conservation approach (CBD, 2010). Traditionally, PA effectiveness has been conceptualised from an ecological perspective, with many studies

focusing more on “objective” biophysical indicators for measuring PA success (Harrison et al., 2012; Yates et al., 2019). This approach, however, only addresses a narrow perspective of success - ecological integrity - and misses social dimensions that, in some cases, might be considered more important than technical considerations (Yates et al., 2019: Chen et al., 2022). Thondhlana et al. (2020) suggest that focusing on social dimensions in managing conservation can provide great insights into managing non-tangible and non-material impacts of conservation on local people. Particularly, in contexts with a history of socio-physical displacement of indigenous and local communities, the social dimensions of well-being are complexly embedded into the economic and ecological dimensions, such that ignoring these linkages might jeopardise the “success” of PAs (Bennett et al., 2015; Bennett, 2016).

The inclusion of social dimensions in PA management effectiveness evaluation has the potential of reconciling the relationship between local communities and conservation and improve the chances of effective management (Leisher et al., 2013; Bennett et al., 2015; Corrigan et al., 2017). Thus, it is important to understand social impacts that are a resultant of conservation practices in order to enhance a positive relationship between ecosystems, local communities and human wellbeing (Harker et al., 2022). Some of the social dimensions of conservation impacts include poverty, physical and emotional health, wellbeing, development, communication, education, cultural identity and access to resources (Queiros, 2022). Kareiva et al. (2014) suggest that there is a considerable need for the adoption of social science practices in conservation, which in turn can promote an increased use of social indicators in management effectiveness evaluations. Though social indicators are increasingly being introduced in PA management effectiveness evaluations, there is still the challenge of formulating indicators that capture the complex nature of human values and other factors such as culture, individuality, and different community make-ups (Hicks et al., 2016).

The limited focus on the socio-cultural conceptions of conservation impacts can be attributed to the long-documented history of mostly assigning one conventional value form of biodiversity – the economic (Nijkamp et al., 2008; Martino and Kenter, 2023; Yose et al., 2023). The notion of economic evaluation has been instrumental in informing frameworks for estimating the value of biodiversity and related ecosystem services to human well-being. Often this quantitative framing of value is often used to form the basis for biodiversity protection using various tools, such as PAs,

with significant social impacts on local communities (Pisani et al., 2021). However, despite its inroads in biodiversity conservation debates and policy, persisting environmental degradation impacts and concerns have placed the effectiveness of this framing under scrutiny (Muradian and Gómez-Baggethun, 2021). In response, there are increasing calls for a shift from quantitative framing of the value of biodiversity (and by extension impacts of loss of biodiversity) to a morality of care (Cortes-Capano et al., 2022), suggesting that social wellbeing approaches are gaining traction in conservation science and practice (Zafra-Calvo et al., 2017; Chevallier, 2021). Despite these challenges, Jones et al. (2017) emphasize the importance of social indicators in PA management due to the impact of measuring both quantitative and qualitative outcomes for policymaking. Weeratunge et al. (2014) suggest that wellbeing-centric frameworks as social indicators can cross-scale and incorporate human values and aspirations. Components of such wellbeing-centric approaches include materialistic, relational, and subjective dimensions such as living standards, physical, mental and environmental health, social networks, education, governance, and security (Leisher et al., 2013; Weeratunge et al., 2014). Social indicators that are informed by wellbeing are crucial in addressing the gaps that exist in PA management evaluations, thus identifying and developing such is fundamental to the evaluation of whether PA goals and objectives are achieved (Pomeroy et al., 2005).

Zafra-Calvo et al. (2017) argue that while there is a considerable need for a systematic approach to assessing social equity in PAs, there is a mismatch in actualising that in real life applications due to the limited use of social indicators. This means that when formulating indicators, there needs to be an emphasis on all the three dimensions of equity namely procedural, distributional and recognition (Martin et al., 2016; Franks et al., 2016, 2018). Equity is a good element of PA governance and consequently management in that it highlights three dimensions that could potentially lead to effective management (Martin et al., 2016). First, 'recognition' refers to the intentional highlighting of certain social aspects embedded in the setting of conservation such as culture, traditions, and identity. Second, 'procedure' relates to how conservation decisions are made, who gets to participate and to what extent is their participation. Lastly, 'distribution' refers to the different stakeholders involved directly or not, what materialistic "benefits" they get, and how the costs and responsibilities are shared. As argued previously, evaluation of PA effectiveness tends to focus more on distributional aspects than on recognition and procedure. Further, the use of qualitative parameters that highlight recognition and procedural dimensions can provide the

much-needed baseline to assess the effectiveness of PAs in developing countries where many conservation projects either have limited funding or other resources (Webb et al., 2004; Mudge, 2018) or when they do, funders and donors require objective and quantifiable measures of performance (Chapman et al., 2016).

This chapter seeks to provide a review of social indicators used to measure performance of co-management arrangements in the literature. The significance of this research is twofold. First, it speaks to the moral and ethical obligation for conservation to not harm nature, people, and the relationship that exists between the two entities (CBD, 2010; IUCN WCPA, 2019). Second, the study may offer useful insights into the conceptual progress (or lack thereof) of social equity research in PA management needed to inform a wellbeing approach to co-management of PAs. Given this background, the main objective of this chapter is to examine the state of research and conceptual advances on social indicators of conservation effectiveness in co-managed PAs.

2.2 Methods

2.2.1. Data collection

A scoping literature review was conducted between March and June 2003 to identify and synthesise published literature on social indicators of PA effectiveness, specifically looking at the co-management approach. Scoping reviews allow for the reduction of literature bias and highlight knowledge development (Petticrew and Roberts, 2008; d'Armengol et al., 2018; Parsons et al., 2021). The study followed Arksey and O'Malley (2005)'s process of conducting a systematic literature review.

To do this, two questions were used to guide the review in terms of the search criteria, analysis of the literature, and relevance to the overall research study. Literature search for the review was informed by the following question: What are the social indicators used in co-managed PAs? What principles of "equity" (using Schrekenberg et al., 2016) do the mentioned social indicators fall under? The abstract and indexing online databases SCOPUS and Web of Science, the largest global online database and commonly used in social ecology system reviews were used obtain the relevant literature for the study (Biesbroek et al., 2018). The search covered a period of over 33 years (January 1990 to June 2023) and focused on peer reviewed research articles. Since

participatory conservation management approaches gained more traction around the 1990s, the search range was selected to track insights into the transformation (if there is any) in the published literature. The search strings included a combination of keywords that are part of the first question. Search strings for publications in the databases were performed using the following keywords, combination of words, or phrases: “social indicator” OR “socio-economic indicators” and “protected areas” or “co-management” and “evaluate” and “effectiveness” etc. (Table 2.1). Differences in the keyword order in each search engine followed the engine’s command guidelines. The data collection and screening performances are summarised in Figure 2.1. The initial search returned 151 publications and after screening using the inclusion criteria, 23 publications were included.

Publications were examined using the following criteria:

- Due to Web of Science and Scopus not generally considered repositories for grey literature such as management plans and also do not index all academic theses, this review only focused on journal articles and book chapters.
- The study needed to contain the following details for accountability; author(s) names, year of publication, title, journal name or name of institution and reference type (i.e., book chapter, journal article, thesis, official government document, and management document)
- The articles must be in English.
- Articles referring to other types of management and/or governance such as adaptive management, adaptive governance, community-based natural resources management (CBNRM), integrated management, and common-pool resources management were considered only if they overlapped with co-management.

Table 2.1 Database engines and search commands used in literature search

Database	**Search command used**
SCOPUS	TITLE-ABS-KEY(indicator* OR "socio-economic indicator*" or "socioeconomic indicator*" OR "social indicator*") AND TITLE-ABS-KEY("co-manag*" OR "comanag*" OR "joint manag*" OR "collaborative manag*" OR "participatory manag*" OR "community-based manag*" OR "common-pool resource* manag*") AND TITLE-ABS-KEY("protected area*" OR "conservation area*" OR "conservation zone" OR "conservation park*" OR "nature reserve*" OR "national park*" OR park* OR "wildlife reserve*" OR "wildlife sanctuar*" OR "game reserve*" OR bioreserve* OR "safari park*" OR reserve* OR "national forest*" OR "wildlife refuge*" OR "natural preserve*" OR "game preserve*" OR "forest park*" OR "game refuge*" OR "indigenous park*" OR "national monument*") AND TITLE-ABS-KEY("success" OR "fail*" OR "effective*" OR "evaluat*" OR "perform*")
Web of Science	ALL=("indicator*" OR "socio-economic indicator*" OR "socioeconomic indicator*" OR "social indicator*") AND ALL=("co-manag*" OR "comanag*" OR "joint manag*" OR "collaborative manag*" OR "participatory manag*" OR "community-based manag*" OR "common-pool resource* manag*") AND ALL=("protected area*" OR "conservation area*" OR "conservation zone" OR "conservation park*" OR "nature reserve*" OR "national park*" OR park* OR "wildlife reserve*" OR "wildlife sanctuar*" OR "game reserve*" OR bioreserve* OR "safari park*" OR reserve* OR "national forest*" OR "wildlife refuge*" OR "natural preserve*" OR "game preserve*" OR "forest park*" OR "game refuge*" OR "indigenous park*" OR "national monument*") AND ALL=("success" OR "fail*" OR "effective*" OR "evaluat*" OR "perform*")

Following the search on the two databases, publications were scanned using the inclusion criteria (Figure 1). The review followed a flexible screening process to retain publications through careful reading of publication titles and abstracts. All articles that were deemed irrelevant were excluded. The review looked to include publications that: (1) clearly focused on the evaluation of co-managed PAs (or similar approaches in the mentioned search strings), (2) mentioned socio-economic indicators in relation to conservation management effectiveness and (3) publications that clearly reviewed the performance of PAs. The process of formulating search strings, searching for literature, screening and analysis was continuous from November 2022 to July 2023.

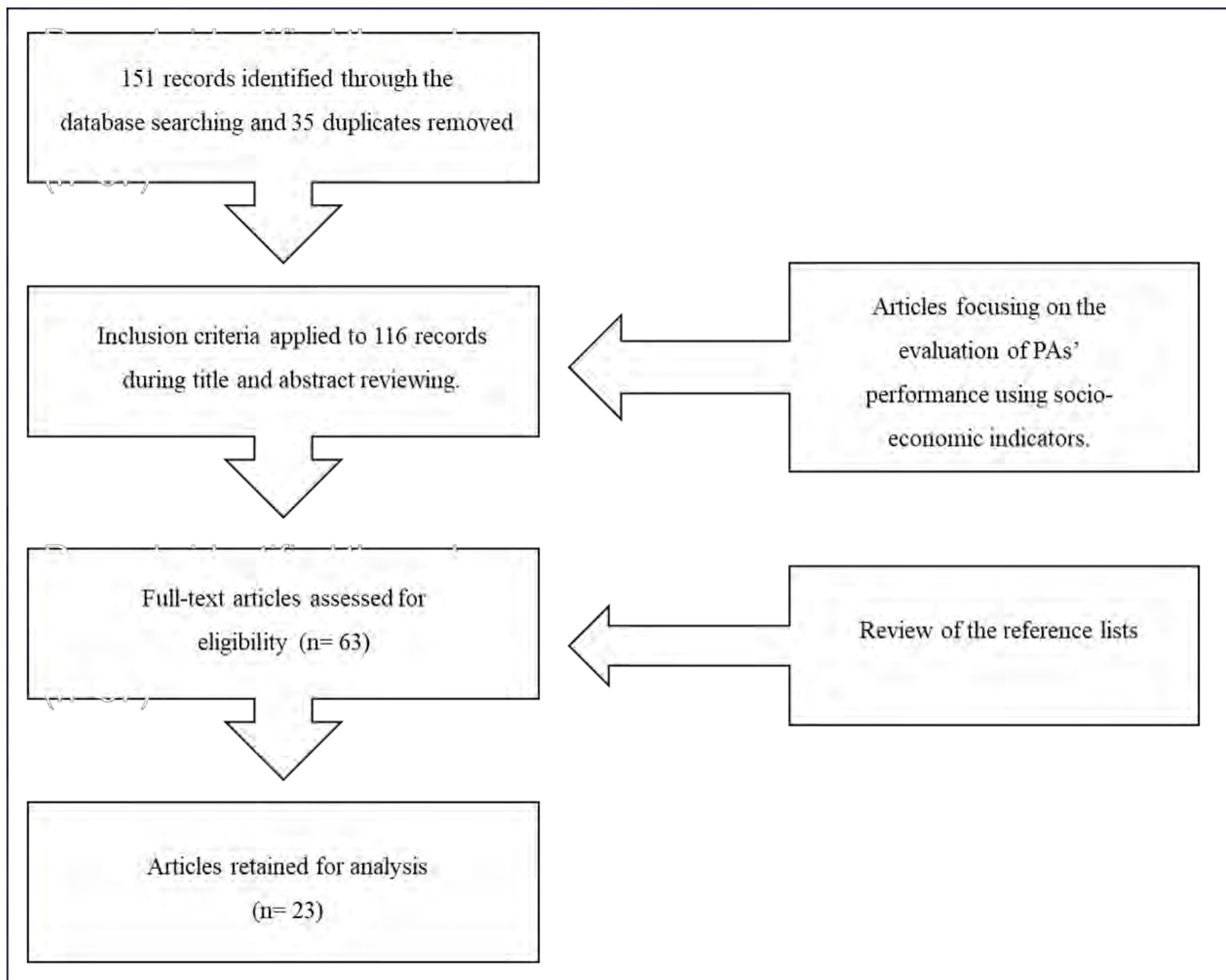

Figure 2.1 Flow map for steps taken in the review

2.2.2 Data analysis

Descriptive analysis was performed and the results were organised in a table containing the bibliographic references, authors, article title, and year of publication. The articles that met the inclusion criteria were analysed using qualitative thematic analysis. This approach allowed for flexibility in that the analysis was not linear and moved back and forth between the different steps to ensure high-quality data extraction and coding. Indicators were manually extracted from the analytical notes that were made during the inclusion and exclusion steps, by identifying phrases, sentences, words or terms that related to indicators. To explore further insights into the articles, the indicators were analysed to respond to the following questions: What are the different kinds of socio-economic indicators discussed or addressed in the articles? Which principles of equity are the indicators based on? The second question was answered using the widely used dimensions of equity, following Schreckenberg et al. (2016). The equity framework is made up of three dimensions (recognitional, procedural and distributional) and 16 principles that inform the conditions to enable equitable PA management.

2.2.3 Limitations

Despite the rigorous efforts to conduct a review that includes all relevant literature on the research subject, there are potential limitations that should be considered. First, there is no one way of conducting a scoping review, hence the need to be transparent about all the steps so that the process can be replicated (Gottlieb et al., 2021). Second, some relevant literature might have been left out due to technical issues such as indexing errors and search terms and criteria used. Third, some literature relevant to the study might have been left out of the analysis due to the time the review was conducted and therefore would not have been published at the time of this review.

2.3 Results and Discussion

2.3.1 Composition of data

A total of 23 articles met the inclusion criteria. The number of publications discussing the use of socio-economic indicators to assess the effectiveness of co-managed PAs' management saw an increase between 2011 and 2020 (Table 2.2). Notably, none of the reviewed articles were published between 1990 to 2000. This suggests that research focusing on assessments of the effectiveness of

co-managed conservation areas increased post the year 2000s (Table 2.2). All publications that met the inclusion criteria were journal articles focusing on terrestrial protected areas, marine protected areas or coastal/fisheries, or both (Table 2.2). Of the 23 articles, 70% (n=16) were case studies and 30% (n=7) were literature review or synthesis.

Table 2.2 General description of the reviewed articles (n = 23)

Categorisation	**Proportion (%)**
Type of publication	
● Journal article	100
Period of publication	
● 1990-2000	-
● 2001-2010	26
● 2011-2020	57
● Post 2020	17
Type of conservation	
● Terrestrial protected areas	35
● Marine protected areas/fisheries management/coastal management	57
● Combination	9
Overall article approach	
● Case study	70
● Synthesis/literature review	30

Countries/regions with more than one article that met the inclusion criteria included the Philippines (n=6), Mexico (n=2), Australia (n=2), Canada and Indonesia (n=2). Three articles focused on the global scale and those were review articles, while one article focused on the Western Pacific region, but did not specify the countries. Other focus countries with one article each included South Africa, Cambodia, Papua New Guinea and Uruguay. Notably, many of the articles focused on regions of the Global South. This could be attributed to the ongoing debates on conservation and poverty intersection in the Global South, and that it is where the trade-offs of conservation goals and economic objectives are said to be most severe (D'Alberto et al., 2022).

2.3.2 Dominant indicator themes identified

Social indicators are multifaceted, and they overlap. This means that some of the indicators under one theme can also fall under a different theme. However, for the purpose of this study, indicators were solely categorised into different themes based on their similarities (e.g., indicators referring to different forms of participation were categorised as participation). The key social indicator themes that emerged from the review were economic benefits (n=20), participation (n=20), resource access (n=14), conflict and dispute resolution, compliance and good governance, devolution of power (n=13, each), knowledge-sharing and education (n=10), collaboration (n=8), and perceptions (n=8). Other themes that emerged from the review included social networks and communication (n=5), culture and traditional knowledge systems (TKS) preservation (n=4), and human well-being (n=4). These were discussed across different types of conservation approaches such as terrestrial PAs, marine PAs and fisheries management in different regions.

2.3.2.1 Economic benefits

Most prevalent in the articles were assessment tools and indicators that looked at the material outcomes of conservation. These included economic benefits and resources access. Examples of economic benefits included household income (Webb et al., 2004; Evans et al., 2011; Whitehouse and Fowler, 2018), additional or supplemental livelihood strategies (McClanahan et al., 2006; Timko and Satterfield, 2008; Gurney et al., 2015; Kura et al., 2023), employment opportunities (Santana-Medina et al., 2013; Stacey et al., 2013; Hernandez et al., 2022), and economic performance of the PAs (Andalecio, 2011). Here, “economic performance” refers to the financial performance of the PA. Studies that highlighted resource access indicators spoke to the idea of fair and equitable access, either to extract resources or for recreational or relational purposes (e.g., Pajaro et al., 2010; Mudge, 2018). Indicators that typically assess economic benefits criterion relate to the objective of PAs to support community livelihoods; this is especially important in a co-management arrangement (Loury and Ansley, 2020). The use of these indicators can be used to determine communities’ dependence on natural resources, both in and outside the boundaries of PAs. This measure of dependence can also be used to determine communities’ vulnerability to poverty, benefit-sharing and overall impacts of conservation (Camargo et al., 2009; Weigel et al., 2015). Resource access has the potential for local communities to diversify their livelihood activities, get additional income and improve their overall quality of life (Chechina et al., 2018).

For example, in Uganda participating households in a co-management arrangement of the Budongo forest were able to legally source various forest resources such as firewood, thatch material, food and herbs for subsistence (Mawa et al., 2022). Similarly, Tadesse et al. (2017) report that participating households in the co-management of Gedradima forest in Ethiopia benefitted from resources such as firewood, building material and medicinal plants.

2.3.2.2 Community involvement

For most (87%) of the reviewed articles, participation was a common indicator for measuring conservation performance. Several articles (n=20) used the level of involvement by local people in co-management and resource use, as an evaluation metric for the performance of conservation (Maliao et al., 2009; Whitehouse and Fowler, 2018). For example, Pajaro et al. (2010), Izurieta et al. (2011) and Teitelbaum (2014) show that the involvement of local stakeholders is crucial at all stages of conservation management, i.e., planning, implementation, monitoring, and evaluation. Izurieta et al. (2011) emphasise the importance of local stakeholders' participation, especially in the formulation and identification of monitoring and evaluation criteria and indicators. Indicators used in the literature to measure participation include the frequency of participation (i.e., how often are stakeholders consulted, request for meetings, meetings held) (e.g. Trimble and Plummer, 2018), the proportion of stakeholders, particularly local people who participate (e.g. McClanahan et al., 2006), types of participation (i.e. consultations, 'supporting' by one stakeholder, or information), and influence in participation (i.e., how many proposed decisions by the local community were taken into consideration or implemented) (e.g. Maliao and Polohan, 2008; Maliao et al., 2009; Whitehouse and Fowler, 2018). Notably, studies highlight that the inclusion of women should be a standalone measure and should be accounted for separately when evaluating general local communities' participation (Andalecio 2011; Mudge, 2018). This stems from the exclusion of women from in conservation and allows them to not just occupy stand-in roles but to fully participate and engage in conservation management, and to ensure equitability (Turner et al., 2014; Mudge, 2018).

Collaboration is the other criteria that some articles (n=8) highlight in the evaluation of PA performance. Collaboration indicators were mostly mentioned in fisheries management with the cooperation between resource users, government officials and other stakeholders, and the working

relationship among diverse stakeholders (Webb et al., 2004; Izurieta et al., 2011; Stacey et al., 2013). These included projects in which both government officials and conservation agencies worked collaboratively with fisheries stakeholders to guard the conservation areas and to come up with solutions to help reduce biodiversity decline. Despite several articles that speak about community involvement in co-management, this is seldom achieved in reality. In many cases of co-management, participation of local communities is used to just 'tick a few boxes'. In most cases, whilst the conditions, roles and responsibilities of stakeholders are outlined, there are several issues that hinder their implementation. For example, Colua de Oliveira et al. (2021) highlight some of these issues in the Limpopo National Park, Mozambique. First, they note that despite the need to provide local people with a sense of ownership, the co-management arrangement, is still dependent on the park's administration. This means that how people participate, where and when is dependent on the park's administration, taking away any form of 'power' that they have in decision making. This speaks to the power dynamics that still persist in co-management (e.g., Mutanga et al., 2015; Thondhlana and Cundill, 2017; Moyo, 2023). Second is the issue of representation. Local people have a limited influence in who gets to represent them in the park's co-management committee and those who ultimately get to represent their communities are faced with the first challenge (Thondhlana et al., 2016; Tshidzumba et al., 2018; Colua de Oliveira et al., 2021). Ultimately, this creates distrust across levels with local people feeling like their interests are not represented. Last, there is limited capacity for the long-term sustainability of the committee due to the lack of investment – such as educational platforms and access to information in the region's spoken language - to its members (Colua de Oliveira et al., 2021).

2.3.2.3 Stakeholder empowerment

Given the promises of co-management, the analysis revealed that processes or outcomes such as the devolution of power (n=13), culture and traditional knowledge systems preservation (n=4), knowledge sharing, and education (n=10) are some of the criteria in which many indicators are formulated. A common indicator used in the literature to assess culture and TKS preservation is the exchange or transfer of traditional (or Indigenous) and western knowledge in PA co-management (Izurieta et al., 2011; Stacey et al., 2013). Knowledge sharing and education indicators include information availability, cross-knowledge sharing (traditional and western knowledge sharing), 'top-down' information sharing and positive attitudes by Indigenous people

towards western knowledge (Pajaro et al., 2010; Evans et al., 2011; Izurieta et al., 2011; Mudge, 2018). To foster meaningful and impactful empowerment for all stakeholders involved in co-management, it is crucial that attention be directed to past experiences of those who have incurred conservations costs such as displacements, disruption of traditional knowledge systems, and socio-political exploitations through inequitable conservation brought by colonisation, which continue to persist currently (Lele et al., 2006; Woodhouse et al., 2022). This has great implications for the processes of inclusion, empowerment and collaboration because it informs how people perceive conservation approaches and consequently their support for them (Woodhouse et al., 2022). However, this is rendered difficult by the fact that many political and national frameworks do not cater for the recognition of the cultural and traditional practices of Indigenous people and local communities, which subsequently means that conservation policies fail to also recognise Indigenous people and local communities (Martin, 2017). This is concerning because it is evident that even with the introduction of approaches that seek to address these injustices, conservation still mirrors dated ideologies. This calls for an emphasis in shifting the narrative in how the co-management processes are facilitated. The current review reveals that in addition to the other issues related to co-management, central to many of them is capacity. It is difficult for people to have a sense of ownership (i.e., what co-management promises) over something when things are not done their way, or their way is an add-on to pre-determined objectives. This could stem from how co-management is said to have been historically implemented – using rigid universal prescriptions (Lockwood et al., 2009; Thondhlana et al., 2016). If we are to see any impactful changes in co-management, at least for local communities, there needs to be a shift in how the approach is implemented. Contexts and histories at which these arrangements are formed should inform how co-management is facilitated. Consistent with its promises, there should be agency in facilitating opportunities for local to fully participate. This goes back to the need for national policies and frameworks to cater for the recognition of Indigenous people and local communities.

2.3.2.4 Governance

The operations and functioning of PAs are the result of management decisions, processes and outcomes, therefore, the consideration of governance indicators is crucial when evaluating PA effectiveness (Loury and Ainsley, 2020). Indicator themes that encompassed governance in the articles included compliance (n=13), and conflict and dispute management (n=13) (e.g., Maliao

and Polohan, 2007; Andalecio, 2011; Villasenor-Derbez et al., 2017; Mudge, 2018). Conflict and dispute management included institutions and processes that allow for the resolution or mitigation of conflicting views among stakeholders (Jupiter et al., 2017). For example, Júnior et al. (2016) attribute the need and presence of conflict resolution indicators to the fact that conflicts are one of the major challenges to co-managed PAs effectiveness. Conflicts can emerge from issues such as nonaccrual of benefits, including restricted access to natural resources, consequently limiting livelihood opportunities (Maliao et al., 2009; Thondhlana et al., 2016; Soliku and Schraml, 2020; Mawa et al., 2022). Conflicts can also arise from lack of communication (Camargo et al., 2009; Basupi et al., 2019). Stacey et al. (2013) found that the lack of communication in PAs in Northern Australia led to distrust between stakeholders of co-management, and in turn led to heighted conflicts. Governance indicators also looked at whether formal structures to resolve conflicts and disputes were available, and whether those were treated fairly (Maliao et al., 2009; Jupiter et al., 2017). Jupiter et al. (2017) assessed whether the conflict resolution measures took into consideration the rights and customs of Indigenous people. It is however challenging to evaluate the indicator because it requires nuanced understanding of a particular context, stakeholders involved, and the complexity of the issues set to be addressed (Loury and Ainsley, 2020).

Compliance indicators assessed whether rules and regulations set for the management of PAs were adhered to, measured by the number of cases reported, efforts to employ security measures (i.e., surveillance, patrols, etc.) (e.g., Jupiter et al., 2017), and frequency and prevalence of occurrence. Mudge (2018) suggests that biodiversity conservation is less likely to be successful if there is a lack of compliance. Pollnac et al. (2001) argue that reported cases of rule and regulation violations are rather indicative of enforcement strength rather than compliance. Nonetheless, Loury and Ainsley (2020) argue that the indicator is a great tool to evaluate whether PAs can function to fulfil their goals and objectives. The issue of compliance can be closely associated with how PAs are perceived (Gallacher et al., 2016; Loury and Ansley, 2020; Sena-Vittini et al., 2023). This means that people need to be aware of the rules and regulations to comply with them. Even that cannot guarantee compliance, depending on the level of support from the local people (Loury and Ansley, 2020). These results reveal an interesting dimension into the governance indicators that despite the quantitative measures used to track compliance, there are numerous issues that underlie this criterion. Bergseth et al. (2013) suggest that several factors can influence compliance behaviour including the involvement of stakeholders in management practices, perceived legitimacy of

regulations, social norms and penalty costs. The reviewed publications reveal a bias towards practical and technical interventions when assessing compliance thus revealing a gap for the need of understanding the drivers of compliance (or lack thereof) such as perceptions. This is particularly important in a co-management arrangement where the grievances of local people are meant to be heard. Loury and Ainsley (2020) argue that while there is value in detecting non-compliance, it is only a single part of enforcement, highlighting the need for holistic approaches in how to assess compliance.

2.3.2.5 Social interactions and wellbeing

From the reviewed articles, it was found that the most form of social interactions and wellbeing indicators include perceptions (n=8), social networks and communication (n=5), and human wellbeing (n=4). The ability of stakeholders to effectively communicate is suggested to be a crucial factor that needs monitoring in co-managed conservation management. Stacey et al. (2013) and Khan et al. (2022) suggest that the lack of communication often leads to distrust and other negative perceptions. Khan et al. (2022) also suggest that poor interactions between PA authorities and local communities create mistrust. Lack of trust in co-management is said to be one of the many factors leading to conservation ineffectiveness (De Pourcq et al., 2015). Trust is said to be an essential tool for building harmony among stakeholders in participatory management processes (Berkes, 2009; Idrissou et al., 2013). Indicators that speak to human wellbeing included quantifying the health improvement of local stakeholders, recognition of non-economic benefits, improved quality of life, and safety of resource users (Trimble and Plummer, 2018; Hernandez et al., 2022). The Millennium Ecosystem Assessment (2005) identified and highlighted five dimensions of human wellbeing namely, material benefits, health, good social relationships, security, and freedom and choice. These can be seen in some of the reviewed publications highlighted in this study. The limited use of these indicators is interesting as there have been some critiques of conservation practices for the lack of understanding social structures, values and the historical context in which they are set (Dawson and Martin, 2015). There is a growing interest in scholarship that recognises that the success of conservation efforts is strongly dependent on many of these social interactions and wellbeing factors (Howe et al., 2014; Beauchamp et al., 2018). Further, there has been an increase in the incorporation of human wellbeing as a key consideration in designing conservation policies and evaluating impacts (Agarwala et al., 2014; Fry et al., 2017). There is a need for an

increased use of wellbeing centric indicators in co-managed PAs evaluations because they can allow conservation agencies, funders, researchers, local communities and other interested parties to acknowledge and evaluate the trade-offs that exist in conservation and facilitate a shift from or reduced reliance on material metrics to evaluation conservation performance (Weeratunge et al., 2014).

2.3.3 Indicators' link to principles of equity

While all the proposed principles of equity play an important role in PA management, the reviewed literature suggests that many PA management authorities focus on some principles more than others (Table 2.3). Schreckenberg et al. (2016) explain the set of principles in which the dimensions of equity can be achieved. Out of the 16 principles, 12 were explored in the reviewed literature. Most of the papers focused on principles of the procedural dimension - participation (n=19) and distributional dimension – benefit acquisition (n=19). Other frequently explored principles included recognition of diverse stakeholders (n=10), accountability measures (n=11), transparency and information sharing (n=10) and access to justice and conflict resolution measures (n=9). While it is evident that many of the reviewed articles focus more on the distributive dimension overall, it is also apparent that the procedural dimension is on the radar. However, it is the recognitional dimension that underpins true equity outcomes, and that has been a challenge in co-management areas, even though they are 'recognitional' in their design.

Table 2.3 Frequency of occurrence of equity principles in reviewed articles

Key dimensions of equity[1]	Principles of equity[1]	Frequency of occurrence in reviewed articles	Key source references
Recognition	1. Recognition and respect for human rights	1	Villasenor-Derbez et al. (2018)
	2. Recognition and respect for statutory and customary property rights	1	Timko and Satterfield (2008)
	3. Recognition and respect for the rights of Indigenous people, women and marginalised groups	4	Izurieta et al. (2011); Stacey et al. (2013); Jupiter et al. (2017); Andalecio (2011)
	4. Recognition of different identities, values, knowledge systems and institutions	4	Jupiter et al. (2017); Huber et al. (2023)
	5. Recognition of all relevant actors and their diverse interests, capacities and powers to influence	10	Webb et al. (2004); Maliao and Polohan (2008); Malio et al. (2009); Trimble and Plummer (2018); Mudge (2018); Whitehouse and Fowler (2018)
	6. Non-discrimination by age, ethnic origin, language, gender, class and beliefs	-	-
Procedure	7. Full and effective participation of all relevant actors in decision-making	20	Teitelbaum (2014); Ortega-Argueta et al. (2016); Khan et al. (2020); Trimble and Plummer (2018); Mudge

			(2018); Evans et al. (2011); Huber et al. (2023)
	8. Clearly defined and agreed responsibilities of actors	2	Izurieta et al. (2011); Jupiter et al. (2017)
	9. Accountability for actions and inactions	11	Hernandez et al. (2022); McClanahan et al. (2006); Maliao and Polohan (2008); Andalecio (2011); Pajaro et al. (2010)
	10. Access to justice, including an effective dispute-resolution process	9	Ortega-Argueta (2016); Jupiter et al. (2017); Andalecio (2011); Whitehouse and Fowler (2018); Maliao et al. (2009)
	11. Transparency supported by timely access to relevant information in appropriate forms	10	Stacey et al. (2013); Ortega-Argueta et al. (2016); Mudge (2018); Evans et al. (2011); Pajaro et al. (2010)
	12. Free, prior and informed consent for actions that may affect the property rights of Indigenous peoples and local communities	-	-
Distribution	13. Identification and assessment of costs, benefits, and risks and their distribution and trade-offs	3	Khan et al. (2020); Jupiter et al. (2017); Kura et al. (2023)
	14. Effective mitigation of any costs to Indigenous peoples and local communities	-	-

	15. Benefits shared among relevant actors according to an agreed criteria	20	Santana-Medina et al. (2013); Maliao and Polohan (2008); Kura et al. (2023); Pajaro et al. (2010); Whitehouse and Fowler (2018)
	16. Benefits to present generations do not compromise benefits to future generations	-	-

[1] Principles of equity taken from Schreckenberg et al., 2016 – "Unpacking equity for protected area conservation"

2.3.3.1 Recognition

The recognitional dimension of equity acknowledges the importance of recognising diverse and distinctive social and cultural values, knowledge systems, institutions and identities (Martin et al., 2016; Schreckenberg et al., 2016). Under this dimension, all principles, except principle 6 were highlighted, with many studies focusing on principle 5 - "Recognition of all relevant actors and their diverse interests, capacities and powers to influence". The principle centres on inclusivity in decision making and focuses on two main points. First, the recognition of diverse interests. This can be seen in many co-management arrangements by the presence advisory boards or committees (i.e., Community Property Associations or Trustees in South Africa, Tshidzumba et al., 2018), acting as a relevant platform for representing and expressing different views. However, these platforms do not always represent the best interests of the marginalised and capture the full extent of all stakeholders involved due to their composition – they are made up of a few individuals from the communities and in some instances the community representatives tend to be captured by those in power (Thondhlana et al., 2016; Tshidzumba et al., 2018). The second focus of the principle is the influence and capacity of those whose interests have been recognised. This was said to be intrinsic for gaining support for conservation efforts from local people (Izurieta et al., 2011; Stacey et al., 2013). This was corroborated by Titumir and Afrin (2018) who argued that local communities contributed significantly and positively to co-management of PAs when their culture and traditions were recognised and were treated equally. A study by Bennett et al. (2020) reported a positive correlation between marine PAs resource-users' perceptions towards indicators that

highlighted recognitional equity. This is further facilitated by the provisions of co-management arrangements where the participation and influence of local people is recognised (Carlsson and Berkes, 2005). However, it has been argued that the implementation of co-management in many countries does not match the provisions made in writing (Njaya, 2007; Cundill et al., 2013). For example, a global study done by Zafra-Calvo et al. (2019) reported that indeed there is a lack of acknowledgement and appreciation for Indigenous People and local communities in PA co-management.

Altogether, some of the reviewed articles highlight some principles of recognitional equity in co-management effectiveness evaluation indicators although with a concentration on one - the recognition of all relevant stakeholders (e.g., Trimble and Plummer, 2018; Mudge, 2018; Whitehouse and Fowler, 2018). However, given the complex and diverse nature of stakeholders' needs, interests, histories, and desires, the available literature does not sufficiently address the need for recognitional equity in co-managed conservation evaluations. A notable gap can be seen in the lack of recognising the rights of marginalised groups such as Indigenous people and women, and of different identities, values, knowledge systems and institutions. Drawing on the case of South Africa for example, where the premise of co-management is to redress past injustices towards Indigenous people, it is plausible to argue that there needs to be an emphasis on the recognitional dimension of equity. For example, many of the reported conflicts in co-management arrangements in the country stem from the lack of recognition of local people (Cundill et al., 2013; Thondhlana et al., 2016).

2.3.3.2 Procedure

The procedural dimension of equity refers to the processes that inform how decisions are made and who is involved in those processes (Martin et al., 2016; Schreckenberg et al., 2016). The reviewed publications highlighted indicators that spoke to all the principles, except principle 12 - "Free, prior and informed consent for actions that may affect the property rights of Indigenous peoples and local communities". The most highlighted principle under this dimension, principle 7 "Full and effective participation of all relevant actors in decision-making" provides some sort of security for all parties involved in PAs management. This gives Indigenous people and local communities and other marginalised groups power over management decisions. Participation is

one of the most debated issues when it comes to co-management (e.g., Trimble and Plummer, 2018). This comes as a result of the debates on what exactly "participation" means and to whom? These questions closely relate to recognitional equity. Other principles evident, 9, 10, and 11 speak about accountability, conflict resolution and transparency, respectively. The existence of conflict resolution efforts can help minimize the inequalities and power dynamics that exist in co-management. Outside of external conflicts, these structures can help resolve internal conflicts and improve management processes (Jupiter et al., 2017, see 2.3.2.2).

2.3.3.3 Distribution

The distributional dimension of equity in PAs is concerned with how the costs and benefits are measured, and distributed among stakeholders (Martin et al., 2016; Schreckenberg et al., 2016). Under this dimension, the reviewed publications only highlighted two principles, 13 - "Identification and assessment of costs, benefits, and risks and their distribution and trade-offs", and 15 - "Benefits shared among relevant actors according to an agreed criterion" (Table 2.3). There is a strong need for conservation managers to integrate all dimensions of equity while placing an emphasis on procedural and recognitional dimensions because of the causal and cascading effects they have on the "outcome" or "output", which in this case are the benefits acquired from conservation. This is corroborated by Ward et al. (2018) who reported that PAs co-management-imposed restrictions such as access to resources, which in turn affected local livelihoods. This relates to the non-recognition of local people as key stakeholders in co-management and consequently conservation success, which has had an effect on people being unable to acquire certain benefits.

2.4 Advancing equity research in co-management

The review shows that social-economic indicators are mainly analysed from two perspectives – participation and economic benefits with a key focus on material benefits of a co-management agreement such as natural resource use, employment and tourism opportunities. The increase in literature on social indicators from 2011 onwards suggests that performance evaluation of co-managed PAs using social indicators is an area of research that is gaining traction globally, but the picture remains incomplete. The major gaps in the literature can be summarised as follows: (1) a focus on economic and quantifiable indicators than qualitative social indicators, (2) an abstract use

of participation as an indicator (i.e., participation without influence), and (3) a limited focus on the Global North context, hence a geographic Global South – Global North gradient is poorly understood.

First, there is relatively more research devoted to material or economic benefits than social indicators for measuring co-management outcomes in PAs. Economic benefits present an opportunity to understand what stakeholders get from co-management arrangements. Undoubtedly, this is important especially in contexts where local claimant communities are directly dependent on natural resources and land-based activities for their livelihoods. In other words, the use of economic indicators is important in advancing our understanding of the various ways in which communities benefit from co-management and how those benefits are distributed but does not account for other social dimensions that are important for addressing equity and social justice in conservation. Further, the overreliance on economic parameters to evaluate conservation performance, particularly in a co-management context, misses many dimensions that are intertwined in the complexities that exist in conservation management. Such complexities can be seen in the different structures and institutions that govern the co-management of conservation. For example, co-management consists of diverse stakeholders whose interests differ for various reasons, thus making the process of management non-linear. For many of these instances, conflict emerges and the need for measures to address and monitor these conflicts arises (Jupiter et al., 2017). Another factor to consider is that when the economic benefits can no longer be sustained, there is a high chance that community buy-in may significantly be reduced, and this has dire consequences for the success of conservation (Chevallier, 2021). Further, despite the dominance of the use of economic parameters to evaluate conservation success, there are still many cases where conservation has failed to provide the promised benefits (Thondhlana et al., 2016; Colua de Oliveira et al., 2021; Mawa et al., 2021), and when it does, the benefits are distributed unevenly (Ward et al., 2018). This calls for an urgent shift in rethinking co-management performance evaluation, particularly given that benefit sharing is multifaceted and how it is done or not, can have other social impacts.

Second, while it is commendable that many of the reviewed literature use participation as an indicator, seldom do they reveal the level and influence of said participation, and measures put in place to ensure equitable participation. Undoubtedly, participation of all stakeholders is crucial in

co-management success, however, it cannot fully account for its equitability. Given the complexity and diversity of stakeholders (even those of the same group), we cannot rely on just participation to provide insights into the efforts put into co-management. There is a missing link between this indicator and several other social dimensions that, even in their subjective manner, can better inform us about equity in co-management. The limited publications on non-material and subjective indicators make it difficult to draw conclusions on what constitutes co-management success. Consequently, this reveals a set of additional questions such as what are the effects of excluding social indicators for measuring co-management success and conservation outcomes? Can the understanding of social indicators such as perceptions aid in the mitigation of conflicts in many co-managed PAs, and consequently lead to socially just and effective conservation management? The answers to these questions can greatly increase our understanding of various factors that contribute to equitable and socially just conservation management. This means that more research that explores social dimensions as indicators of effective co-management is needed to advance our understanding of co-management arrangements. Another key issue that is evident here is the persistence of conflicts in co-managed PAs, widely documented in the Global South (e.g., Thondhlana et al., 2016; Maluleke, 2018). Because of this, compliance is used as an effectiveness evaluation indicator because of its direct relation to conflict. When there is conflict, in many times than not, conservation management is perceived negatively and there is less compliance with rules and regulations by marginalised group as a form of protest, often referred to as 'weapons of the weak' (Loury and Ansley, 2020; Sena-Vittini et al., 2023). Despite the persistence of conflicts in conservation co-management, not many of the reviewed studies focused on perceptions as an indicator of people's assessment of conservation outcomes in co-managed PAs.

Third, the limited focus of social indicators in the Global North might suggests that we might be missing important nuances of the social dimensions of conservation outcomes in different contexts. Given the complex nature of the term 'equity', it is crucial to be sensitive in how it is defined and what elements it consists of, how is applied and how its application is tracked and measured in conservation efforts (Forsyth, 2015). In this study, the proposed synthesis of equity provides a significant overview of some crucial aspects to consider when employing conservation efforts meaning that conservation agencies, institutions and governments should strive for a balance between the different dimensions. Alternatively, the focus of these dimensions should primarily be informed by the history and contexts in which conservation is employed. A focus on social

indicators along a Global North – Global South gradient can offer different perspectives to our understanding of the social dimensions of conservation outcomes and challenges in co-managed PAs and identify similarities and differences that can enhance more general knowledge of equity considerations in co-management arrangements. Further, covering both Global North and Global South can allow analysis of social dimensions in different geographic locations which can provide opportunities for exploring complex and interconnected social dimensions of conservation across different social groups and landscapes. This approach may allow crafting of evidence-based interventions for engendering equity considerations in co-management arrangements, and in turn reduce the social costs of conservation. Beyond informing practical responses to equity concerns in co-managed PAs, a focus on Global North-Global South gradient can contribute to the scholarship on equity and social justice imperatives, needed to advance debates to inform practice.

The emphasis by the reviewed articles on the procedural principles of equity is a positive indication of the need for management initiatives that are focused on processes rather than just the outcomes. This is especially important in co-management settings and conservation efforts in general due to the promises of co-management such as equitable benefit sharing, balance in decision making power and recognition of people's voice, which if unfulfilled may set conservation and communities on a collision course. Mollick et al. (2021) suggest that all the dimensions of equity are interlinked, with strong positive correlations between the procedural dimension and recognitional and distributional dimensions. Boillat et al. (2018) suggest that the dominant narratives of wilderness framings and local uses and practices of the natural environment and biodiversity are what contribute to viewing humans and nature co-existence difficult. Consequently, this makes executing recognitional equity difficult and that leads to the hampering of procedural equity (e.g., participation) and further marginalisation of local communities (Boillat et al., 2018).

It is worth noting that while the reviewed studies show a considerable consideration of procedural principles of equity such as participation, these are ongoing and multifaceted processes that occur through a range of instances and interactions and should therefore be treated as such (Cornnwall, 2008; Boillat et al., 2018). This study corroborates Boillat et al. (2018) in that issues of equity are complex and constantly evolving to just be assigned to a few principles. This supports the need for a shift in assessing PAs effectiveness using just definable and quantifiable factors such as economic

benefits. Boillat et al. (2018) propose that equity is not an objective goal of PAs to be realised through the implementation of just a single set of measures, but rather a goal that PA management should adaptively work towards. This means that there needs to be an inclusion of all stakeholders, particularly those who are mostly affected by conservation efforts, in determining what needs to be done to adaptively manage conservation efforts in an equitable manner.

2.5 Conclusions and recommendations

Understanding the social dimensions of conservation impacts is crucial for ensuring equity in co-management of PAs. This study reveals that there is limited work on social dimensions and equity in co-management as illustrated by few studies on the subject. This means that there is limited understanding of the nuances of equity and social dimensions, which might put conservation goals at odds with local people's expectations as has been reported in various case studies. There are several ways in which social dimensions and equity could be integrated more into co-management effectiveness evaluations. First, this can be achieved by taking note of the proposed principles of equity. This means that PA co-management arrangements need to embrace the context and history in which they are formed. By doing so, embracing the needs, rights, cultural practices, knowledge systems, values, and wellbeing of local communities. Second, there need to be different metrics at which the different principles of equity (and therefore indicators) are assessed. This means that solely saying that there are participation opportunities is insufficient because there are of various complexities that underpin this metric. There is a need to address questions of who participates (i.e., women, the youth, and other marginalised groups), where do they participate, to what capacity and the influence of their participation. Therefore, there needs to be a sub-section of each indicator which informs the appropriateness of said indicator. Third, the process of management and involvement of local communities should be continuous at all stages (i.e., conceptualisation, implementation, and monitoring). Fourth, there needs to be a practical shift from the notion of "humans vs nature" for conservation to be more effective. Last, there is a need for more research on the involvement of local people and communities in co-designing indicators that are socially just and contextually relevant to capture a diverse range of factors that affect conservation efforts and those surrounding them. Sena et al. (2023) and Khanyari et al. (2023) have discussed the relevance and value of co-designing management strategies with local communities. Hattam et al. (2014) suggest that co-designing indicators has great potential to identify social concerns and

attempting to address the potential negative impacts that may arise. Thus, there is a need for conservation agencies and government institutions to facilitate opportunities that are equitable and informed by co-produced indictors that are relevant to contextual realities (e.g., Khanyari et al., 2023).

While there is no one set “best” way of evaluation conservation for its success, given its complex nature, the inclusion of social dimensions can be crucial for community buy-in, which can lead to more effective conservation efforts. The other favourable quality about social dimensions focused indicators is that they can be localised and made to suit the specific context in which the conservation is situated.

CHAPTER 3

Local communities' perceptions of co-management arrangements, benefit-sharing, and conflicts: lessons from communities around Silaka and Hluleka Nature Reserves in South Africa

Abstract

Co-management of protected areas (PAs) is widely seen as a pathway to simultaneously achieve biodiversity conservation goals and address livelihood needs. Its implementation is promoted particularly in communities who have a history of displacements to make way for conservation. However, the success of co-management is contested, in part, due to neglection of benefit-sharing and the non-material needs of claimant communities such relationships, roles and responsibilities. Using semi-structured interviews and the Three Horizons Framework, this study explores the qualitative dimensions of co-management from the perspectives of communities living adjacent to Silaka and Hluleka Nature Reserves in the Eastern Cape Province, South Africa. The results show that the nonaccrual of "standard" co-management expectations, i.e., employment, community development, natural resource harvesting, monetary compensation and access to land for relational purposes is behind heightened conflicts between the communities and reserve management. Consequently, most respondents did not value the co-management agreement, attributing this, in part, to false promises. Further, the results show that beyond quantifiable benefits, local communities valued historical attachment to land, participation in decision-making and cultural recognition. The implications of the results in developing indicators for conservation success that are locally relevant and socially just are discussed.

Keywords: Co-management, conflicts, benefit-sharing, conservation, future desires, Three Horizons Framework

3.1 Introduction

The management of conservation areas, particularly protected areas (PAs) has changed significantly over the years, shifting from state-centred exclusionary approaches to inclusive community-centred approaches (Manda et al., 2023). Contemporary natural resources

management approaches are “inclusive”, “equitable” and “participatory” models that incorporate local people and traditional knowledge (Watts and Faasen, 2009; Andrade and Rhodes, 2012; Dawson et al., 2021; Gatiso et al., 2022; Manda et al., 2023), with the aim of addressing the dual goals of biodiversity conservation and livelihood needs (Watson et al., 2014). This shift has been widely evident in countries where people are directly dependent on the environment (i.e., natural resources) to make a living (Thondhlana et al., 2012; Turnhout, 2020; Shackleton and de Vos, 2022). The reliance on natural resources therefore makes it difficult for conservation efforts to proceed without a consideration of livelihood needs (Yousefpour et al., 2022). In principle, community-based approaches are centred on efforts aimed at promoting benefit sharing and devolution of decision-making rights to local communities to achieve two key conservation outcomes – legitimacy and success (Brooks et al., 2013; Petrus and Mosimane, 2018; Salerno et al., 2021). Yet, despite the appeal of community-based conservation approaches, evidence suggests huge mismatches between principles and practice (Armitage et al., 2020; Barnes et al., 2023), evident in lack of benefit sharing, inequalities in the distribution of benefits, asymmetrical power dynamics, lack of voice, exclusionary decision-making processes, poor conceptualisation of ‘community’ and lack of capacity among others (Andersson et al., 2018; Biggs et al., 2019; Abebe et al., 2020). Meanwhile, there is a comparatively more focus on the material benefits of co-management arrangements than the non-material dimensions, though evidence suggests inextricable links between material and non-material dimensions of benefits.

Co-management of natural resources, also known as collaborative or joint management, has been the preferred approach for addressing conservation goals and livelihood needs (Ullah et al., 2022), especially in contexts with a history of local community displacement for the creation of conservation areas such as PAs, (Sharma, 2011; Cundill et al., 2013; Maluleke, 2018). Co-management is understood as a working relationship between two or more social actors such as the government, local communities, and other stakeholders where the relationship operates on a continuum of knowledge generation, deliberation, and power-sharing (Berkes, 2004, 2010). The forms and shape of co-management tend differs in different regions, but the central principal is that the terms and roles of the stakeholders are discussed and decided amongst the different stakeholders to ensure equitable sharing of the benefits, decision-making power, and roles and responsibilities (Carlsson and Berkes, 2005). The positive connotations that co-management has

had are a result of the ability of the approach to solve natural resource management issues through partnerships (Carlsson and Berkes, 2005).

In many countries such as South Africa, India, Nepal, Bangladesh and Pakistan, co-management is framed within the social justice imperative where previously disadvantaged communities who had been dispossessed from their land for PA establishment could claim it back (Kepe, 2008; Sharma, 2011; Cundill et al., 2013). The approach of co-management to conservation was strongly motivated by the need to redress past injustices while meeting national and international biodiversity conservation goals and expanding the network of PAs (Borrini-Feyerabend et al., 2000; Kepe, 2008; Cundill et al., 2013). Global discourses surrounding social justice issues advocated for public participation in decision-making and for more rights-based approaches to empower Indigenous people and local communities. Co-management was understood to be a mitigating approach to the issues of resource access and those related to top-down management measures (Armitage et al., 2009; Berkes, 2010; Cundill et al., 2013).

Despite the principles of co-management, there are several critiques on the effectiveness of the model relating to asymmetrical power relations (e.g., Cundill et al., 2013; Mutanga et al., 2015; Thondhlana and Cundill, 2017; Moyo, 2023), limited participation of local people in decision making (e.g., Ward et al., 2018) and limited benefits accrual (e.g., Thondhlana et al., 2016). A study by Cundill et al. (2013) on different co-management case studies in South Africa highlighted that the promises which formed the basis of co-management agreements such as shared decision-making, financial "benefits", and resource access and use, were not delivered to the intended beneficiaries. In practice, the approach tends to overlook the complexities that are embedded in the relationships between stakeholders and the PAs, including the social impacts of conservation on local people, especially in countries with histories of colonialism and land dispossessions such as South Africa (Kepe, 2008). In some cases, the non-accrual of benefits has resulted in heightened conflicts and non-compliance to rules and regulations by local communities (Muhumuza and Balkwill, 2013). In some instances, co-management has been said to exacerbate conflicts (Carlsson and Berkes, 2005).

There are still many cases where local people are denied entry into conservation areas, prohibiting them from performing their daily livelihood, cultural, and traditional practices, resulting in social

and economic hardships, even with a co-management agreement in place (Brockington and Igoe, 2006; Watts and Faasen, 2009; Andrade and Rhodes, 2012; Thondhlana et al., 2016). Some of the adverse social impacts resulting from exclusionary approaches include negative perceptions towards conservation and increased tension between conservation managers and local communities (Andrade and Rhodes, 2012; Bennett, 2016), a situation that has been argued to explain reduced PA management effectiveness (Andrade and Rhodes, 2012; Allendorf, 2020; Gatiso et al., 2022).

The concept of exclusion is one that is complex and multi-dimensional. It is directly linked with access, benefit-acquisition and benefit-sharing in PAs (Synman and Bricker, 2019). Synman and Bricker (2019: 705) define benefit-sharing as "…a commitment to channel some kind of returns whether monetary or non-monetary back to the range of designated participants, affected communities, source communities or source nations…" Benefit-sharing has proven to be instrumental in addressing conflicts between PA management and local communities and works as a tool to empower local communities and contributing to the alleviation of poverty (Andrade and Rhodes, 2012; Scherl et al., 2014; Synman and Bricker, 2019). The nature of benefits that are acquired from PAs and the environment vary from tangible benefits such as direct financial compensation through employment and outreach programmes, and access to a variety of resources such as ecosystem services (provisioning, regulating, cultural and supporting), to intangible and relational values such as land valuation and sense of place (Synman and Bricker, 2019; IPBES, 2022). The intangible benefits are said to be the values that capture the essence of how people's quality of life (wellbeing) can be affected by changes in nature (IPBES 2022). The discourse surrounding PA management and co-management speaks a lot about benefit-sharing and it mostly does so using materialistic or tangible benefits (Vedeld et al., 2012). This overlooks the other potential benefits that exist in such contexts which, if not understood and recognised, often tend to intensify conflict and relationship fractures, resulting in poor conservation management and conservation outcomes (Thondhlana et al., 2016).

To address these shortcomings, there are increasing calls for a nuanced understanding of the concepts of benefit sharing, power plays, community and participation in studying the social impacts of conservation. Central to such calls is the value of employing social justice and equity as a framework for understanding co-management issues and concerns (Schreckenberg et al. 2016;

Abebe and Jones, 2022). Quimby and Levine (2018: 9) define social justice in conservation as "… a normative principle that draws on social mores and values about what is fair…". This means that what is fair for people is dependent on the context in which they are, and what they deem acceptable in their lives. This concept is intertwined with equity (see Chapter 2). Social justice recognises three distributional principles; need, equality and proportionality (Deutch, 1975 cited in Gurney et al., 2021). The concept of social justice promotes the idea of inclusion for all and as one of its fundamentals, conservation will always promote equity (Blythe et al., 2018). Social justice is said to be an essential factor in a flourishing society and forms a foundation where values and principles of different cultures are informed (Haidt, 2012). Therefore, successful conservation is dependent on socially just management through positive social outcomes. Social justice promotes the idea of holistic equity, thus calling for a shift away from conventional, dominant and one-dimensional approaches (Hobson, 2004). It is said that conservation has a moral responsibility to promote social justice (Blythe et al., 2018). Witter and Satterfield (2018) argue that conservation that promotes the inclusion of Indigenous people and local communities should not just be a means to an end but an end goal in itself. Artelle et al. (2019: 6) suggest that Indigenous people and local communities' rights must be "…recognised as inherent and inalienable, not contingent on their compatibility with conservation targets". Given this, Lopes et al. (2021) suggest that participatory approaches to conservation are best positioned in achieving socially just conservation because of their bottom-up approach, thus making co-management paramount in promoting social justice.

However, very few studies to date address community-based conservation concerns using the multi-dimensional social justice framework. To understand the dynamics of co-management arrangements, it is crucial to engage with local people and communities as principal stakeholders in the approach, including local people's perceptions of equity and their livelihood desires in contexts with co-management agreements. Many studies are of the view that local people's perceptions are instrumental in assessing conservation effectiveness and to improve management (Bennett, 2016; Tonin and Lucaroni, 2017; Jefferson et al., 2014, 2021; Katswera et al., 2022). Qwatekana and Mazibuko (2020) argue local people's perceptions should be explored at all stages of conservation measures – pre (planning), during and post implementation to develop socially relevant criteria for measuring the success of co-management. This is because perceived benefits or costs from conservation impacts have an influence on people's perceptions (Chowdhury et al., 2014).

Conservation in many parts of southern Africa has largely shifted from state-centric management approaches to approaches such as community-based natural resources management (Fabricius, 2004; Berkes, 2007; Nxumalo, 2010), participatory natural resource management (Holmes-Watts and Watts, 2008) and co-management (Berkes, 2008; Kepe, 2008; de Kroning, 2009). This shift in conservation thinking and practice is a welcome development and represents the first steps in addressing past and present social injustices. However, increasing evidence suggests that exclusionary elements are widespread in community-based conservation approaches (e.g., the exclusion of the Doma people from Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) programme in Zimbabwe – Jani et al., 2023). Particularly for co-managed PAs, conflicts are prevalent attributed to several factors including equity concerns such as community identification processes, distribution of benefits, exclusionary decision-making processes, unequal power plays and the role of the state (Thondhlana et al., 2016; Thondhlana and Cundill, 2017). Building on these qualitative studies, the aim of this study is to examine stakeholder perceptions on socially just conservation in Silaka and Hluleka Nature Reserves in South Africa, co-managed PAs with a long history of co-management arrangements. The key questions of the study included, (1) what are the different ways in which communities use and value their co-managed land; (2) what are local communities' perceptions of the co-management arrangement including equity dynamics such as land access and rights, benefit sharing and decision making and (3) what are the local communities' desired pathways for co-management arrangements? A key contribution of this study lies in advancing our understanding of the current context of co-management implementation in South Africa and the advancement of social equity outcomes in co-managed conservation areas.

3.2 A brief co-management history in South Africa

In South Africa, forced removals of Indigenous and local communities have a long history. The forced removals became more evident under the apartheid era, where PAs were only for the enjoyment and benefit of the White public through recreation and leisure (Kepe, 2005, 2008; Walker et al., 2010; Maluleke, 2018). In many cases, this was done to make way for the creation of PAs (Kepe, 2008). After the first democratic election in the country, the passing of the Restitution of Land Rights Act (22 of 1994) allowed for Indigenous and local communities whose land had been previously taken from them to claim it back (de Koning, 2010). This socio-political

pressure led South African National Parks (SANParks) to establish the joint management of national parks with local communities and public organisations (Reid et al., 2004). Following successful land claims, claimants got either financial compensation, the original land, provided with alternative land or a combination of the options (Hall, 2010). After many of the land claims had been resolved, co-management between conservation agencies, usually owned by the government and the communities whose claims had been successful, became the preferred "solution" to address conservation goals while redressing past injustices and promoting socio-economic development (Mutanga et al., 2015; Thondhlana and Cundill, 2017; Maluleke, 2018). In this regard, conservation agencies have been attempting to reconcile multiple goals that at some point were said to conflict with each other - conservation and socio-economic development (De Koning, 2010; Cundill et al., 2013). However, the approach is not always the appropriate option to employ, and it does not always lead to mutual and equitable sharing of "benefits" for all involved with asymmetrical power dynamics cited as the main reason behind co-management conflicts (Cundill et al., 2013; Mutanga et al., 2015; Thondhlana and Cundill, 2017; Maluleke, 2018). This means that for co-management to work and continue serving the long-term intention of biodiversity conservation, sustainable resource use and poverty alleviation, its implementation needs to be changed and modified (Kepe et al., 2005; Maluleke, 2018), drawing on the social equity framework.

The complexities of co-management have meant that co-management has been characterised by lack of alignment between its central principles and practices. There are numerous cases (e.g., Kepe, 2008; Ntshona, 2010; Thondhlana et al., 2016) in South Africa where the promised benefits of co-management have not been realised, instead has added more burden and heightening conflicts between local communities and reserve managers. Other disgruntlements with co-management arrangements in South Africa have been the continuation of the status quo in relation to conservation outcomes and limited inclusion in both benefit-sharing arrangements and decision-making processes (Cundill et al., 2013; Loewe, 2013). Considering this background, this study focuses on the cases of Silaka and Hluleka Nature Reserves to offer insights on the adjacent communities' perceptions and livelihood desires.

3.3 Case study sites

Silaka Nature Reserve is located in the south of Port St Johns, a small town in the Eastern Cape Province of South Africa (31°39’S29°31'E). The reserve covers over 400 hectares and stretches over the Wild Coast of the Eastern Cape Province (Thondhlana et al., 2016). Hluleka Nature Reserve is located in the southeast of Mthatha and south-west of Port St Johns on the south-west coast of the Eastern Cape Province (31°49’S29°18'E). The reserve covers approximately 770 hectares. Both protected areas lie on the Wild Coast, a highly biodiverse area between the Great Kei River and the uMtamvuna River (Kepe, 2001).

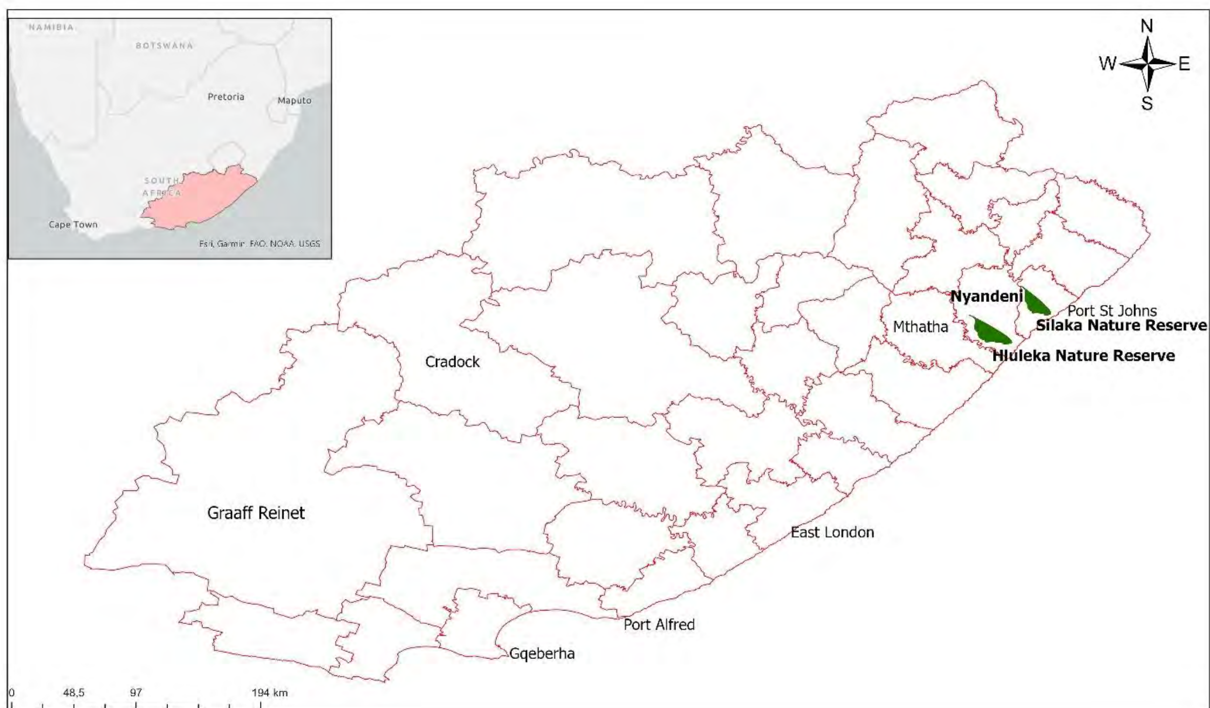

Figure 3.1. Locations of Silaka and Hluleka Nature Reserves in the Eastern Cape Province, South Africa

In both PAs, a settlement agreement was reached between the claimant communities and the local conservation agency, the Eastern Cape Parks and Tourism Agency (ECPTA). A great deal of literature such as Keep (2012), Cundill et al. (2013), Thondhlana et al. (2016), and Bezerra (2018) cover the process that has led up to the agreements and natural resource utilisation by local communities and conflicts following land settlement agreements.

Both reserves have a history of conflict resulting from land dispossession, land claims and co-management. Silaka Nature Reserve area was occupied by the AmaMpondo people before they were forcefully moved by the apartheid government to make way for conservation (Thondhlana et al., 2016). Before forced removals of local communities, land was managed under common property regimes controlled by local traditional authorities. The land supported livelihood strategies such as livestock and crop farming, and natural resources harvesting. The local communities who had been moved previously, lodged a land claim in 1997, following the passing of the South African Land Restitution Act 22 of 1994 (Thondhlana et al., 2016). The land claim was lodged under the Caguba Administrative Area which consists of six sub-villages (Thondhlana et al., 2016). The land claim was settled in 2008, with the claimants getting back some of the land and financial compensation (Thondhlana et al., 2016). The land settlement agreement stipulated that the claimants, the state and other stakeholders, enter a co-management arrangement (Thondhlana et al., 2016). Despite the specified consensus, there were continued conflicts between the management agency and claimant communities especially from Sicambeni community around the Silaka Nature Reserve (Kepe, 2012), contributing to the temporary closure of the reserve in 2013 and 2017 (Loewe, 2013; DispatchLIVE, 2017)

Hluleka Nature Reserve was proclaimed in 1976 after the previous owner of the land, which was a farm, donated it for conservation purposes (Emdon, 2013). Similar to the history of Silaka, local people were displaced from the land to make way for conservation. The community of Hluleka lodged a land claim in 1998 and it was settled under the Land Restitution Act 22 of 1994 provided that the restored land will be managed for conservation in perpetuity as part of the Hluleka Nature Reserve (Rural Development and Land Reform, 2001). This successful land claim also made a provision that a Communal Property Association (CPA) on behalf of the Hluleka Community be formed for the land ownership through a co-management agreement (Rural Development and Land Reform, 2019). Co-management conflicts in the Hluleka Nature Reserve exist because the communities did not approve that reserve managers to oversee the reserve and that the government had “stolen” their land (Agwenyi et al., 2021). This comes after authorities had made promises such as job creation, natural resource harvesting, revenue sharing and other forms of benefit-sharing, which had not been met. Instead, evidence suggests that local people are excluded from the reserve through restricted access to the reserve, and arrests and physical assaults of local people by reserve rangers (Emdon, 2013). Adjacent to Hluleka Nature Reserve, is its namesake Marine

Protected Area (MPA) that was was declared a ‘no-take zone’ without the consultation of the local community in 2001 (Sowman and Sunde, 2018). In addition to the relocation of the community, this had major implications on their livelihoods given that many people relied on the natural resources for their consumption and income generation, and grazing their cattle (Sowman and Sunde, 2018). Due to their long history of community displacement for creation of the respective PAs, and land claims and co-management processes, the two reserves provide a good context for exploring the social dimensions of conservation.

3.4 Methods

3.4.1 Data collection

The study used a mixed method approach, employing semi-structured interviews and futures workshops for data collection in two villages namely, Sicambeni (Silaka Nature Reserve) and Hluleka (Hluleka Nature Reserve). To clarify, the reserve and village share the name ‘Hluleka’, therefore simply ‘Hluleka’ will be referring to the village. The study was conducted between February (semi-structured interviews) and August (futures workshops) 2023 with the aid of a trained research assistant. All interviews and workshops were conducted in the local language IsiXhosa.

Interviews

Semi-structured interviews were used to allow open and unrestrictive discussions on the different history and socio-economic dynamics of co-management agreements at the two reserves to provide important context. The interviews targeted local residents in the two communities because of the well-documented cases of land loss when the reserves were formed. The initial sampling approach was to randomly select households to the desired sample size, but this was not possible due to the difficulty of locating households through satellite images, abandonment of homesteads and difficult in finding household owners due to other commitments. Instead, all the households were targeted, on condition that there were old enough members to interview and willing to participate. In line with the ethical guidelines and standards of the Rhodes University Ethics Policy, the interviews began by explaining the study objectives before asking for consent to proceed. The purpose and significance of this study were explained to the would-be participants before

proceeding with the study. The participation of respondents was voluntary, and the participants were assured that the information they provided would not in any way compromise or threaten their lives. Participants were provided with an informed consent form that explained the proceedings of their participation (this was also done verbally), reassured the protection of their privacy, and assured that their responses would be captured accurately. Before the interviews with the communities, permission was sought from the respective community leaders as a matter of courtesy.

A total of 70 semi-structured interviews were conducted, 35 each at Silaka and Hluleka, out of an estimated 270 and 300 households respectively (Statistics SA, 2011; de Villiers, 2021). For each interview, household heads were targeted and in the absence of the household head the most senior member who was available, willing and able to participate was interviewed. The study villages, Sicambeni and Hluleka, were selected because they are both historically and geographically closest to Silaka and Hluleka reserves respectively and have experienced the costs and benefits of the reserves and the respective co-management agreements. The interviews sought to bring insight into the history of the co-management arrangements, the benefits accrued, and costs incurred by the land claimants from the reserves, perceptions of and performance of reserves against initial promises and expectations. The respondents were also asked to share their views on historical land losses due to reserve establishment and how important reserve land is to them post-land settlement agreement. To understand co-management dynamics, the respondents were asked to reflect on social equity outcomes of the co-management agreement, including what they valued about the co-management agreement, and the most satisfying and dissatisfying aspects of the land settlement agreement, perceptions of inclusion in decision making processes, equity in the distribution of benefits and their role in decision-making processes.

Futures workshops

The Three Horizons Framework was used to explore participants' desired futures in the co-management agreement. The Three Horizons framework is a tool used collaboratively to explore the future, described by Sharpe et al. (2016) as a tool for tracking systematic patterns of chance rather than individual events meaning that it sets to explore complex systems that have multiple interactions. It is a visual approach that brings together individuals to discuss desirable future

conditions and pathways to achieving them (Sharpe et al., 2016). The framework transcends exploring the future in a linear manner. Rather, it presents a new way of relating the future to present conditions, and the interactions and consequences that may exist as a result of the desired conditions (Kuiper et al., 2022). At its core, this framework investigates how the existing conditions and paradigms (the first horizon) could shift to 'new' desired conditions (the third horizon) through an interplay of innovation and transitions (the second horizon) (Sharpe et al., 2016).

Data from the interviews were analysed (see data analysis section) and formed the basis of the futures thinking workshops. The two workshops conducted in both Hluleka and Sicambeni were facilitated in the local language, isiXhosa, by the same individuals who conducted the interviews. Participants for both communities were selected through a callout made by community leaders. At each village, participants were made of individuals who had been part of the initial interviews conducted in February 2023, and some who had not been. The workshops included a diverse group of participants ranging from senior citizens, the youth, men and women. However, there was only one woman out of 12 participants in Sicambeni.

The workshops were structured into five different stages. The first stage, 'setting up the scene' was meant for introductions between facilitators and participants, including the purpose and processes of the workshop. The second stage, 'reporting back' was a report back of findings of the initial interviews to the community to answer the questions on the perceived current state of co-management in the area. The third step was focused on creating scenarios of a desired future. The fourth stage was focused on the elaboration, refinement and exploration of said scenarios. Lastly, the fifth stage was for the participants to share their visions and scenarios of their desired future of co-management, and to reflect on them.

Stage 1: Setting the scene

Before the futures thinking activity, the concept of the Three Horizons Framework was introduced and explained including the role of the participants to give the participants the opportunity to voice out their expectations from the facilitators. The explanation was done by the facilitators and the community leaders from each community gave assurance to the participants of the researcher's intentions.

Stage 2: Reporting back and contextualising (Horizon 1)

Following the introductory stage, the results of the interviews were shared. The participants were divided into two breakout groups (only in Hluleka because there were more participants) to discuss what they thought of the results and added more themes that they felt any were missing. The other discussion question focussed on what was driving or causing the current conditions. From the reported results and added themes, participants were asked to mention all the current conditions that they would like to see maintained in the future. The rapporteur for each group recorded the discussions.

Stage 3: Building scenarios (Horizon 3)

This step explored participants' future aspirations and aimed to answer the question, 'What do you want the future to be like?' From the reported results and current conditions, participants were asked to explore aspirations, scenarios and desired conditions. There were two guiding questions for this step. First, 'what would the ideal conditions be?' and second 'what kind of relationship would you like to have with the reserve management?'.

Stage 4: Exploring the scenarios (Horizon 2)

The fourth stage of the workshops focused on engaging the scenarios mentioned in the third stage. Participants were asked to explore various pathways needed to reach the desired conditions, assumptions and consequences of the said pathways. This was done to challenge assumed linear pathways and with the understanding that the context in which the communities (case studies) find themselves are complex social-ecological systems. Here, questions leading this stage were "what needs to happen to reach the proposed desirable conditions?' and 'what are the consequences of the mentioned pathways?' Essentially, the goal of this stage was to map out and connect the future (Horizon 3) and the present (Horizon 1) by creating a transitional zone (Horizon 2) which provided additional context to the scenarios.

Stage 5: Shared learning and reflections

The final stage involved participants sharing and reflecting on their experiences of the activities and general comments. This also gave the opportunity for more present conditions to come up and provided more context on the case studies.

3.4.2 Data analysis

Responses from both the interviews and futures thinking activity were translated from IsiXhosa to English and in conditions where writing was unfeasible, audio was recorded and later translated and transcribed. For the interviews, the six steps of analysing thematic data by Braun and Clarke (2006) were used. The identified themes were quantified using a scoring system where identification (codes) in the form of numbers and single phrases or words of the summary was used, and coding was done manually and grouped based on categories. The analysis of data followed two main approaches - aggregating similar findings and configuring differences to develop an understanding of the responses (Welsh, 2002). The codes were recorded in an excel spreadsheet and analysed using RStudio (version 4.2.0) and STATISTICA (version 13). A chi-squared test was used to investigate differences in responses and experiences between the two communities. Direct quotes from the respondents' responses were extracted and used as supporting evidence for claims and to provide context (Newing, 2010). For the futures thinking activities, data were consolidated from the notes taken and presented visually. Additional notes from the workshops were transcribed into an Excel spreadsheet. The entries were then organised into thematic categories. There was minimal quantification of the qualitative data to minimise the possibilities of losing the translation of the data. As a result, a large portion of the data is presented qualitatively (Gerring, 2017).

3.4.3 Limitations

There are three potential limitations to this study. First, the respondents' perceptions may not be representative of the whole community. Second, it may not be possible to generalise the findings due to the sampling approach employed and the heterogenous nature of communities. The third limitation relates to the complexity of using perceptions as a guide because of the multiple factors that possibly influence them such as relationships, the environment, history and many others

(Bennett, 2016). Despite these limitations, this study provides useful insights into the contestations of social equity outcomes in co-managed PAs and what local people consider important in their lives, which could be used to inform equitable and socially meaningful co-management interventions.

3.5 Results

3.5.1 The socio-demographic profile of the respondents

Out of all the surveyed households in both study sites, over 80% of respondents were born in the area with an almost equal distribution of respondents between Sicambeni and Hluleka (Table 3.1). The remaining 20% of the respondents constituted of the wedded and relatives to the residents. An average 61% of the respondents in both villages were unemployed, with a slightly higher proportion in Hluleka than in Sicambeni. The remaining proportion was inclusive of pensioners, studying and employed.

Table 3.1 Characteristics of interviews (%)

Aspect	Sicambeni	Hluleka
Born in the area	83	80
Unemployed	57	66
Employed	6	3
Pensioners	34	31
Studying	3	--

3.5.2 Meaning of land and land use activities

About half of the respondents both in Sicambeni and Hluleka were affected by transformation of their land into nature (Table 3.2). As shown in Table 3.2, forced relocation, loss of grazing and farming land, and cultural significance (ancestral land, graves and sense of place) were the biggest detriment faced by the local community. One respondent from Sicambeni said: *"We have ancestral graves inside the reserve",* while another said: *"We lost our ancestral home through forceful removals when we were relocated to where we are."* A respondent from Hluleka stated: *"We have family graves in there [inside the reserve]."*

Table 3.2 Perceived effects of loss of land (%)

Theme	Hluleka (n=15)	Sicambeni (n=19)
Forced relocations	67	47
Cultural significance	7	21
Loss of grazing and farmland	13	16
Emotional trauma	13	16

When asked how the reserves affected land-use activities, respondents said they were unable to harvest the desired natural resources (Table 3.3), with no significant differences between Sicambeni and Hluleka ($\chi 2 = 20.0$; $p > 0.05$). One respondent from Hluleka said: "*We are dictated to as to how we should use our own land. We can no longer fish or harvest things as we used to*". Another respondent from Sicambeni said: "*We used to collect firewood, harvest seafood and use the land as grazing pastures. That has changed. We can no longer do that anymore*".

This was further corroborated when respondents were asked whether they could practice cultural activities or ceremonies or collect culturally significant plants in the reserve. Only 10% and 29% of respondents at Sicambeni and Hluleka respectively said they did or could. There was a higher proportion of respondents who said they could not, citing lack of access to the reserve as the main reason. About 24% of the respondents said they no longer had land for livestock grazing while others (16%) said they no longer had the "free will" to do anything in and around the reserve. Other aspects mentioned albeit by very few respondents include human-wildlife conflict (6%) reported at Hluleka, where one respondent said: "*It affects us negatively.... Their animals also disturb how we use the land. Many of them escape the reserve and ruin our gardens*".

At both Sicambeni and Hluleka, the highest reported importance of the land was provisioning services cited by 51% and 44% respectively. These included natural resources harvesting for subsistence and economic use and livestock grazing. Overall, there was no significant difference in the proportion of respondents reporting provisioning services between Sicambeni and Hluleka ($\chi 2 = 12.0$; $p > 0.05$). At Sicambeni, only 4% of the respondents mentioned recreational use – suggesting that they use the beach for social entertainment. The respondents highlighted and

emphasised their dissatisfaction with exclusion from the reserves, which separated them from their ancestral land and graveyards and even their connection with the land.

Table 3.3 Effects of the reserves' presence on land use activities (%)

Theme	**Hluleka (n=54)**	**Sicambeni (n=46)**
Natural resources harvesting	43	52
Livestock grazing	28	20
Free will	15	17
Human-wildlife conflict	6	--
No effect	9	7
Recreational use	--	4

3.5.3 Perceptions of benefit-sharing

To inquire about the material benefits from the perspective of co-management agreements at Silaka and Hluleka reserves, it was found that 47% of the respondents were employed compared to the 53% unemployed. Nevertheless, it was revealed that for those employed, their working conditions were unfavourable. The respondents also alluded to the fact that many of the jobs that the community members got were seasonal and temporary. More than half of the respondents across the sample (53%) said they did not see any value in the co-management arrangement, attributing this to false promises, as evident in the following statements by two respondents: "*There is nothing to value in that agreement because it is not being followed*" (Sicambeni respondent). "*Nothing. I can't value false promises. Out of everything that we had agreed on, we have not seen a single one of them*" (Hluleka respondent). The promises cited by respondents are based on the expectations of benefits accrual stipulated in many co-management agreements (Cundill et al., 2013). These material benefits include access to natural resources, revenue sharing, employment opportunities and infrastructure development among others (Cundill et al., 2013; Thondhlana et al., 2016).

Concerning benefits from the perspective of co-management agreements at Silaka and Hluleka reserves, the results indicate about 32% of the respondents harvested resources such as medicinal herbs, building material (poles and thatch), fish and other marine resources from the nature reserves. The respondents said that they can only harvest resources if they have been granted a permit that allows them to do so. The respondents reported that getting the harvesting permits was challenging due to long waiting periods before acquiring permits. Only 3% of the respondents from both Sicambeni and Hluleka said they received monetary compensation from the land settlement agreement but did not state the amount. Only 3% of the respondents felt that the reserves supported local infrastructure.

3.5.4 Recognition of co-ownership of reserve and claimants' voice in management

When participants were asked their perception on being recognised as joint owners of the reserves as per the co-management agreement, a substantial proportion of the respondents at both Sicambeni (91%) and Hluleka (97%) did not feel recognised as co-owners stating that their rights of access and use of the reserves were not respected. One respondent from Sicambeni said, "*No. People's rights have been disregarded, we are no longer allowed to use the land for our subsistence*". A respondent from Hluleka stated: "*Not at all. If we were recognised as landowners, we would get many of the things we want. We would even drive through the reserve if we were recognised as owners of the land*". In addition, the respondents from the two communities disagreed with the sentiments that they had a say in the management of the reserves, via the co-management committee or Common Property Association (CPA). Almost 71% of respondents at Sicambeni and 59% at Hluleka echoed sentiments regarding lack of recognition of their representatives, citing a 'captured' CPA. The respondents claimed that the disregard of their interests by the CPA committee has led to many conflicts within the communities. At Sicambeni, the community believed that the lack of representation from the CPA is because the reserve management had captured the Chief, who rules over the Caguba Administrative Area and community representatives in the CPA, and therefore sees no reason to consult the community.

"*We do have representatives in the committee, but they are treated like the rest of us. Their input is not valued*" (Sicambeni respondent).

"*There is a CPA, but they never consult us as the community. Instead, they go with what the reserve management wants*" (Hluleka respondent).

For example, asked whether they felt their voices were included when drawing up the co-management agreement, more than half of the respondents at Sicambeni (51%) and Hluleka (66%) responded negatively, citing that drawing up the co-management agreement was not an inclusive process. Those who felt there was some level of inclusion in the drawing up of the co-management agreement said they felt the co-management promises such as employment, benefit-sharing, and resources' access, had not been realised as evident in the following statement:

"There were consultations between the two sides [local people and reserve management], but we were made to believe that the things we wanted would be done but that has not happened" (Sicambeni respondent).

3.5.5 Wellbeing and desired conditions

Deng et al. (2013) highlight the importance of ecosystem services on human wellbeing. Healthy and functioning ecosystem services form part of human wellbeing by providing services essential for survival (Millenium Ecosystem Assessment, 2005; IPBES, 2019). The land is an essential source of many of these ecosystem services, whether material or non-material. To understand the impacts of the loss of land to local communities, the respondents were asked whether the 'successful' land claim had contributed to their personal wellbeing. More than 80% at Sicambeni and two thirds (67%) at Hluleka said claiming land had contributed negatively to their wellbeing. The reasons cited by respondents were that the process was emotionally draining, and they did not get the results they wanted including benefit-sharing, compensation, development, employment opportunities and reconnection with ancestral land. Respondents were asked about the desired change regarding the co-management agreements or protected areas. There was a noticeable difference however in two of the reported themes, accessibility and physical boundaries. Almost 20% more respondents in Hluleka than in Sicambeni, said they would like to see the reserve more accessible to its neighbouring communities, to allow people to harvest natural resources and commute through it. One respondent at Hluleka said, "*My only wish is for the reserve to allow us to use the reserve or the resources there, freely*" Respondents from Sicambeni raised a concern that the reserve had extended their boundaries beyond what was initially theirs, into the

community's land, thus heightening the conflict between the community of Sicambeni and reserve management because the respondents feel that this has taken more of their land, leaving their livestock with limited grazing land.

3.5.6 Respondents' desired futures

Based on the workshops' discussions, participants created pathways for moving away from the current conditions to the desirable futures. The pathways discussed combine multiple socio-economic dimensions, including a combination of values, social, environmental, economic, and political changes, highlighting the diverse nature of the communities' future aspirations.

Participants in the workshops expressed concerns that were consistent with the findings in the interviews. Many of the perceived drivers of the present conditions were shared by the two communities, including distrust between the stakeholders (local people and management agency) and the perceived negative perceptions held by the agency towards the co-existence of conservation and local people. Only employment and community outreach were mentioned by both communities as conditions to maintain. The communities felt that the issue of employment is complicated as some members of the community are employed by the reserves, however the employment conditions were perceived as unfair and not preferable. At Hluleka, participants expressed their desire for an internship programme that accommodates the youth who have matriculated to learn skills for the job market. A participant said: *"…the program can help those who have matriculated with internships in the reserve. Some can even get employment through this"*. At Sicambeni, participants said that there was not much done currently by the reserve that they would like to keep. They claimed that the reserve used to sponsor social events such as soccer tournaments and other sporting leagues. However, this is not happening because of the heightened conflicts between the community and reserve management.

Participants from both communities identified a broad range of desirable conditions for the future (Figures 3.2 and 3.3). At Sicambeni, desirable futures mentioned include a functional CPA, better working relationship with reserve management and *iKumnkani* (the Chief), benefit-sharing, infrastructure support, access to the reserve (for resource extraction and to pass through to the nearest town, Port St Johns), better communication and consultations. At Hluleka, access to the reserve for resource harvesting, visibility of the outreach officer, more learning opportunities for

graduates, community development, inclusion in decision-making and preferential employment were mentioned as conditions of a desirable future.

3.5.7 Pathways to the desired future

When asked to explore what needs to happen to reach the desirable conditions, there were similarities in the two communities. At Hluleka, workshop participants raised the need for a new management agency, the recognition of culture and traditional practices and new co-management conditions. Similarly, at Sicambeni, participants highlighted the need for changes in positions of power, recognition of community values, and the need for trusting them as co-management partners. The need for a change in reserve management stems from the longstanding conflicts between the communities and reserve management. Participants claimed that it had been well over a decade since the co-management agreements had been signed and the lack of attempts from reserve management to include them in decision making throughout this time has proven to them that there are no intentions of doing so. Therefore, they saw no value in trying to rekindle a relationship with the reserve.

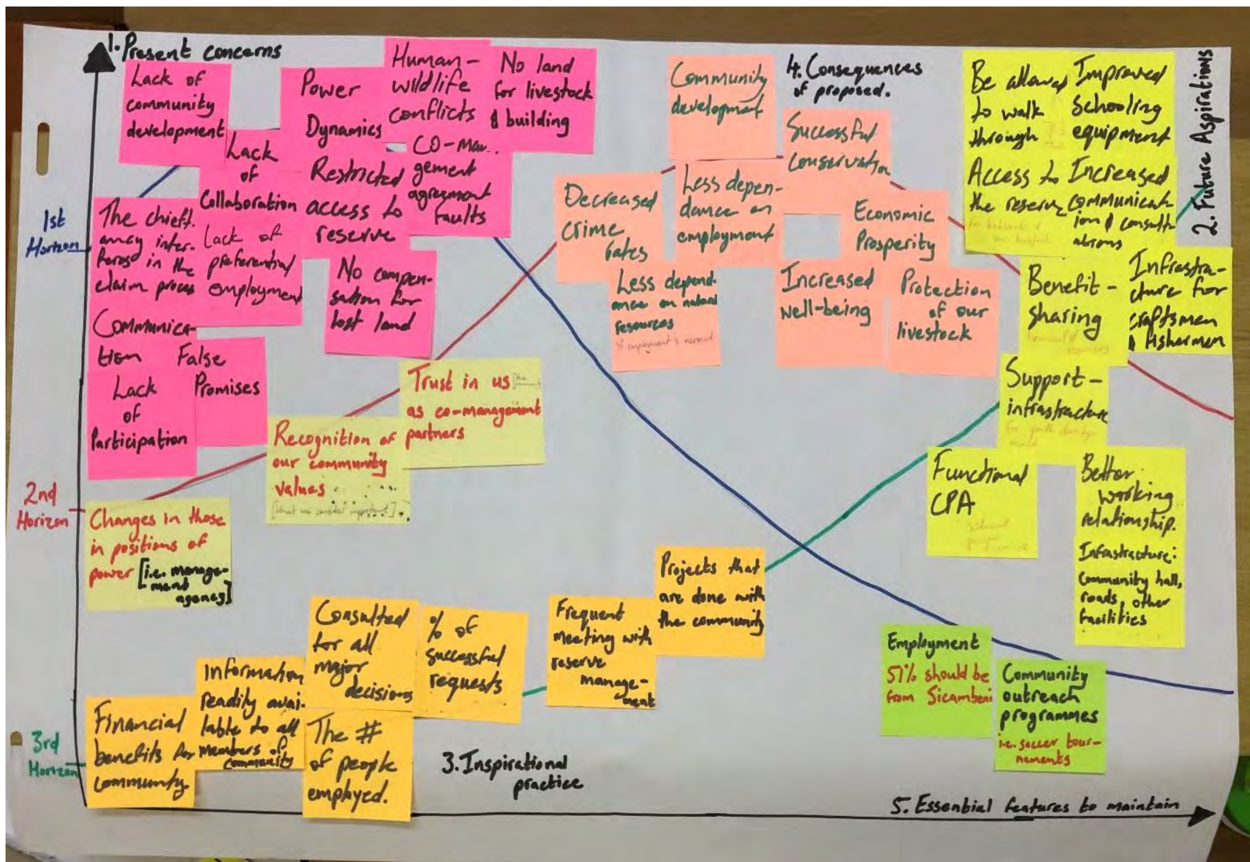

Figure 3.2 Futures thinking mapping at Sicambeni showing the different conditions (desired and current) highlighted by participants

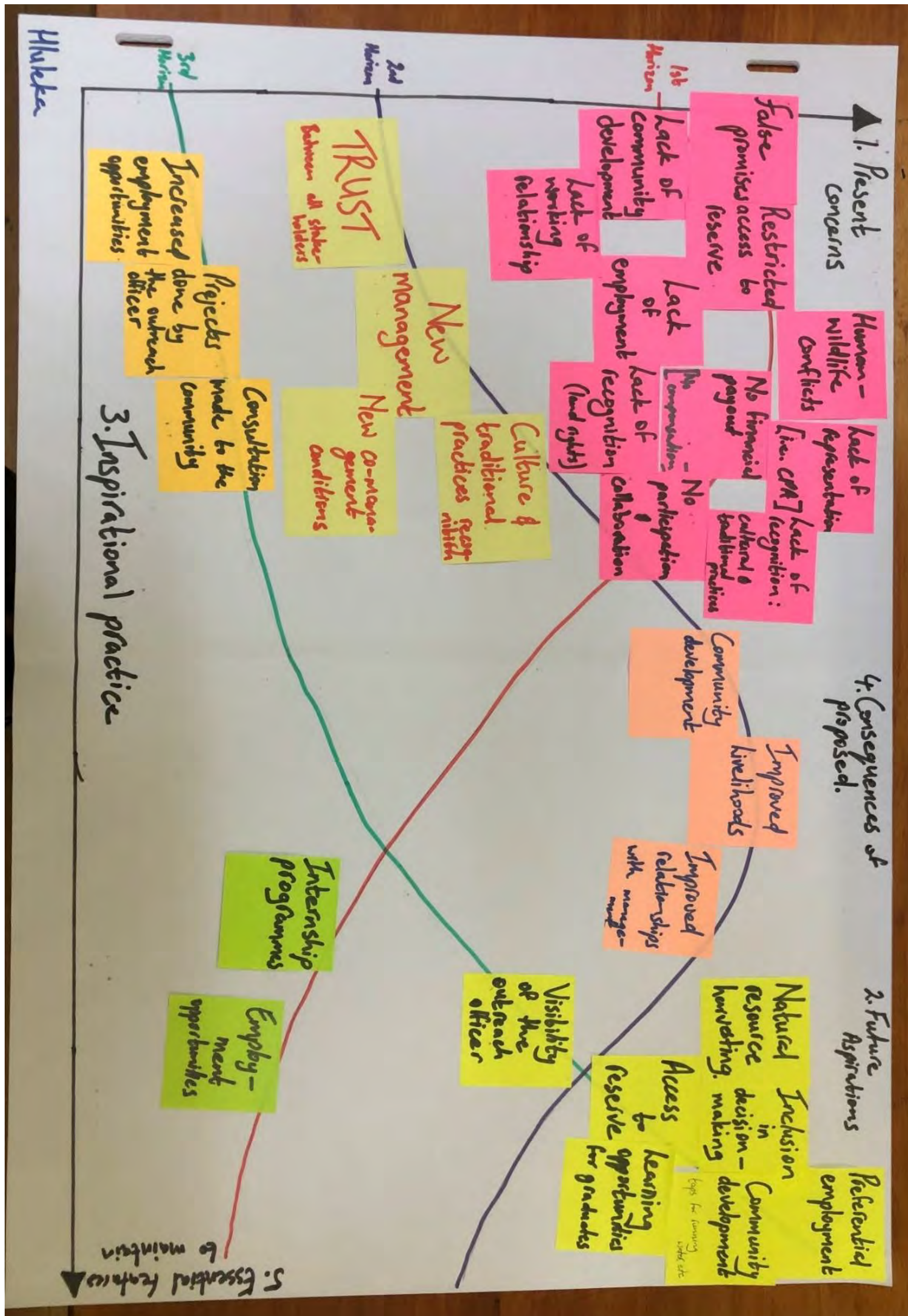

Figure 3.3 Futures thinking mapping at Hluleka showing the different conditions (desired and current) highlighted by participants

3.6 Discussion

The study set out to examine stakeholder views on socially equity in co-management arrangements at Silaka and Hluleka Nature Reserves in South Africa. It also attempted to understand the communities' desires about the co-managements and outcomes at the two reserves. The findings suggest a generally high level of dissatisfaction among local communities attributed to (i) the lack of benefit-sharing, (ii) restricted access into and use of resources in the reserves (iii) exclusion of local communities from decision making, (iv) distrust due to unfulfilled promises, (v) non-consideration of non-material values of the land, and (vi lack of recognition as co-owners of the reserves and voice

Both the communities of Sicambeni and Hluleka villages perceived that the co-managed Silaka and Hluleka reserves had failed to keep the promises of the co-management agreements such as benefit-sharing (revenue sharing), employment, natural resources' harvesting, and shared decision-making powers, consistent with findings by Cundill et al. (2013), Thondhlana et al. (2016), Soliku and Schraml (2020), Cordon-Cumming and Mearns (2021) and Rampheri et al. (2022). For instance, a study done by Rampheri et al. (2022) in South Africa found that despite the introduction of co-management in the Blouberg Nature Reserve, the majority (>80%) of the study's respondents said that they had not received any benefits from the reserve or as a result of the co-management. Even with the advocacy for the inclusion of these benefits, the implementation or lack thereof of co-management agreements has failed to do so in line with findings reported in other case studies and has led to conflicts (Cundill et al., 2013). Conflicts resulted in the temporal closure of Silaka in 2013 and 2017 by local people who felt that they were no longer benefiting from the reserve. In addition to the lack of preferential employment conditions, some community members wanted some of the unused land back, citing the fact that the reserve no longer had the wildlife it originally had, and should therefore give back the land for use by the community (DispatchLive, 2017).

Due to the widespread lack of economic opportunities and high levels of poverty in developing countries, many rural communities are directly dependent on land-based livelihood activities such as wild resource harvesting and livestock grazing (Kaoma and Shackleton, 2015; Turnhout, 2020; Wale et al., 2022). This is the case for many communities adjacent to conservation areas (Gordon-Cumming and Mearns., 2021). The perceived lack of benefits could be the result of the resistance

of the reserve management in allowing local people access into the reserve and use of resources due to the fear of unsustainable harvesting practices as has been reported elsewhere (Thondhlana et al., 2016; Thondhlana and Cundill, 2017), potential destruction of property and disturbance to guests. This is evident in both interview and workshop data where a high level of distrust was expressed by local communities. It is therefore plausible to argue that this is fuelled by the assumption that the utilisation of land by "poor and natural resources-dependent" local people who engage with nature as an abstract entity leads to biodiversity degradation and the destruction of conservation as argued in other studies (Foale et al., 2016; Masterson et al., 2019; Skutsch and Turnhout, 2020). Thondhlana et al. (2016) argue that benefit-sharing should be informed by ecological limits to use and the sustainability of extracting certain resources, and that should be used to inform those who depend on the natural resources of the potential risks of continuous harvesting. This means that those who are dependent on the natural resources are aware of the risks of depletion. This unfortunately is not the case at both Silaka and Hluleka as the findings reveal that not only are local people excluded from the co-managed reserves, but they are also not consulted in matters concerning day to day operations of the reserves, as stipulated in the co-management agreement.

Further, the perceived lack of local people's involvement in decision making reveals the power dynamics at play in both contexts. It is evident that the conservation agency that is currently running both reserves holds more power and influence over the management of the reserves. Though co-management is understood as a continuum of knowledge generation, deliberation, and power-sharing (Berkes, 2010), the results suggest otherwise. Consistent with other studies in South Africa (e.g., Thondhlana et al., 2016; Maluleke, 2018), the results suggest that there tend to be minimal attempts from the reserve management to consult, collaborate or include local people in drawing up the co-management agreements and subsequent management of the reserves. The perceived lack of community involvement could be attributed to distrust. Trust should be one of the fundamental tools used to mitigate the conflict between reserve management and local communities. This is fundamental in engendering socially just co-management arrangements (Berkes, 2009). Given that co-management in South Africa was introduced to reconcile past injustices and to mitigate conflicts, the concept has not fully served its purpose due to its poor implementation. Soliku and Schraml (2020) suggest that when co-management produces benefits such as economic incentives, participation is encouraged, and conflicts are mitigated and, in some

instances, prevented. Gandiwa et al. (2013) and Moswete et al. (2020) argue that even in the absence of material or extractive benefits, participation by local communities is still crucial for conservation success in community-based approaches such as co-management.

Consistent with many cases of co-management in South Africa and other parts of the world, land and its natural resources is treated as a commodity by conservation agencies in that if it is conserved, it will provide material benefits to those who make use of it (Thondhlana *et al*., 2016; Soliku and Schraml, 2020). However, the quantitative economic mantra overlooks many of the non-material benefits that many people consider important (Moswete et al., 2020). These include the valuation of land through cultural and relational terms amongst others (Thondhlana et al., 2016; Thondhlana et al., 2020). On this basis, land is viewed as more than just a commodity, but it forms the contours through which culture and identity are formed and lived. This is evident in Cocks et al. (2012) and Cundill et al. (2017) who report intricate connections between identity and wellbeing of the *amaXhosa* people of South Africa, whose identity and wellbeing are rooted in the relationship they have with land and livestock. At Silaka and Hluleka, respondents highlighted the trauma associated with constrained access to the reserve for purposes of visiting their ancestral graves and connecting with them, arguing that restricted access overlooked the historical context of dispossession from culturally important ancestral land. From these land claims, not only do people get the "commodity" that is land, but they also get memories, belonging (sense of place and attachment) and a sense of victory (Thondhlana et al., 2016; Cundill et al., 2017). Acknowledging this in the implementation of co-management practice has the potential of not only fulfilling the mandate, but also mitigating conflicts, and improving working relationships between local people and conservation agencies and garnering support for conservation efforts (Thondhlana et al., 2016; Thondhlana and Cundill, 2017).

Regarding perceived performance of the reserves, many generally perceived the reserves to not be doing well. While many of the reasons given to indicate perceived performance were quantifiable economic benefits such as the lack of benefit-sharing, employment opportunities, infrastructure and its conditions and visitors to the reserves, respondents also used non-material aspects as indicators of their reasoning which included engagements and collaboration, and unfulfilled promises. This further indicates that the manner in which land is viewed as a commodity by conservation agencies does not only undermine the potential success of conservation, but it is also

socially unjust. Thus, the study findings suggest that, while the economic benefits of co-management are valued by local communities, the social dimensions are equally important but remain poorly recognised in co-management arrangements consistent with findings elsewhere (Gurney et al., 2021). It is plausible to attribute this trend to the dominance of a quantitative mantra which typically forms the premise of co-management but largely inadequate to respond to qualitative and dynamic social dimensions of equity. Therefore, this study argues for a more nuanced understanding of social dimensions of co-management to inform equitable conservation approaches that are consistent with equity imperatives.

Unsurprisingly, the futures workshop data show a focus on the visioning of the first and third horizons, the present and the future. While this is crucial in understanding locals' concerns and desires, the participatory process also set to explore transformative pathways by connecting the present to the future. However, participants found thinking about the second horizon challenging due to the complex nature of social-ecological systems. This was evident in some of the responses where only linear pathways into the future were provided. One of the premises of co-management is that it is not a fixed approach but rather one that is continuous and evolves with time (Berkes, 2009). This study found that the desires of the case study communities are nothing more than what co-management already promises or seeks to achieve. Considering this study, there is a considerable need for the inclusion of local people's needs, knowledge, histories and values. The results have also shown that the exclusion of local people as stakeholders in co-management arrangements has great negative consequences on conservation and its effectiveness. The need is evident in the negative perceptions people hold towards conservation efforts, especially those that were implemented with the promise of positively contributing to their lives. These perceptions brought by conflicts can lead to unsustainable actions such as non-compliance with the restrictions and other illegal activities, thus creating positive feedback loops where more restrictions are implemented as a reaction to these activities (Silva and Mosimane, 2012; Baynham-Herd et al., 2018; Peer, et al., 2022). The results suggest there still is limited work on the inclusion of many social indicators to assess the effectiveness of co-managed PAs. Thus, the route to achieving socially-just conservation lies in the incorporation of different dimensions of equity (see Chapter 2) - recognitional, procedural, and distributional. These can leverage the power dynamics that exist in the highlighted case studies, thus mitigating conflicts, and improving conservation efforts and their effectiveness.

3.7 Conclusions

The findings of this study have demonstrated that co-management is not, on its own, the solution to addressing social injustices. It has in fact exacerbated them in that it appears co-management is exclusionary because it tends to be seen as a means to an end rather than as an end in itself or has been poorly implemented. While it is reasonable to argue that the reserves cannot address all issues of social injustice at once such as poverty alleviation (in its multidimensional sense) amongst others, they however have the legal obligation to create a working relationship with local communities through the co-management agreements. Despite the legal obligations of co-management agreements, it is morally unjust to exclude local communities from making use of natural resources to meet their livelihoods needs and whose lifestyles and identity are deeply embedded. This study also shows that local communities expect more than just extractive resources from co-management but qualitative dimensions that are important for their wellbeing as it has since its inception, co-management has been modelled around extractive benefit-sharing and when it has failed to maintain such promises, conflicts have emerged, ranging in intensity and form. Thus, co-management should be implemented with an understanding of the context in which it is set in order to gain support from local people. The implementation of co-management should also give attention to the processes leading up to it. Local people have highlighted their exclusion from the co-management agreement drafting process and believed they were only presented with what the conservation agency had come up with. The recognition of local people is crucial in that it can either lead to the success or failure of conservation efforts. The continued lack of attempts from conservation agencies and the government to make conservation inclusive have led to other members of the local communities feeling as if the relationship between them and the mentioned stakeholders is unmendable. This means that many local people have lost hope in conservation efforts being inclusive, fair and just. This is particularly concerning in a country like South Africa because conservation may now be seen to mirror the fortress and fines approaches. This does not only threaten the livelihoods and wellbeing of local people but also poses great ecological and economic threats to conservation. Given this, a shift from utilitarian environmentalism, which has arguably informed co-management agreements, to a morality of care is needed in line with recent calls (e.g., Muradian and Gómez-Baggethun, 2021).

CHAPTER 4

Synthesis, recommendations and conclusions

4.1 Introduction

What social indicators are used to measure the performance of co-management arrangements? Under which principles of equity do said indicators fall? What are the different ways in which communities use and value their co-managed land? What are local communities' perceptions of the co-management arrangement including equity dynamics such as land access and rights, benefit sharing and decision making? And what are the local communities' desired pathways for co-management arrangements? These are the questions that guided this study.

The curiosity underpinning this study was informed by the reported conflicts in co-managed PAs and impacts on local communities. This chapter summarises and reflects on the contributions of this study to, and future research needs needed to inform debates on equity in co-management arrangements. A framework that can be used to develop socially just indicators for co-managed PAs' evaluation is proposed.

4.2 Summary of findings

- The distribution of articles on the use of social indicators in co-managed PA evaluations showed limited research on the subject between 1990 and 2023, though there is a steady growth suggesting interest on equity in co-management is growing. Generally, much of the reviewed articles were more concentrated in the Global South than the Global North, suggesting that perspectives on the Global South - Global North gradient are limited, and needed for nuanced understanding of equity dynamics. A substantial proportion of the reviewed articles focused more on the acquisition of benefits and participation as indicators of co-management performance and less attention is paid to the recognitional dimension of equity (Chapter 2). The findings suggest that more work on equity in co-management is needed from diverse contexts to build a broad base of empirical evidence needed to leverage support for incorporating social equity in co-management. Importantly, a shift from a utilitarian framing to an ethics of care is needed to frame such studies to avoid

drifting back into quantitative framing of benefits, which as already noted, is important but insufficient to capture qualitative dimensions of benefits.

- Factors contributing to long tenured conflicts in co-management are diverse and complex. Such factors include the lack of benefit-sharing and restricted access into resource use, exclusion of local communities from decision-making, negative perceptions held by stakeholders, and non-consideration of relational and subjective valuation of land (Chapter 3). Participants raised concerns and frustrations about the current conditions that they are experiencing and expressed desires for a functional co-management arrangement that fulfils the premises in enshrined in the co-management agreement. Pathways to these desirable conditions included the recognition of community values [culture and traditional practices], trust among stakeholders, changes in reserve management, and new co-management conditions (Chapter 3).

4.3 Advancing equity in co-management

Overall, the findings of this study showed that research on the use of social indicators in co-managed PAs evaluation is still limited, even though the social impacts of conservation have been widely documented. This is probably due to several reasons such as the difficulty of measuring social dimensions, limited time and resources to track progress and perceptions held by those in positions of power that local communities are “poor and natural resources-dependent” which could lead to the destruction of the natural environment. Despite this, much of the literature highlighting co-management issues are in the Global South and regions whose Indigenous and local people were forcefully displaced from their ancestral lands to make way for protected areas. Such literature also highlights the importance of using co-management as a means of redressing such injustices. However, the limited literature available that speak about co-managed PA performance evaluation continue to use ecological and economic parameters rather than social dimensions. Further, there is limited literature on the processes that involve local communities in the design of evaluation indicators. This further supports the narrative that co-management is used as a means to an end rather than a process that is informed by collaborative efforts.

Of great concern is that the approach has long standing social injustice implications as evident in the many reported cases of conflicts. For example, if we consider land a commodity or otherwise,

one would then be able pass their share to family or those dearest to them. Beyond the economic value of land, many relational and subjective benefits are associated with it. The current conditions of co-management take that away, in turn mirroring fortress conservation approaches.

4.4 Recommendations

4.4.1 Recommendations for implementation and practice

The study also showed that participants are willing to participate in co-management, both for their needs and for the success of conservation. Thus, governments and co-management agencies should take advantage of local communities' desire and willingness to participate in co-management. The following recommendations might provide guidance for considering equity in co-management projects:

1. There needs to be a co-designing process of indicators by all stakeholders involved to promote distributional, procedural and recognitional dimensions of equity. The involvement of local communities can help in identifying and recognising community [and individual] values, cultural and traditional practices, knowledge systems, and wellbeing, needed to inform co-management interventions. By doing this, indicators can integrate social dimensions that are contextually relevant.

2. Given the financial constraints of governments and conservation agencies, and the risk of natural resources depletion, co-management approaches should consider shifting away from the emphasis on material benefits acquisition as an outcome of co-management and more on subjective and relational benefits (i.e., social dimensions). This is likely to not comprise stakeholder support and prevent conflicts when material benefits can no longer be sustained. Further, benefit-sharing mechanism should be informed by ecological limits to use, so that expectations are carefully managed. If expectations of material benefits are not managed, conflicts might ensure if the benefits are not realised which can mask the importance of other qualitative dimensions of benefits.

4.4.2 Future research prospects

Has co-management done more harm than good? Are there alternative approaches that can fulfil the promises of co-management? Do some members of the community receive more negative impacts from conservation than others, given the heterogeneity of communities? What happens when co-management "fails" in successfully claimed land? There are a few questions that have come up throughout the period of conducting this study. Exploring these questions could potentially give insights into how co-management is conceptualised, and consequently exploring other options.

4.5 Conclusion

In a nutshell, this research has provided a nuanced understanding of equity in two co-managed South African protected areas from a local community perspective. Through an examination of the multiple dimensions of equity the study has shown that co-management arrangements are founded on the provision of material or economic benefits, but the benefits (natural resources, job opportunities) seldom accrue to the intended beneficiaries, and if they do, are viewed as insufficient and unfairly distributed. The findings on benefit sharing challenges corroborates existing literature and revive the debate on the longstanding mismatch between co-management promises and practice. The study argues that equitable co-management should not just address benefits to land claimants but also make sure marginalised groups are supported to tap from economic opportunities who often disproportionately bear the costs of conservation. Beyond distributional dimensions of equity, co-management can be deemed to be underachieving if it does not fully address all dimensions of equity. This is particularly important in a co-management context where there needs to be a focus on addressing issues of power, decision making, values, identity and voice. In the two communities studied, the findings suggest that local communities held negative perceptions regarding their representatives and conservation authority in joint management board, citing distrust, lack of recognition of their ownership rights of the co-managed reserves, involvement in decision making, values and identity among other concerns. Therefore, while the shift to co-management is a welcome development given the history of displacement and exclusion of local communities, the community participation principle in co-management remains just rhetoric, if it does not address all the multiple dimensions of equity. Going forward, co-management arrangements have to be informed by complex historical and social contexts, drawing

on what matters to local communities to inform equitable benefit-sharing arrangements. Further and importantly, co-management arrangements should be co-designed through collective problem formulation where deliberations and negotiations are genuine and founded on honesty, trust and fairness. This could form the basis for designing clear co-management goals and outcomes and realistic expectations understood and supported by all stakeholders.

REFERENCES

Abebe, B.A. and Jones, K.W., 2022. Measuring Social Equity Outcomes in a Community-Based Conservation Program in Ethiopia: Developing and Applying Local Indicators. *Society & Natural Resources*: 1-20. https://doi.org/10.1080/08941920.2022.2158254

Abebe, B.A., Jones, K.W., Solomon, J., Galvin, K. and Evangelista, P., 2020. Examining social equity in community-based conservation programs: A case study of controlled hunting programs in Bale Mountains, Ethiopia. *World Development*, *135*: 105066. https://doi.org/10.1016/j.worlddev.2020.105066

Abukari, H. and Mwalyosi, R.B., 2020. Local communities' perceptions about the impact of protected areas on livelihoods and community development. *Global Ecology and Conservation*, *22*: 00909. https://doi.org/10.1016/j.gecco.2020.e00909

Adams, V.M., Iacona, G.D. and Possingham, H.P., 2019. Weighing the benefits of expanding protected areas versus managing existing ones. *Nature Sustainability*, *2*(5): 404-411.

Adams, W.M. and Hutton, J., 2007. People, parks and poverty: political ecology and biodiversity conservation. *Conservation and Society*, *5*(2): 147-183.

Agarwala, M., Atkinson, G., Fry, B.P., Homewood, K., Mourato, S., Rowcliffe, J.M., Wallace, G. and Milner-Gulland, E.J., 2014. Assessing the relationship between human well-being and ecosystem services: a review of frameworks. *Conservation and Society*, *12*(4): 437-449.

Allendorf, T.D., 2020. A global summary of local residents' attitudes toward protected areas. *Human Ecology*, *48*(1): 111-118.

Andalecio, M.N., 2011. Including coastal resource users in fisheries management evaluation of San Miguel Bay, Philippines. *Ocean & Coastal Management*, *54*(10): 760-770.

Andersson, K.P., Smith, S.M., Alston, L.J., Duchelle, A.E., Mwangi, E., Larson, A.M., de Sassi, C., Sills, E.O., Sunderlin, W.D. and Wong, G.Y., 2018. Wealth and the distribution of benefits from tropical forests: Implications for REDD+. *Land Use Policy*, *72*: 510-522.

Andrade, G.S. and Rhodes, J.R., 2012. Protected areas and local communities: an inevitable partnership toward successful conservation strategies? *Ecology and Society*, *17*(4): 14. http://dx.doi.org/10.5751/ES-05216-170414

Angwenyi, D., Potgieter, M. and Gambiza, J., 2021. Community perceptions towards nature conservation in the Eastern Cape Province, South Africa. *Nature Conservation*, *43*(1): 41-53.

Arksey, H. and O'Malley, L., 2005. Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1): 19-32.

Armitage, D., Mbatha, P., Muhl, E.K., Rice, W. and Sowman, M., 2020. Governance principles for community-centered conservation in the post-2020 global biodiversity framework. *Conservation Science and Practice*, *2*(2): 160. https://doi.org/10.1111/csp2.160

Armitage, D.R., Plummer, R., Berkes, F., Arthur, R.I., Charles, A.T., Davidson-Hunt, I.J., Diduck, A.P., Doubleday, N.C., Johnson, D.S., Marschke, M. and McConney, P., 2009. Adaptive co-management for social–ecological complexity. *Frontiers in Ecology and the Environment*, *7*(2): 95-102.

Artelle, K.A., Zurba, M., Bhattacharyya, J., Chan, D.E., Brown, K., Housty, J. and Moola, F., 2019. Supporting resurgent Indigenous-led governance: A nascent mechanism for just and effective conservation. *Biological Conservation*, *240*: 108284. https://doi.org/10.1016/j.biocon.2019.108284

Barnes, M.D., Craigie, I.D., Harrison, L.B., Geldmann, J., Collen, B., Whitmee, S., Balmford, A., Burgess, N.D., Brooks, T., Hockings, M. and Woodley, S., 2016. Wildlife population trends in protected areas predicted by national socio-economic metrics and body size. *Nature Communications*, *7*(1): 1-9.

Barnes, P.A., Aninta, S.G., Ariyanto, T.O.M.I., Holle, M.J.M., Ikhawan, M.K. and Jayanto, H., 2023. The gap between policy and practice for human rights in conservation: a case study in Papua Province, Indonesia. *Oryx*, *57*(3): 360-369.

Basupi, L.V., Dougill, A.J. and Quinn, C.H., 2019. Institutional challenges in pastoral landscape management: Towards sustainable land management in Ngamiland, Botswana. *Land Degradation & Development*, *30*(7): 839-851.

Baynham-Herd, Z., Redpath, S., Bunnefeld, N., Molony, T. and Keane, A., 2018. Conservation conflicts: Behavioural threats, frames, and intervention recommendations. *Biological Conservation*, *222*: 180-188.

Beauchamp, E., Woodhouse, E., Clements, T. and Milner-Gulland, E., 2018. "Living a good life": conceptualizations of well-being in a conservation context in Cambodia. *Ecology and Society*, *23*(2): 28. https://doi.org/10.5751/ES-10049-230228

Béné, C. and Neiland, A.E., 2004. Empowerment reform, yes... but empowerment of whom? Fisheries decentralization reforms in developing countries: a critical assessment with specific reference to poverty reduction. *Aquatic Resources, Culture and Development*: https://doi/abs/10.1079/aqres20063050507

Bennett, N.J. and Dearden, P., 2014. Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy*, *44*: 107-116.

Bennett, N.J., 2016. Using perceptions as evidence to improve conservation and environmental management. *Conservation Biology*, *30*(3): 582-592.

Bennett, N.J., Dearden, P. and Peredo, A.M., 2015. Vulnerability to multiple stressors in coastal communities: a study of the Andaman Coast of Thailand. *Climate and Development*, *7*(2): 124-141.

Bennett, N.J., Di Franco, A., Calò, A., Nethery, E., Niccolini, F., Milazzo, M. and Guidetti, P., 2019. Local support for conservation is associated with perceptions of good governance, social impacts, and ecological effectiveness. *Conservation Letters*, *12*(4), 12640. https://doi.org/10.1111/conl.12640

Bennett, N.J., Katz, L., Yadao-Evans, W., Ahmadia, G.N., Atkinson, S., Ban, N.C., Dawson, N.M., de Vos, A., Fitzpatrick, J., Gill, D. and Imirizaldu, M., 2021. Advancing social equity in

and through marine conservation. *Frontiers in Marine Science*, *8*: 711538. https://doi.org/10.3389/fmars.2021.711538

Bennett, N.J., Roth, R., Klain, S.C., Chan, K., Christie, P., Clark, D.A., Cullman, G., Curran, D., Durbin, T.J., Epstein, G. and Greenberg, A., 2017. Conservation social science: Understanding and integrating human dimensions to improve conservation. *Biological Conservation*, *205*: 93-108.

Bergseth, B.J., Russ, G.R. and Cinner, J.E., 2015. Measuring and monitoring compliance in no-take marine reserves. *Fish and Fisheries*, *16*(2): 240-258.

Berkes, F., 2004. Rethinking community-based conservation. *Conservation Biology*, *18*(3): 621-630.

Berkes, F., 2007. Community-based conservation in a globalized world. *Proceedings of the National Academy of Sciences*, *104*(39): 15188-15193.

Berkes, F., 2009. Evolution of co-management: role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management*, *90*(5): 1692-1702.

Berkes, F., 2010. Devolution of environment and resources governance: trends and future. *Environmental Conservation*, *37*(4): 489-500.

Berkes, Fikret, P. George and R, Preston, (1991). Co-Management: The Evolution of the Theory and Practice of Joint Administration of Living Resources. *Alternatives, 18(2)*: 12-18

Bersaglio, B., 2017. Green grabbing and the contested nature of belonging in Laikipia, Kenya: A genealogy. PhD thesis. University of Toronto, Canada.

Bezerra, J., 2018. "Land claims in South Africa: it's about the meaning of the land, not just money", *The Conservation*. Available at: https://theconversation.com/land-claims-in-south-africa-its-about-the-meaning-of-the-land-not-just-money-100259 [Accessed on 17 June 2023].

Bhandari, P.B., 2013. Rural livelihood change? Household capital, community resources and livelihood transition. *Journal of Rural Studies*, *32*: 126-136.

Bhola, N., Klimmek, H., Kingston, N., Burgess, N.D., van Soesbergen, A., Corrigan, C., Harrison, J. and Kok, M.T., 2021. Perspectives on area-based conservation and its meaning for future biodiversity policy. *Conservation Biology*, *35*(1): 168-178.

Biesbroek, R., Berrang-Ford, L., Ford, J.D., Tanabe, A., Austin, S.E. and Lesnikowski, A., 2018. Data, concepts and methods for large-n comparative climate change adaptation policy research: A systematic literature review. *Wiley Interdisciplinary Reviews: Climate Change*, *9*(6): 1 - 15.

Biggs, D., Ban, N.C., Castilla, J.C., Gelcich, S., Mills, M., Gandiwa, E., Etienne, M., Knight, A.T., Marquet, P.A. and Possingham, H.P., 2019. Insights on fostering the emergence of robust conservation actions from Zimbabwe's CAMPFIRE program. *Global Ecology and Conservation*, *17*: 00538. https://doi.org/10.1016/j.gecco.2019.e00538

Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N.J., Moore, M.L., Morrison, T.H. and Brown, K., 2018. The dark side of transformation: latent risks in contemporary sustainability discourse. *Antipode*, *50*(5): 1206-1223.

Boillat, S., Gerber, J.D., Oberlack, C., Zaehringer, J.G., Ifejika Speranza, C. and Rist, S., 2018. Distant interactions, power, and environmental justice in protected area governance: A telecoupling perspective. *Sustainability*, *10*(11): 3954. https://doi.org/10.3390/su10113954

Bonilla-Moheno, M., Rangel Rivera, C.E., García-Frapolli, E., Ríos Beltrán, F.L., Espadas-Manrique, C., Aureli, F., Ayala-Orozco, B. and Ramos-Fernández, G., 2021. Changes in the socio-ecological system of a protected area in the Yucatan Peninsula: A case study on land-use, vegetation cover, and household management strategies. *Land*, *10*(11): 1147. https://doi.org/10.3390/land10111147

Booker, F. and Franks, P., 2019. Governance assessment for protected and conserved areas (GAPA). Methodology manual for GAPA facilitators. IIED, London.

Borrini-Feyerabend, G., Farvar, M.T., Nguinguiri, J.C. and Ndangang, V., 2000. Co-management of Natural Resources: Organising. *Negotiating and Learning by Doing.* IUCN, Yaoundé, Cameroon.

Boyd, H. and Charles, A., 2006. Creating community-based indicators to monitor sustainability of local fisheries. *Ocean & Coastal Management*, *49*(5-6): 237-258.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2): 77-101.

Brockington, D. and Igoe, J., 2006. Eviction for conservation: a global overview. *Conservation and Society, 4(3)*: 424-470.

Brooks, J., Waylen, K.A. and Mulder, M.B., 2013. Assessing community-based conservation projects: A systematic review and multilevel analysis of attitudinal, behavioral, ecological, and economic outcomes. *Environmental Evidence*, *2*(1): 1-34.

Brooks, T.M., Butchart, S.H., Cox, N.A., Heath, M., Hilton-Taylor, C., Hoffmann, M., Kingston, N., Rodríguez, J.P., Stuart, S.N. and Smart, J., 2015. Harnessing biodiversity and conservation knowledge products to track the Aichi Targets and Sustainable Development Goals. *Biodiversity*, *16*(2-3): 157-174.

Brownlie, S. and Botha, M., 2009. Biodiversity offsets: adding to the conservation estate, or 'no net loss'? *Impact Assessment and Project Appraisal*, *27*(3): 227-231.

Butchart, S.H., Walpole, M., Collen, B., Van Strien, A., Scharlemann, J.P., Almond, R.E., Baillie, J.E., Bomhard, B., Brown, C., Bruno, J. and Carpenter, K.E., 2010. Global biodiversity: indicators of recent declines. *Science*, *328*(5982): 1164-1168.

Camargo, C., Maldonado, J.H., Alvarado, E., Moreno-Sánchez, R., Mendoza, S., Manrique, N., Mogollón, A., Osorio, J.D., Grajales, A. and Sánchez, J.A., 2009. Community involvement in management for maintaining coral reef resilience and biodiversity in southern Caribbean marine protected areas. *Biodiversity and Conservation*, *18*: 935-956.

Carlsson, L. and F. Berkes. 2005. Co-management: concepts and methodological implications. *Journal of Environmental Management*, *75(1)*: 65-76.

Carruthers, J., 1995. The Kruger National Park: a Social and Political History. University of Natal Press, Pietermaritzburg.

Casson, S.A., 2015. Socially-just and scientifically-sound: Re-examining co-management of protected areas. *IK: Other Ways of Knowing*: 32-64. https://doi.org/10.18113/P8ik159746

Cetas, E.R. and Yasué, M., 2017. A systematic review of motivational values and conservation success in and around protected areas. *Conservation Biology*, *31*(1): 203-212.

Chapman, S., Sullivan, C., Palm, C., Huynh, U., Diru, W. and Masira, J., 2016. Monitoring and evaluation to support adaptive co-management: lessons learned from the Millennium Villages Project. *Journal of Environmental Management*, *183*: 142-151.

Chechina, M., Neveux, Y., Parkins, J.R. and Hamann, A., 2018. Balancing conservation and livelihoods: A study of forest-dependent communities in the Philippines. *Conservation and Society*, *16*(4): 420-430.

Chen, Q., Zhang, Y., Zhang, Y. and Kong, M., 2022. Examining Social Equity in the Co-Management of Terrestrial Protected Areas: Perceived Fairness of Local Communities in Giant Panda National Park, China. *Land*, *11*(10): 1624. https://doi.org/10.3390/land11101624

Chevallier, S., 2021. Elevating the Role of Communities in Conservation Management Areas. *JSTOR Sustainability Collection*. Available at: https://saiia.org.za/research/elevating-the-role-of-communities-in-conservation-management [Accessed on 10 November 2023]

Chowdhury, M.S.H., Gudmundsson, C., Izumiyama, S., Koike, M., Nazia, N., Rana, M.P., Mukul, S.A., Muhammed, N. and Redowan, M., 2014. Community attitudes toward forest conservation programs through collaborative protected area management in Bangladesh. *Environment, Development and Sustainability*, *16*: 1235-1252.

Cocks, M.L., Dold, T. and Vetter, S., 2012. 'God is my forest'-Xhosa cultural values provide untapped opportunities for conservation. *South African Journal of Science*, *108*(5): 1-8.

Colua de Oliveira, E.R., 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): 707-713.

Colua de Oliveira, E.R., 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): 707-713.

Convention on Biological Diversity (CBD), 2019. Preparations for the post-2020 global biodiversity framework: CBD/POST2020/PREP/1/1, 25 January 2019: Available at: https://www.cbd.int/doc/c/d431/b38f/3d580bb73e7c2b5aaa286310/post2020-prep-01-01-en.pdf [Accessed on 23 March 2022].

Convention on Biological Diversity (CBD), 2010. Guidance for National Biodiversity Indicator Development and Use. Available at: https://www.cbd.int/doc/meetings/ind/ahteg-sp-ind-01/other/ahteg-sp-ind-01-bipnational-en.pdf [Accessed on 6 November 2023].

Convention on Biological Diversity (CBD), 2010. Target 11, Aichi Biodiversity Targets. Available: https://www.cbd.int/sp/targets/ [Accessed on 11 July 2023].

Convention on Biological Diversity (CBD), 2019. Protected areas an overview. Available at: https://www.cbd.int/protected/overview/ [Accessed on 3 August 2023].

Convention on Biological Diversity (CBD), 2020. Update of the zero draft of the post-2020 global biodiversity framework. Available at: https://www.cbd.int/article/zero-draft-update-august-2020 [Accessed on 10 November 2023].

Convention on Biological Diversity (CBD), 2022. Decision adopted by the conference of the parties to the Convention on Biological Diversity 15/4. Kunming-Montreal Global Biodiversity Framework. Available at: https://www.cbd.int/conferences/post20202CBD/WG8J/11/7,CBD/SBSTTA/23/9,CBD/SBSTTA/24/12andCBD/SBI/3/21,respectively [Accessed on 10 November 2023].

Convention on Biological Diversity (CBD). 2020 Global Biodiversity Outlook 5. Available at: www.emdashdesign.ca [Accessed on 12 May 2023].

Convention on Biological Diversity (CBD), 2020. Aichi biodiversity targets. 2020; Secretariat of the Convention on Biological Diversity, September 18. Available at: https://www.cbd.int/sp/targets/ [Accessed on 12 May 2023].

Cook, C.N. and Hockings, M., 2011. Opportunities for improving the rigor of management effectiveness evaluations in protected areas. *Conservation Letters*, *4*(5): 372-382.

Cornwall, A., 2008. Unpacking 'Participation': models, meanings and practices. *Community Development Journal*, *43*(3): 269-283.

Corson, C., Worcester, J., Rogers, S. and Flores-Ganley, I., 2020. From paper to practice? Assembling a rights-based conservation approach. *Journal of Political Ecology*, *27*(1): 1128-1147.

Cortes-Capano, G., Hausmann, A., Di Minin, E. and Kortetmäki, T., 2022. Ethics in biodiversity conservation: The meaning and importance of pluralism. *Biological Conservation*, *275*: 109759. https://doi.org/10.1016/j.biocon.2022.109759

Cumming, G.S. and Allen, C.R., 2017. Protected areas as social-ecological systems: perspectives from resilience and social-ecological systems theory. *Ecological Applications*, *27*(6): 1709-1717.

Cumming, G.S., 2016. The relevance and resilience of protected areas in the Anthropocene. *Anthropocene*, *13*: 46-56.

Cumming, G.S., Allen, C.R., Ban, N.C., Biggs, D., Biggs, H.C., Cumming, D.H., De Vos, A., Epstein, G., Etienne, M., Maciejewski, K. and Mathevet, R., 2015. Understanding protected area resilience: a multi-scale, social-ecological approach. *Ecological Applications*, *25*(2): 299-319.

Cundill, G., Bezerra, J.C., De Vos, A. and Ntingana, N., 2017. Beyond benefit sharing: Place attachment and the importance of access to protected areas for surrounding communities. *Ecosystem Services*, *28*: 140-148.

Cundill, G., Thondhlana, G., Sisitka, L., Shackleton, S. and Blore, M., 2013. Land claims and the pursuit of co-management on four protected areas in South Africa. *Land Use Policy*, *35*: 171-178.

d'Armengol, L., Castillo, M.P., 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*: 212-225.

Dahlberg, A., Rohde, R. and Sandell, K., 2010. National parks and environmental justice: Comparing access rights and ideological legacies in three countries. *Conservation and Society*, *8*(3): 209-224.

Davies, S., 1996, Adaptable Livelihoods. Coping with Food Insecurity in the Malian Sahel. MacMillan, London.

Dawson, N. and Martin, A., 2015. Assessing the contribution of ecosystem services to human wellbeing: a disaggregated study in western Rwanda. *Ecological Economics*, *117*: 62-72.

Dawson, N., Martin, A. and Danielsen, F., 2018. Assessing equity in protected area governance: approaches to promote just and effective conservation. *Conservation letters*, *11*(2): 12388. https://doi.org/10.1111/conl.12388

Dawson, N.M., Coolsaet, B., Sterling, E.J., Loveridge, R., Gross-Camp, N.D., Wongbusarakum, S., Sangha, K.K., Scherl, L.M., Phuong Phan, H., Zafra-Calvo, N. and Lavey, W.G., 2021. The role of Indigenous peoples and local communities in effective and equitable conservation. *Ecology and Society, Resilience Alliance, 26 (3): 19.* https://doi.org/10.5751/ES-12625-260319

De Koning, M., 2009. Co-management and its options in protected areas of South Africa. *Africanus*, *39*(2): 5-17.

De Koning, M.A.I., 2010. Returning Manyeleti Game Reserve to its rightful owners: land restitution in protected areas in Mpumalanga, South Africa. *Unasylva*, *61*(236): 41-46.

De Pourcq, K., Thomas, E., Arts, B., Vranckx, A., León-Sicard, T. and Van Damme, P., 2015. Conflict in protected areas: who says co-management does not work? *PLoS One*, *10*(12): 0144943. https://doi.org/10.1371/journal.pone.0144943

De Pourcq, K., Thomas, E., Arts, B., Vranckx, A., Léon-Sicard, T. and Van Damme, P., 2017. Understanding and resolving conflict between local communities and conservation authorities in Colombia. *World Development*, *93*: 125-135.

De Villiers, D.J., 2021. Biodiversity conservation of South Africa's Wild Coast through the years: Exploring the tensions between western-style and local traditional conservation practices. PhD Thesis. Department of Geography, Rhodes University, Makhanda.

Deng, X., Li, Z., Huang, J., Shi, Q. and Li, Y., 2013. A revisit to the impacts of land use changes on the human wellbeing via altering the ecosystem provisioning services. *Advances in Meteorology*, *2013 (907367)*: https://doi.org/10.1155/2013/907367

DispatchLive, 2017. EC nature reserve entangle in row. 05 July 2017. Available at: https://www.dispatchlive.co.za/news/2017-07-05-ec-nature-reserve-entangled-in-row/ [Accessed on 08 May 2023].

Dong, Q., Zhang, B., Cai, X. and Morrison, A.M., 2021. Do local residents support the development of a national park? A study from Nanling National Park based on social impact assessment (SIA). *Land*, *10*(10): 1019. https://doi.org/10.3390/land10101019

Duffy, R., 2014. Waging a war to save biodiversity: the rise of militarized conservation. *International Affairs*, *90*(4): 819-834.

Emdon, L., 2013. Gender, Livelihoods and Conservation in Hluleka, Mpondoland c.1920 to the present: Land, Forest and Marine Resources. Masters in Historical Studies, University of Cape Town. Cape Town.

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): 1938-1949.

Fabricius, C., 2004. Rights, Resources and Rural development - Community Based Natural Resource Management in South Africa. Earthscan, London.

Ferraro, P.J. and Hanauer, M.M., 2014. Quantifying causal mechanisms to determine how protected areas affect poverty through changes in ecosystem services and infrastructure. *Proceedings of the National Academy of Sciences*, *111*(11): 4332-4337.

Foale, S., Dyer, M. and Kinch, J., 2016. The value of tropical biodiversity in rural Melanesia. *Valuation Studies*, *4*(1): 11-39.

Forsyth, T., 2015. Ecological functions and functionings: towards a Senian analysis of ecosystem services. *Development and Change*, *46*(2): 225-246.

Franks, P. and Booker, F., 2015. Shared governance of protected areas in Africa: case studies, lessons learnt and conditions of success. IIED, London.

Franks, P., Booker, F. and Roe, D., 2018. *Understanding and assessing equity in protected area conservation: a matter of governance, rights, social impacts and human well-being*. IIED, London.

Friedman, R.S., Law, E.A., Bennett, N.J., Ives, C.D., Thorn, J.P. and Wilson, K.A., 2018. How just and just how? A systematic review of social equity in conservation research. *Environmental Research Letters*, *13*(5): 053001. https://doi.org/10.1088/1748-9326/aabcde

Fry, B.P., Agarwala, M., Atkinson, G., Clements, T., Homewood, K., Mourato, S., Rowcliffe, J.M., Wallace, G. and Milner-Gulland, E.J., 2017. Monitoring local well-being in environmental interventions: a consideration of practical trade-offs. *Oryx*, *51*(1): 68-76.

Gallacher, J., Simmonds, N., Fellowes, H., Brown, N., Gill, N., Clark, W., Biggs, C. and Rodwell, L.D., 2016. Evaluating the success of a marine protected area: A systematic review approach. *Journal of Environmental Management*, *183*: 280-293.

Galvin, K.A., Beeton, T.A. and Luizza, M.W., 2018. African community-based conservation. *Ecology and Society*, *23*(3): https://doi.org/10.5751/ES-10217-230339

Gandiwa, E., Heitkönig, I.M., Lokhorst, A.M., Prins, H.H. and Leeuwis, C., 2013. CAMPFIRE and human-wildlife conflicts in local communities bordering northern Gonarezhou National Park, Zimbabwe. *Ecology and Society*, *18*(4): http://dx.doi.org/10.5751/ES-05817-180407

Gatiso, T.T., Kulik, L., Bachmann, M., Bonn, A., Bösch, L., Freytag, A., Heurich, M., Wesche, K., Winter, M., Ordaz-Németh, I. and Sop, T., 2022. Sustainable protected areas: Synergies between biodiversity conservation and socioeconomic development. *People and Nature*, *4*(4): 893-903.

Geldmann, J., Barnes, M., Coad, L., Craigie, I.D., Hockings, M. and Burgess, N.D., 2013. Effectiveness of terrestrial protected areas in reducing habitat loss and population declines. *Biological Conservation*, *161*: 230-238.

Gerring, J., 2017. Qualitative methods. *Annual Review of Political Science*, *20*: 15-36.

Ghoddousi, A., Loos, J. and Kuemmerle, T., 2022. An outcome-oriented, social-ecological framework for assessing protected area effectiveness. *Bioscience, 72(2)*: 201–212.

Gordon-Cumming, I. and Mearns, K., 2021. Insights into community attitudes and perceptions at Borakalalo National Park, South Africa. *Journal of Asian and African Studies*, *56*(7): 1470-1487.

Gottlieb, M., Haas, M.R., Daniel, M. and Chan, T.M., 2021. The scoping review: a flexible, inclusive, and iterative approach to knowledge synthesis. *AEM Education and Training*, *5*(3): 10609. https://doi.org/10.1002%2Faet2.10609

Gray, C.L., Hill, S.L., Newbold, T., Hudson, L.N., Börger, L., Contu, S., Hoskins, A.J., Ferrier, S., Purvis, A. and Scharlemann, J.P., 2016. Local biodiversity is higher inside than outside terrestrial protected areas worldwide. *Nature Communications*, *7*(1): 1-7.

Gross-Camp, N., 2017. Tanzania's community forests: their impact on human well-being and persistence in spite of the lack of benefit. *Ecology and Society*, *22*(1): https://doi.org/10.5751/ES-09124-220137

Gurney, G.G., Mangubhai, S., Fox, M., Kim, M.K. and Agrawal, A., 2021. Equity in environmental governance: perceived fairness of distributional justice principles in marine co-management. *Environmental Science & Policy*, *124*: 23-32.

Gurney, G.G., Pressey, R.L., Cinner, J.E., Pollnac, R. and Campbell, S.J., 2015. Integrated conservation and development: evaluating a community-based marine protected area project for equality of socioeconomic impacts. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *370*(1681): 20140277. https://doi.org/10.1098/rstb.2014.0277

Gurung, H.B., 2010. Trends in protected areas. Gold CRC for Sustainable Tourism, Coast, Australia. Available at: https://sustain.pata.org/wp-content/uploads/2015/01/STCRC001_Gurung_Trends-In-Protected-Areas_WEB.pdf [Accessed on 07 July 2023].

Hall, R., 2010. Reconciling the Past, Present, and Future. *Land, Memory, Reconstruction and Justice: Perspectives on Land Claims in South Africa.* Ohio University Press, Athens

Hansen, A. J., and DeFries, R., 2007. Ecological mechanisms linking protected areas to surrounding lands. *Ecological Applications*, *17(4)*: 974-988.

Harker, A.L., Stojanovic, T.A., Majalia, A.M., Jackson, C., Baya, S. and Tsiganyiu, K.D., 2022. Relationships between livelihoods, well-being, and marine protected areas: Evidence from a community survey, Watamu marine National Park and reserve, Kenya. *Coastal Management*, *50*(6): 490-513.

Hattam, C.E., Mangi, S.C., Gall, S.C. and Rodwell, L.D., 2014. Social impacts of a temperate fisheries closure: understanding stakeholders' views. *Marine Policy*, *45*: 269-278.

Hayes, T. and Murtinho, F., 2018. Communal governance, equity and payment for ecosystem services. *Land Use Policy*, *79*: 123-136.

Hernández, A.C.C., Ortega-Argueta, A., Campillo, L.M.G., Bello-Baltazar, E. and Nieto, R.R., 2022. Effectiveness of management of the Mesoamerican Biological Corridor in Mexico. *Landscape and Urban Planning*, *226*: 104504. https://doi.org/10.1016/j.landurbplan.2022.104504

Hicks, C.C., Levine, A., Agrawal, A., Basurto, X., Breslow, S.J., Carothers, C., Charnley, S., Coulthard, S., Dolsak, N., Donatuto, J. and Garcia-Quijano, C., 2016. Engage key social concepts for sustainability. *Science*, *352*(6281): 38-40.

Hobson, K., 2004. Environmental justice: An anthropocentric social justice critique of how, where and why environmental goods and bads are distributed. *Environmental Politics*, *13*(2): 474-481.

Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. 2006. Evaluating effectiveness: a framework for assessing management effectiveness of protected areas. Second edition. IUCN, Gland, Switzerland.

Holmes-Watts, T. and Watts, S., 2008. Legal frameworks for and the practice of participatory natural resources management in South Africa. *Forest Policy and Economics*, *10*(7-8): 435-443.

Howe, C., Suich, H., Vira, B. and Mace, G.M., 2014. Creating win-wins from trade-offs? Ecosystem services for human well-being: a meta-analysis of ecosystem service trade-offs and synergies in the real world. *Global Environmental Change*, *28*: 263-275.

Huber, J.M., Newig, J. and Loos, J., 2023. Participation in protected area governance: A systematic case survey of the evidence on ecological and social outcomes. *Journal of Environmental Management*, *336*: 117593. https://doi.org/10.1016/j.jenvman.2023.117593

Idrissou, L., van Paassen, A., Aarts, N., Vodouhè, S. and Leeuwis, C., 2013. Trust and hidden conflict in participatory natural resources management: The case of the Pendjari national park (PNP) in Benin. *Forest Policy and Economics*, *27*: 65-74.

International Union for Conservation of Nature (IUCN). Available at: https://www.iucn.org/theme/protected-areas/about [Accessed on 03 April 2022].

IPBES Values Assessment - Decisions Based on Narrow Set of Market Values of Nature Underpin the Global Biodiversity Crisis. Available at: https://ipbes.net/es/node/40304 [Accessed on 06 August 2022].

IPBES, 2019. Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem. Available at: https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services [Accessed on 29 October 2023]

Izurieta, A., Sithole, B., Stacey, N., Hunter-Xenie, H., Campbell, B., Donohoe, P., Brown, J. and Wilson, L., 2011. Developing indicators for monitoring and evaluating joint management effectiveness in protected areas in the Northern Territory, Australia. *Ecology and Society*, *16*(3): http://dx.doi.org/10.5751/ES-04274-160309

Jani, V., Webb, N.L. and de Wit, A.H., 2023. Community-based natural resource management and social exclusion in Zimbabwe. *Development Southern Africa*: 1-18. https://doi.org/10.1080/0376835X.2023.2279112

Janssens, I., de Bisthoven, L.J., Rochette, A.J., Kakaï, R.G., Akpona, J.D.T., Dahdouh-Guebas, F. and Hugé, J., 2022. Conservation conflict following a management shift in Pendjari

National Park (Benin). *Biological Conservation*, *272*: 109598. https://doi.org/10.1016/j.biocon.2022.109598

Jefferson, R.L., Bailey, I., Richards, J.P. and Attrill, M.J., 2014. Public perceptions of the UK marine environment. *Marine Policy*, *43*: 327-337.

Jefferson, R.L., McKinley, E., Griffin, H., Nimmo, A. and Fletcher, S., 2021. Public perceptions of the ocean: lessons for marine conservation from a global research review. *Frontiers in Marine Science*, *8*: 1705. https://doi.org/10.3389/fmars.2021.711245

Jones, N., McGinlay, J. and Dimitrakopoulos, P.G., 2017. Improving social impact assessment of protected areas: A review of the literature and directions for future research. *Environmental Impact Assessment Review*, *64*: 1-7.

Jones, S., 2006. A political ecology of wildlife conservation in Africa. *Review of African Political Economy*, *33*(109): 483-495.

Júnior, J.G.C.O., Ladle, R.J., Correia, R. and Batista, V.S., 2016. Measuring what matters–Identifying indicators of success for Brazilian marine protected areas. *Marine Policy*, *74*: 91-98.

Jupiter, S.D., Wenger, A., Klein, C.J., Albert, S., Mangubhai, S., Nelson, J., Teneva, L., Tulloch, V.J., White, A.T. and Watson, J.E., 2017. Opportunities and constraints for implementing integrated land–sea management on islands. *Environmental Conservation*, *44*(3): 254-266.

Kabra, A., 2009. Conservation-induced displacement: a comparative study of two Indian protected areas. *Conservation and Society*, *7*(4): 249-267.

Kaoma, H. and Shackleton, C.M., 2015. The direct-use value of urban tree non-timber forest products to household income in poorer suburbs in South African towns. *Forest Policy and Economics*, *61*: 104-112.

Kareiva, P., Groves, C. and Marvier, M., 2014. The evolving linkage between conservation science and practice at The Nature Conservancy. *Journal of Applied Ecology*, *51*(5): 1137-1147.

Katikiro, R., Kweka, O., Namkesa, F., Ponte, S. and Minja, R.A., 2017. Sustainability partnerships for the governance of coastal resources in Tanzania. Copenhagen Business School, CBS. NEPSUS Working Paper No. 17-5

Katswera, J., Mutekanga, N.M. and Twesigye, C.K., 2022. Community Perceptions and Attitudes towards Conservation of Wildlife in Uganda. *Journal of Wildlife and Biodiversity*, *6*(4): 42-65.

Kegamba, J.J., Sangha, K.K., Wurm, P. and Garnett, S.T., 2022. A review of conservation-related benefit-sharing mechanisms in Tanzania. *Global Ecology and Conservation*, *33*: 01955. https://doi.org/10.1016/j.gecco.2021.e01955

Kepe, T. 2007. Medicinal plants and rural livelihoods in Pondoland, South Africa: Towards an understanding of resource value. *International Journal of Biodiversity Science and Management*, 3(3): 170-183.

Kepe, T., 2001. Clearing the ground in the Spatial Development Initiatives (SDIs): Analysing 'process' on South Africa's Wild Coast. *Development Southern Africa*, 18(3): 279-293.

Kepe, T., 2005. Grasslands ablaze: vegetation burning by rural people in Pondoland, South Africa. *South African Geographical Journal*, *87*(1): 10-17.

Kepe, T., 2008. Land claims and co-management of protected areas in South Africa: exploring the challenges. *Environmental Management*, *41*(3): 311-321.

Kepe, T., 2012. Land and justice in South Africa: Exploring the ambiguous role of the state in the land claims process. *African and Asian studies*, *11*(4): 391-409.

Kepe, T., Wynberg, R. and Ellis, W., 2005. Land reform and biodiversity conservation in South Africa: complementary or in conflict? *The International Journal of Biodiversity Science and Management*, *1*(1): 3-16.

Khan, M.Z., Shah, S.M. and Khan, A.A., 2023. Assessing conservation attitudes of mountain communities under different resource management regimes in northern Pakistan. *Environment, Development and Sustainability*, *25*(3): 2550-2570.

Khanyari, M., Dorjay, R., Lobzang, S., Bijoor, A. and Suryawanshi, K., 2023. Co-designing conservation interventions through participatory action research in the Indian Trans-Himalaya. *Ecological Solutions and Evidence*, *4*(2): 12232. https://doi.org/10.1002/2688-8319.12232

Kourantidou, M., Hoover, C. and Bailey, M., 2020. Conceptualizing indicators as boundary objects in integrating Inuit knowledge and western science for marine resource management. *Arctic Science*, *6*(3): 279-306.

Kovács, E., Kelemen, E., Kalóczkai, Á., Margóczi, K., Pataki, G., Gébert, J., Málovics, G., Balázs, B., Roboz, Á., Kovács, E.K. and Mihók, B., 2015. Understanding the links between ecosystem service trade-offs and conflicts in protected areas. *Ecosystem Services*, *12*: 117-127.

Kuiper, J.J., Van Wijk, D., Mooij, W.M., Remme, R.P., Peterson, G.D., Karlsson-Vinkhuyzen, S., Mooij, C.J., Leltz, G.M. and Pereira, L.M., 2022. Exploring desirable nature futures for Nationaal Park Hollandse Duinen. *Ecosystems and People*, *18*(1): 329-347.

Kura, Y., Mam, K., Chea, S., Eam, D., Almack, K. and Ishihara, H., 2023. Conservation for sustaining livelihoods: Adaptive co-management of fish no-take zones in the Mekong River. *Fisheries Research*, *265*: 106744. https://doi.org/10.1016/j.fishres.2023.106744

Leclère D, Obersteiner M, Barrett M, Butchart SHM, Chaudhary A, de Palma A, DeClerck FAJ, di Marco M, Doelman JC, Dürauer M, Freeman R, Harfoot M, Hasegawa T, Hellweg S, Hilbers JP, Hill SLL, Humpenöder F, Jennings N, Krisztin T, Young L., 2022. Bending the curve of terrestrial biodiversity needs an integrated strategy. *Nature, 585(7826)*: 551–556.

Leisher, C., Samberg, L.H., Van Buekering, P. and Sanjayan, M., 2013. Focal areas for measuring the human well-being impacts of a conservation initiative. *Sustainability*, *5*(3): 997-1010.

Lele, S., Wilshusen, P., Brockington, D., Seidler, R. and Bawa, K., 2010. Beyond exclusion: alternative approaches to biodiversity conservation in the developing tropics. *Current Opinion in Environmental Sustainability*, *2*(1-2): 94-100.

Leleu, K., Alban, F., Pelletier, D., Charbonnel, E., Letourneur, Y. and Boudouresque, C.F., 2012. Fishers' perceptions as indicators of the performance of Marine Protected Areas (MPAs). *Marine Policy*, *36*(2): 414-422.

Lockwood, M., Worboys, G. and Kothari, A., 2006. *Managing protected areas: a global guide*. Earthscan, London.

Loewe, M., 2013. Land claim closes reserve. *Daily Dispatch*, 08 May 2013. Available at: http://www.dispatchlive.co.za/news/land-claim-closes-reserve/ [accessed on 24 June 2022].

Lopes, P.F., de Freitas, C.T., Hallwass, G., Silvano, R.A., Begossi, A. and Campos-Silva, J.V., 2021. Just Aquatic Governance: The Amazon basin as fertile ground for aligning participatory conservation with social justice. *Aquatic Conservation: Marine and Freshwater Ecosystems*, *31*(5): 1190-1205.

Loury, E.K. and Ainsley, S.M., 2020. Identifying indicators to evaluate community-managed freshwater protected areas in the Lower Mekong Basin: A review of marine and freshwater examples. *Water*, *12*(12): 3530. https://doi.org/10.3390/w12123530

Lunstrum, E. and Ybarra, M., 2018. Deploying difference: Security threat narratives and state displacement from protected areas. *Conservation and Society*, *16*(2): 114-124.

Ma, B., Zhang, Y., Hou, Y. and Wen, Y., 2020. Do protected areas matter? A systematic review of the social and ecological impacts of the establishment of protected areas. *International Journal of Environmental Research and Public Health*, *17*(19): 7259. https://doi.org/10.3390/ijerph17197259

Maciejewski, K., De Vos, A., Cumming, G.S., Moore, C. and Biggs, D., 2015. Cross-scale feedbacks and scale mismatches as influences on cultural services and the resilience of protected areas. *Ecological Applications*, *25*(1): 11-23.

Maliao, R.J. and Polohan, B.B., 2008. Evaluating the impacts of mangrove rehabilitation in Cogtong Bay, Philippines. *Environmental Management*, *41*: 414-424.

Maliao, R.J., Pomeroy, R.S. and Turingan, R.G., 2009. Performance of community-based coastal resource management (CBCRM) programs in the Philippines: a meta-analysis. *Marine Policy*, *33*(5): 818-825.

Maluleke, G., 2018. Rethinking protected area co-management in the Makuleke Region. PhD Thesis. Department of Sociology and Social Anthropology, University of Stellenbosch, Stellenbosch.

Manda, L., Salako, K.V., Kataya, A., Affossogbe, S.A., Njera, D., Mgoola, W.O., Assogbadjo, A.E. and Sinsin, B., 2023. Co-management brings hope for effective biodiversity conservation and socio-economic development in Vwaza Marsh Wildlife Reserve in Malawi. *Frontiers in Conservation Science, 4*: 1124142. https://doi.org/10.3389/fcosc.2023.1124142

Martin, A., 2017. *Just conservation: Biodiversity, wellbeing and sustainability*. Routledge, London.

Martin, A., Coolsaet, B., Corbera, E., Dawson, N. M., Fraser, J. A., Lehmann, I., and Rodriguez, I., 2016. Justice and conservation: The need to incorporate recognition. *Biological Conservation*, 197: 254–261.

Martino, S. and Kenter, J.O., 2023. Economic valuation of wildlife conservation. *European Journal of Wildlife Research*, *69*(2): 32. https://doi.org/10.1007/s10344-023-01658-2

Masterson, V.A., Spierenburg, M. and Tengö, M., 2019. The trade-offs of win–win conservation rhetoric: exploring place meanings in community conservation on the Wild Coast, South Africa. *Sustainability Science*, *14*: 639-654.

Matema, S. and Andersson, J.A., 2015. Why are lions killing us? Human–wildlife conflict and social discontent in Mbire District, northern Zimbabwe. *The Journal of Modern African Studies*, *53*(1): 93-120.

Mathevet, R., Thompson, J.D., Folke, C. and Chapin III, F.S., 2016. Protected areas and their surrounding territory: socioecological systems in the context of ecological solidarity. *Ecological Applications*, *26*(1): 5-16.

Mawa, C., Babweteera, F. and Tumusiime, D.M., 2022. Livelihood outcomes after two decades of co-managing a state forest in Uganda. *Forest Policy and Economics*, *135*: 102644. https://doi.org/10.1016/j.forpol.2021.102644

McCauley, D.J., 2006. Selling out on nature. *Nature*, *443*(7107): 27-28.

McClanahan, T.R., Marnane, M.J., Cinner, J.E. and Kiene, W.E., 2006. A comparison of marine protected areas and alternative approaches to coral-reef management. *Current Biology*, *16*(14): 1408-1413.

McDermott, M., Mahanty, S. and Schreckenberg, K., 2013. Examining equity: a multidimensional framework for assessing equity in payments for ecosystem services. *Environmental Science & Policy*, *33*: 416-427.

Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.

Mollett, S. and Kepe, T., 2018. *Land Rights, Biodiversity Conservation and Justice*. *Rethinking Parks and People*. Routledge, London.

Mollick, A.S., Ranon, R.J.K., Khan, M.N.I. and Nath, T.K., 2023. Evaluating Social Equity in Protected Areas Co-management: Evidence from the Sundarbans Mangrove Forests, Bangladesh. *Society & Natural Resources, 36(8)*: 1-21.

Mollick, A.S., Roy, M., Khan, N.I., Islam, W., Sadath, N. and Nath, T.K., 2022. Assessing good governance in protected areas (PA) Co-management: a case study of the Sundarbans Mangrove Forests of Bangladesh. *Journal of Sustainable Forestry*, *41*(3-5): 277-301.

Morgera, E., 2018. Dawn of a New Day: The Evolving Relationship between the Convention on Biological Diversity and International Human Rights Law. *Wake Forest Law Review*, *53(4)*: 691-712.

Moswete, N., Thapa, B. and Darley, W.K., 2020. Local communities' attitudes and support towards the Kgalagadi Transfrontier Park in southwest Botswana. *Sustainability*, *12(4)*: 1524. https://doi.org/10.3390/su12041524

Moyo, I., 2023. Beyond a tokenistic inclusion of indigenous knowledge systems in protected area governance and management in Okhahlamba-Drakensberg. *African Geographical Review*, *42*(2): 141-156.

Mudge, L., 2018. Use of community perceptions to evaluate and adapt coastal resource management practices in the Philippines. *Ocean & Coastal Management*, *163*: 304-322.

Muhumuza, M. and Balkwill, K., 2013. Factors affecting the success of conserving biodiversity in national parks: A review of case studies from Africa. *International Journal of Biodiversity*, *2013(798101)*: https://doi.org/10.1155/2013/798101

Muradian, R. and Gómez-Baggethun, E., 2021. Beyond ecosystem and nature's contributions: is it time to leave utilitarian environmentalism behind? *Ecological Economics, 185*: 107038. https://doi.org/10.1016/j.ecolecon.2021.107038

Mutanga, C.N., Vengesayi, S., Muboko, N. and Gandiwa, E., 2015. Towards harmonious conservation relationships: A framework for understanding protected area staff-local community relationships in developing countries. *Journal for Nature Conservation*, *25*: 8-16.

Naidoo, R., Gerkey, D., Hole, D., Pfaff, A., Ellis, A.M., Golden, C.D., Herrera, D., Johnson, K., Mulligan, M., Ricketts, T.H. and Fisher, B., 2019. Evaluating the impacts of protected areas on human well-being across the developing world. *Science Advances*, *5*(4): 3006. https://doi.org/10.1126/sciadv.aav3006

Neumann, R.P., 2004. Moral and discursive geographies in the war for biodiversity in Africa. *Political Geography*, 23: 813–837.

Newcomer, K.E., Hatry, H.P. and Wholey, J.S., 2015. *Handbook of practical program evaluation*. Jossey-Bass & Pfeiffer Imprints, Wiley, San Francisco, CA.

Newing, H., 2010. *Conducting research in conservation: social science methods and practice*. Routledge, London.

Nijkamp, P., Vindigni, G. and Nunes, P.A., 2008. Economic valuation of biodiversity: A comparative study. *Ecological Economics*, *67*(2): 217-231.

Nila, M.U.S., Beierkuhnlein, C., Jaeschke, A., Hoffmann, S. and Hossain, M.L., 2019. Predicting the effectiveness of protected areas of Natura 2000 under climate change. *Ecological Processes*, *8*: 1-21.

Njaya, F., 2007. Governance challenges for the implementation of fisheries co-management: experiences from Malawi. *International Journal of the Commons*, *1*(1): 137-153.

Ntshona, Z., Kraai, M., Kepe, T. and Saliwa, P., 2010. From land rights to environmental entitlements: Community discontent in the 'successful' Dwesa-Cwebe land claim in South Africa. *Development Southern Africa*, *27*(3): 353-361.

Nxumalo, N.P., 2010. The effect of a community based natural resource management (CBNRM) programme on the capacity of the KwaPitela community in Underberg to manage its natural resources for sustainable use. Masters Thesis. Department of Environment and Development, University of KwaZulu Natal, Pietermaritzburg.

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): 133-141.

Oltremari, J.V. and Jackson, R.G., 2006. Conflicts, perceptions, and expectations of indigenous communities associated with natural areas in Chile. *Natural Areas Journal*, *26*(2): 215-220.

Ortega-Argueta, A., González-Zamora, A. and Contreras-Hernández, A., 2016. A framework and indicators for evaluating policies for conservation and development: The case of wildlife management units in Mexico. *Environmental Science & Policy*, *63*: 91-100.

Pajaro, M.G., Mulrennan, M.E., Alder, J. and Vincent, A.C., 2010. Developing MPA effectiveness indicators: comparison within and across stakeholder groups and communities. *Coastal Management*, *38*(2): 122-143.

Palomo, I., Montes, C., Martin-Lopez, B., González, J.A., Garcia-Llorente, M., Alcorlo, P. and Mora, M.R.G., 2014. Incorporating the social–ecological approach in protected areas in the Anthropocene. *BioScience*, *64*(3): 181-191.

Parker, B.G., Jacobsen, K.S., Vucetich, J.A., Dickman, A.J., Loveridge, A.J. and Macdonald, D.W., 2022. Towards equitable conservation: social capital, fear and livestock loss shape

perceived benefit from a protected area. *Journal of Environmental Management*, *319*: 115676. https://doi.org/10.1016/j.jenvman.2022.115676

Parsons, M., Taylor, L. and Crease, R., 2021. Indigenous environmental justice within marine ecosystems: A systematic review of the literature on indigenous peoples' involvement in marine governance and management. *Sustainability*, *13*(8): 1-33.

Pascual, U., Phelps, J., Garmendia, E., Brown, K., Corbera, E., Martin, A., Gomez-Baggethun, E. and Muradian, R., 2014. Social equity matters in payments for ecosystem services. *Bioscience*, *64*(11): 1027-1036.

Pathak, N., Kothari, A. and Roe, D., 2005. Conservation with social justice? The role of community conserved areas in achieving the Millennium Development Goals. In *How to Make Poverty History: The central role of local organizations in meeting the MDGs. IIED. London, UK*.

Peer, N., Muhl, E.K., Janna, J., Brown, M., Zukulu, S. and Mbatha, P., 2022. Community and marine conservation in South Africa: Are we still missing the mark? *Frontiers in Marine Science*, *9*: 884442. https://doi.org/10.3389/fmars.2022.884442

Pendleton, L.H., Ahmadia, G.N., Browman, H.I., Thurstan, R.H., Kaplan, D.M. and Bartolino, V., 2018. Debating the effectiveness of marine protected areas. *ICES Journal of Marine Science*, *75*(3): 1156-1159.

Petrus, J.N. and Mosimane, A.W., 2018. Community understanding, perceptions and involvement in tourism development in King Nehale Conservancy, Namibia. *Journal for Studies in Humanities and Social Sciences*, *17*(2): 23-41.

Petticrew, M. and Roberts, H., 2008. *Systematic reviews in the social sciences: A practical guide*. John Wiley & Sons, Hoboken.

Pisani, D., Pazienza, P., Perrino, E.V., Caporale, D. and De Lucia, C., 2021. The economic valuation of ecosystem services of biodiversity components in protected areas: A review for a framework of analysis for the Gargano National Park. *Sustainability*, *13*(21): 11726. https://doi.org/10.3390/su132111726

Pollnac, R.B., Crawford, B.R. and Gorospe, M.L., 2001. Discovering factors that influence the success of community-based marine protected areas in the Visayas, Philippines. *Ocean & Coastal Management*, *44*(11-12): 683-710.

Pomeroy, R.S., Watson, L.M., Parks, J.E. and Cid, G.A., 2005. How is your MPA doing? A methodology for evaluating the management effectiveness of marine protected areas. *Ocean & Coastal Management*, *48* (7-8): 485-502.

Quimby, B. and Levine, A., 2018. Participation, power, and equity: examining three key social dimensions of fisheries comanagement. *Sustainability*, *10*(9): 3324. https://doi.org/10.3390/su10093324

Rampheri, M. B., Dube, T., Shoko, C., Marambanyika, T. and Dhau, I., 2022. Local community attitudes and perceptions towards benefits and challenges associated with biodiversity conservation in Blouberg Nature Reserve, South Africa. *African Journal of Ecology,* 60 (3): 1–11.

Ramutsindela, M. and Shabangu, M., 2018. *The promise and limit of environmental justice through land restitution in protected areas in South Africa*. Routledge, London.

Reid, H., Fig, D., Magome, H. and Leader-Williams, N., 2004. Co-management of contractual national parks in South Africa: Lessons from Australia. *Conservation and Society*, 2(2): 377-409.

Roe, D., 2008. The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Oryx*, *42*(4): 491-503.

Ruoso, L.E. and Plant, R., 2021. Distributive and contextual equity in landholder participation in biodiversity offsets: a case study of biodiversity offsets in New South Wales, Australia. *Ecosystems and People*, *17*(1): 6-24.

Rural Development and Land Reform, 2019. *Draft Settlement Agreement for the Settlement of Hluleka Community Claim*. 40.

Salerno, J., Romulo, C., Galvin, K.A., Brooks, J., Mupeta-Muyamwa, P. and Glew, L., 2021. Adaptation and evolution of institutions and governance in community-based

conservation. *Conservation Science and Practice*, *3*(1): 355. https://doi.org/10.1111/csp2.355

Santana-Medina, N., Franco-Maass, S., Sánchez-Vera, E., Imbernon, J. and Nava-Bernal, G., 2013. Participatory generation of sustainability indicators in a natural protected area of Mexico. *Ecological Indicators*, *25*: 1-9.

Sarmiento-Mateos, P., Arnaiz-Schmitz, C., Herrero-Jáuregui, C., D. Pineda, F. and Schmitz, M.F., 2019. Designing protected areas for social–ecological sustainability: Effectiveness of management guidelines for preserving cultural landscapes. *Sustainability*, *11*(10): 2871. https://doi.org/10.3390/su11102871

Scherl, L.M., Wilson, A. and Wild, R., 2004. *Can protected areas contribute to poverty reduction? Opportunities and Limitations*. IUCN. Gland, Switzerland.

Schreckenberg, K., Franks, P., Martin, A. and Lang, B., 2016. Unpacking equity for protected area conservation. *Parks*, *22*(2): 11-26.

Schulze, K., Knights, K., Coad, L., Geldmann, J., Leverington, F., Eassom, A., Marr, M., Butchart, S.H., Hockings, M. and Burgess, N.D., 2018. An assessment of threats to terrestrial protected areas. *Conservation Letters*, *11*(3): 12435. https://doi.org/10.1111/CONL.12435

Scoones, I. 1998. Sustainable rural livelihoods: A framework for analysis. IDS working paper 72. Institute of Development Studies, UK.

Sena, N., Veiga, A., Semedo, A., Abu-Raya, M., Semedo, R., Fujii, I. and Makino, M., 2023. Co-Designing Protected Areas Management with Small Island Developing States' Local Stakeholders: A Case from Coastal Communities of Cabo Verde. *Sustainability*, *15*(20): 15178. https://doi.org/10.3390/su152015178

Sena-Vittini, M., Gomez-Valenzuela, V. and Ramirez, K., 2023. Social perceptions and conservation in protected areas: Taking stock of the literature. *Land Use Policy*, *131*: 106696. https://doi.org/10.1016/j.landusepol.2023.106696

Shackleton, C.M. and de Vos, A., 2022. How many people globally actually use non-timber forest products? *Forest Policy and Economics*, *135*: 102659. https://doi.org/10.1016/j.forpol.2021.102659

Sharma, R.A., 1995. Participatory forest management in India. *Ambio*, 24(2): 131-133.

Sharma, R.A., 2011. Co-management of protected areas in South Asia with special reference to Bangladesh. *Asia-Pacific Journal of Rural Development*, *21*(1): 1-28.

Sharpe, B., Hodgson, A., Leicester, G., Lyon, A. and Fazey, I., 2016. Three horizons: a pathways practice for transformation. *Ecology and Society*, *21*(2): 47.

Silva, J.A. and Mosimane, A.W., 2013. Conservation-based rural development in Namibia: a mixed-methods assessment of economic benefits. *The Journal of Environment & Development*, *22*(1): 25-50.

Skutsch, M. and Turnhout, E., 2020. REDD+: If communities are the solution, what is the problem? *World Development*, *130*: 104942. https://doi.org/10.1016/j.worlddev.2020.104942

Snyman, S. and Bricker, K.S., 2019. Living on the edge: Benefit-sharing from protected area tourism. *Journal of Sustainable Tourism*, *27*(6): 705-719.

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): 483-493.

Sowman, M. and Sunde, J., 2018. Social impacts of marine protected areas in South Africa on coastal fishing communities. *Ocean & Coastal Management*, *157*: 168-179.

Spenceley, A., Snyman, S. and Rylance, A., 2021. Revenue sharing from tourism in terrestrial African protected areas. In *Living on the Edge*. Routledge, London.

Stacey, N., Izurieta, A. and Garnett, S.T., 2013. Collaborative measurement of performance of jointly managed protected areas in northern Australia. *Ecology and Society*, *18*(1): 19. http://dx.doi.org/10.5751/ES-05273-180119

Statistics South Africa. 2012: Census Data 2011. Statistics South Africa, Pretoria. Available at: https://www.statssa.gov.za [Accessed on 30 April 2022].

Steffen, W., Crutzen, P.J. and McNeill, J.R., 2007. The Anthropocene: are humans now overwhelming the great forces of nature. *AMBIO: A Journal of the Human Environment*, *36*(8): 614-621.

Struhsaker, T.T., Struhsaker, P.J. and Siex, K.S., 2005. Conserving Africa's rain forests: problems in protected areas and possible solutions. *Biological Conservation*, *123*(1): 45-54.

Subakanya, M., Tembo, G. and Richardson, R.B., 2018. Land use planning and wildlife-inflicted crop damage in Zambia. *Environments*, *5*(10): 110. https://doi.org/10.20944/preprints201808.0104.v1

Tadesse, S., Woldetsadik, M. and Senbeta, F., 2017. Effects of participatory forest management on livelihood assets in Gebradima forest, southwest Ethiopia. *Forests, Trees and Livelihoods*, *26*(4): 229-244.

Teitelbaum, S., 2014. Criteria and indicators for the assessment of community forestry outcomes: a comparative analysis from Canada. *Journal of Environmental Management*, *132*: 257-267.

Thondhlana, G. and Cundill, G., 2017. Local people and conservation officials' perceptions on relationships and conflicts in South African protected areas. *International Journal of Biodiversity Science, Ecosystem Services & Management*, *13*(1): 204-215.

Thondhlana, G., Cundill, G. and Kepe, T., 2016. Co-management, land rights, and conflicts around South Africa's Silaka Nature Reserve. *Society & Natural Resources*, *29*(4): 403-417.

Thondhlana, G., Redpath, S.M., Vedeld, P.O., van Eeden, L., Pascual, U., Sherren, K. and Murata, C., 2020. Non-material costs of wildlife conservation to local people and their implications for conservation interventions. *Biological Conservation*, *246*: 108578. https://doi.org/10.1016/j.biocon.2020.108578

Thondhlana, G., Shackleton, S. and Muchapondwa, E., 2012. Kgalagadi Transfrontier Park and its land claimants: a pre-and post-land claim conservation and development history. *Environmental Research Letters*, *6*(2): 1-12.

Timko, J.A. and Satterfield, T., 2008. Seeking social equity in national parks: experiments with evaluation in Canada and South Africa. *Conservation and Society*, *6*(3): 238-254.

Titumir, R.A.M. and Afrin, T., 2017. The complementarity of human and nature well-being: A case illustrated by traditional forest resource users of the Sundarbans in Bangladesh. *Thematic Review*: In UNU-IAS and IGES, 2017. Sustainable livelihoods in socio-ecological

production landscapes and seascapes (*Satoyama Initiative Thematic Review, 3*), United Nations University Institute for the Advanced Study of Sustainability, Tokyo.

Tonin, S. and Lucaroni, G., 2017. Understanding social knowledge, attitudes and perceptions towards marine biodiversity: The case of tegnùe in Italy. *Ocean & Coastal Management*, *140*: 68-78.

Trimble, M. and Plummer, R., 2018. Participatory evaluation in times of governance transition: The case of small-scale fisheries in Uruguay. *Ocean & Coastal Management*, *161*: 74-83.

Tshidzumba, R.P., Chirwa, P.W. and Babalola, F.D., 2018. Communities' perceptions of benefit-sharing mechanisms for forest-based land reform models in South Africa. *Southern Forests: A Journal of Forest Science*, *80*(4): 381-389.

Tupala, A.K., Huttunen, S. and Halme, P., 2022. Social impacts of biodiversity offsetting: A review. *Biological Conservation*, *267*: 109431. https://doi.org/10.1016/j.biocon.2021.109431

Turner, R.A., Fitzsimmons, C., Forster, J., Mahon, R., Peterson, A. and Stead, S.M., 2014. Measuring good governance for complex ecosystems: perceptions of coral reef-dependent communities in the Caribbean. *Global Environmental Change*, *29*: 105-117.

Turner, S., 2013. Community-based natural resource management and rural livelihoods. In *Rights Resources and Rural Development* (59-80). Routledge, Sterling VA.

Turnhout, E., 2020. Biodiversity and the blind spot of nature conservation policy. *Belied en Maatschappij* 47(1): 97–98 [English translation]. Available at: https://politicalecologynetwork.org/2020/04/30/biodiversity-and-the-blind-spot-of-nature-conservation-policy/ [Accessed on 14 November 2023].

Uddin, M.A. and Foisal, A.S.A., 2005. 'Local Perceptions of Natural Resource Conservation in Chunati Wildlife Sanctuary', in Fox J, Bushley BR, Dutt S and SA Quazi (eds), *Making Conservation Work: Linking Rural Livelihoods and Protected Areas in Bangladesh*, Dhaka: Nishorgo Program of the Bangladesh Forest Department, 84 – 109.

Ullah, S.A., Tani, M., Tsuchiya, J., Rahman, M.A. and Moriyama, M., 2022. Impact of protected areas and co-management on forest cover: A case study from Teknaf Wildlife Sanctuary,

Bangladesh. *Land Use Policy*, *113*: 105932. https://doi.org/10.1016/j.landusepol.2021.105932

Ullah, Z., Wu, W., Wang, X.H., Pervez, R., Ahmed, A. and Baloch, A., 2022. Improving coastal and marine resources management through a co-management approach: a case study of Pakistan. *Environmental Research Communications*, *4*(2): 025003. https://doi.org/10.1088/2515-7620/ac5088

Vaccaro, I., Beltran, O. and Paquet, P.A., 2013. Political ecology and conservation policies: some theoretical genealogies. *Journal of Political Ecology*, *20*(1): 255-272.

Vedeld, P., Jumane, A., Wapalila, G. and Songorwa, A., 2012. Protected areas, poverty and conflicts: A livelihood case study of Mikumi National Park, Tanzania. *Forest Policy and Economics*, *21*: 20-31.

Verweijen, J. and Marijnen, E., 2018. The counterinsurgency/conservation nexus: guerrilla livelihoods and the dynamics of conflict and violence in the Virunga National Park, Democratic Republic of the Congo. *The Journal of Peasant Studies*, *45*(2): 300-320.

Villaseñor-Derbez, J.C., Faro, C., Wright, M., Martínez, J., Fitzgerald, S., Fulton, S., Mancha-Cisneros, M.D.M., McDonald, G., Micheli, F., Suárez, A. and Torre, J., 2018. A user-friendly tool to evaluate the effectiveness of no-take marine reserves. *PLoS One*, *13*(1): 0191821. https://doi.org/10.1371/journal.pone.0191821

Vincent, K. and Cundill, G., 2021. The evolution of empirical adaptation research in the global South from 2010 to 2020. *Climate and Development*, 14(1): 25-38.

Waldron, A., Besancon, C., Watson, J.E.M., Adams, V.M., Sumaila, U.R., Garnett, S.T., Balmford, A. and Butchart, S.H.M., 2022. The costs of global protected-area expansion (Target 3 of the post-2020 Global Biodiversity Framework) may fall more heavily on lower-income countries. *bioRxiv*: 485429. https://doi.org/10.1101/2022.03.23.485429

Wale, E., Nkoana, M.A. and Mkuna, E., 2022. Climate change-induced livelihood adaptive strategies and perceptions of forest-dependent communities: The case of Inanda, KwaZulu-Natal, South Africa. *Trees, Forests and People*, *8*: 100250. https://doi.org/10.1016/j.tfp.2022.100250

Walker, C., 2005. Land of dreams: land restitution on the eastern shores of Lake St Lucia. *Transformation: Critical Perspectives on Southern Africa*, *59*(1): 1-25.

Ward, C., Stringer, L.C. and Holmes, G., 2018. Protected area co-management and perceived livelihood impacts. *Journal of Environmental Management*, *228*: 1-12.

Watson, J.E., Dudley, N., Segan, D.B. and Hockings, M., 2014. The performance and potential of protected areas. *Nature*, *515*(7525): 67-73.

Watts, S., & Faasen, H., 2009. Community-based conflict resolution strategies for sustainable management of the Tsitsikamma National Park, South Africa. *South African Geographical Journal*, *91*(1): 25-37.

Webb, E. L., Maliao, R. J. and Siar, S. V., 2004. Using local user perceptions to evaluate outcomes of protected area management in the Sagay Marine Reserve, Philippines. *Environmental Conservation*, *31*(2), 138-148.

Weeratunge, N., Béné, C., Siriwardane, R., Charles, A., Johnson, D., Allison, E.H., Nayak, P.K. and Badjeck, M.C., 2014. Small-scale fisheries through the well-being lens. *Fish and Fisheries*, *15*(2): 255-279.

Weigel, J.Y., Morand, P., Mawongwai, T., Noël, J.F. and Tokrishna, R., 2015. Assessing economic effects of a marine protected area on fishing households. A Thai case study. *Fisheries Research*, *161*: 64-76.

Welsh, E., 2002.Dealing with data: Using NVivo in the qualitative data analysis process. In *Forum qualitative sozialforschung/Forum: qualitative social research*. *Qualitative Research 3 (2):* 1-9.

Whitehouse, L.M. and Fowler, M.S., 2018. Meta-analysis reveals that fisheries co-management alters socio-economic outcomes and resource well-being. *Marine Ecology Progress Series*, *600*: 127-140.

Widianingisih, N.N., Theilade, I. and Pouliot, M. 2016. Contribution of Forest restoration in rural livelihoods and household income in Indonesia. *Sustainability,* 8(835): 1–22.

Witter, R. and Satterfield, T., 2019. The ebb and flow of Indigenous rights recognitions in conservation policy. *Development and Change*, *50*(4): 1083-1108.

Woodhouse, E., Bedelian, C., Barnes, P., Cruz-Garcia, G.S., Dawson, N., Gross-Camp, N., Homewood, K., Jones, J.P., Martin, A., Morgera, E. and Schreckenberg, K., 2022. Rethinking entrenched narratives about protected areas and human wellbeing in the Global South. *UCL Open Environment*, *4*: 050. https://doi.org/10.14324%2F111.444%2Fucloe.000050

Wynberg, R. and Hauck, M., 2014. People, power, and the coast: a conceptual framework for understanding and implementing benefit sharing. *Ecology and Society*, *19*(1): 27. http://dx.doi.org/10.5751/ES-06250-190127

Xiao, Y. and Watson, M., 2019. Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, *39*(1): 93-112.

Yates, K.L., Clarke, B. and Thurstan, R.H., 2019. Purpose vs performance: What does marine protected area success look like? *Environmental Science & Policy*, *92*: 76-86.

Yose, P., Thondhlana, G. and Fraser, G., 2023. Conceptualizing the socio-cultural impacts of marine plastic pollution on human well-being–A perspective. *Marine Pollution Bulletin*, *194*: 115285. https://doi.org/10.1016/j.marpolbul.2023.115285

Yousefpour, R., Mayaux, J., Lhoest, S. and Vermeulen, C., 2022. The complexity of the conservation-development nexus in Central African national parks and the perceptions of local populations. *Journal for Nature Conservation*, *66*: 126150. https://doi.org/10.1016/j.jnc.2022.126150

Zafra-Calvo, N. and Geldmann, J., 2020. Protected areas to deliver biodiversity need management effectiveness and equity. *Global Ecology and Conservation*, *22*: 01026. https://doi.org/10.1016/j.gecco.2020.e01026

Zafra-Calvo, N., Garmendia, E., Pascual, U., Palomo, I., Gross-Camp, N., Brockington, D., Cortes-Vazquez, J.A., Coolsaet, B. and Burgess, N.D., 2019. Progress toward equitably managed protected areas in Aichi target 11: a global survey. *BioScience*, *69*(3): 191-197.

Zafra-Calvo, N., Pascual, U., Brockington, D., Coolsaet, B., Cortes-Vazquez, J.A., Gross-Camp, N., Palomo, I. and Burgess, N.D., 2017. Towards an indicator system to assess equitable management in protected areas. *Biological Conservation*, *211*: 134-141.