BALANCING CONSERVATION AND LIVELIHOODS: ARTISANAL FISHERS' PERSPECTIVES ON THE KISITE-MPUNGUTI MARINE PROTECTED AREA, KWALE COUNTY, KENYA.

By

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DECLARATION

I, the undersigned, declare that all information, data, and arguments presented in this paper are mine and have not been taken from any other sources. I also acknowledge that all references used in this thesis have been properly cited according to the provisions of APA 7th edition and that any ideas or words borrowed from other sources are clearly indicated as such. Furthermore, I declare that this paper has not been published or submitted to any other institution for assessment.

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01/06/2024.

ABSTRACT

This thesis explores the socio-economic impacts of the Kisite-Mpunguti Marine Protected Area (KMMPA) on artisanal fishers in Kwale County, Kenya, providing a critical analysis of Marine Protected Areas (MPAs) effects beyond ecological conservation. Using qualitative methods within a political ecology and participatory development theoretical framework, this study investigates the livelihood challenges, perceptions, and coping strategies of artisanal fishers impacted by KMMPA. It highlights the complex interactions between marine conservation efforts and local socio-economic conditions, emphasizing the unintended consequences of conservation policies on these communities. The findings reveal that while KMMPA aims to protect marine biodiversity, it also imposes significant socio-economic hardships on artisanal fishers, such as restricted access to traditional fishing grounds, diminished fish stocks, escalated conflicts with conservation authorities, and limited alternative livelihood opportunities, leading to socio-economic decline and cultural disruption. These challenges are compounded by the inadequate participation of local communities in MPA governance, leading to disenfranchisement and resistance to conservation efforts. The study underscores the need for an integrated conservation approach that balances ecological objectives with the socio-economic needs of local communities, informed by a critical understanding of the power dynamics and governance structures that influence resource management. To address these issues, the thesis proposes several actionable policy recommendations. These include enhancing community engagement in MPA management, establishing compensation mechanisms for fishers adversely affected by access restrictions, and promoting alternative livelihood projects that leverage the skills and resources of the community. By integrating the needs and practices of local communities with conservation efforts, KMMPA can achieve a sustainable balance between biodiversity conservation and the socio-economic consideration of artisanal fishers, ensuring that MPAs effectively serve both ecological and human communities.

ACKNOWLEDGMENT

I extend my deepest gratitude to my supervisor, Prof. Vito Laterza, for his invaluable guidance, support, and patience throughout the thesis writing process. I am particularly thankful for the Zoom meetings he initiated, which provided much-needed direction and support. Prof. Laterza showed great understanding and flexibility, accommodating extensions of our supervision meetings when my work in national security within conflict areas and the disruptions caused by floods affected my schedule. His reassurance of my ability to work autonomously was empowering, and his targeted assistance in critical areas of my thesis was tremendously helpful. His teachings on the theories of political ecology, which form the cornerstone of my research, were indispensable.

I would also like to express my appreciation to my professors and tutors for imparting the knowledge and skills necessary to undertake this research. Their steadfast support and commitment laid the groundwork for my understanding of global development and planning, guiding me on this path of inquiry.

My sincere thanks go to Pamela Lando, Susanne Bere, and Stephen Ndaisi Kioko for sharing their experiences and insights, which greatly supported me during my research. I am equally grateful to Alexandra Mura, a dear friend and fellow master's student, for the countless discussions and the support we shared throughout this academic journey.

Lastly, I am thankful for the support of the Global Development and Planning Department at the University of Agder (UiA), UiA University, and the Norwegian government. The opportunity to study in this inspiring educational environment, provided free of charge by the generosity of Norwegian taxpayers, has been a profound privilege that has significantly shaped my academic and personal development.

DEDICATIONS

This thesis is dedicated to my family—my loving wife, Shyrine, and our children, Kenji, and Keona, who have been constant sources of motivation and support throughout my academic journey. I am immensely grateful for their love and encouragement. I also dedicate this work to my loving mother, Elizabeth Ibrahim, whose unwavering support, and belief in the importance of education have inspired me to pursue my studies to the highest level possible. Her encouragement has been a guiding light in my life.

Additionally, this thesis is dedicated to my colleagues in Defence and National Security, Kenya, especially those who have made the ultimate sacrifice to ensure our nation's safety. I am deeply thankful for their support and for covering my duties, allowing me the time needed to study and conduct this research.

I extend my deepest gratitude and love to all mentioned, from the bottom of my heart. Without their support, this accomplishment would not have been possible.

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LIST OF ABBREVIATIONS AND ACRONYMS

BMU - Beach Management Unit

CBD - Convention on Biological Diversity

COP - Conference of Parties

GOK - Government of Kenya

GPS - Global Positioning System

ICSF - International Collective in Support of Fishworkers

IUCN - International Union for Conservation of Nature

KMMPA - Kisite-Mpunguti Marine Protected Area

KWS - Kenya Wildlife Service

LSMPA - Large-Scale Marine Protected Area

MPA - Marine Protected Area

NACOSTI - National Commission for Science, Technology & Innovation

NSD - Norwegian Centre for Research Data

UNCLOS - United Nations Convention on the Law of the Sea

USD – United States Dollar

UiA - University of Agder

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CHAPTER ONE: INTRODUCTION

1. Background

The fishing and blue economy industry is growing contributor to Kenya's economy earning the Country an estimated 2% in export revenues translating to about 0.5% of the GDP. The industry directly supports about 60,000 artisanal fishers and another 1.2 million individuals indirectly within the fisheries production and supply chain (Kimani et al., 2018). Fishing is profoundly linked with both freshwater and marine habitats, with the latter predominantly involving artisanal fishers who generate 10% of the national fishery production (Kimani et al., 2018). However, the communities have faced significant challenges due to the recent decrease in fish catches and the deterioration of marine habitats. These challenges are due to increased population, elevated poverty levels, restricted access, destructive fishing methods, and overexploitation of marine resources (Kimani et al., 2018; GOK, 2017).

Based on numerous studies, one of the most widely used strategy for mitigating the above challenges and conserving marine ecosystem has been the establishment of marine protected areas (MPAs) (Sunde & Isaacs, 2008; Grip & Blomqvist, 2020). MPAs are protected areas within the ocean, where human activities are strictly managed with the goal of safeguarding marine resources and biodiversity (Grip & Blomqvist, 2020). The Convention on Biological Diversity (CBD) outlines the impact of MPAs on safeguarding the marine biodiversity by promoting sustainable use of resources as well as increasing the MPA coverage of marine and coastal water by 10% of world oceans and coastal regions (CBD, 2004; CBD, 2006). However, research on socio-economic consideration of MPAs on livelihoods and community perceptions of artisanal fishers whose lives are impacted by MPAs are limited compared to studies on ecological and biological impact of MPAs. (ICSF, 2014; Sunde & Isaacs, 2008).

Despite MPAs achievements on ecological front, the International Collective in Support of Fish Workers (ICSF) points out that MPAs are likely to negatively affect the poor and marginalized communities, by excluding them from traditional fishing grounds and involvement in decision-making of MPAs, which their livelihoods depend on (ICSF, 2013). Therefore, it is important to factor livelihood concerns into MPA implementation and management (ICSF, 2013).

This study is seeking to address the knowledge gap by investigating the livelihood challenges, perceptions, and coping strategies of artisanal fishers in the Kisite-Mpunguti Marine Protected Area (KMMPA) in Kwale County, Kenya. Artisanal fishers in this region are faced with various challenges, including reduced access to fishing grounds, limited livelihood options, human and community rights violations, and limited benefits from alternative livelihood options (ICSF, 2014). Fieldwork conducted in February 2024 provided more understanding into the lived experiences and realities of artisanal fishers, showing the complex interactions between marine conservation efforts and artisanal fishers livelihood concerns. Observations and interviews from the field revealed the arti fishers profound connection to their environment and the socio-economic structures of the Shimoni and Mkwiro fishing communities. These interactions proved the necessity of adopting conservation practices that are both ecologically sound and socio-economically just.

This study builds upon previous research commissioned by the ICSF in countries such as Brazil, India, Mexico, South Africa, Tanzania, and Thailand, which have shed light on the implementation of MPAs from the perspective of fishing communities. These studies emphasize the significance of community involvement and equitable sharing of benefits, showcasing examples of conservation practices that are sensitive to livelihoods, such as sustainable-use marine extractive reserves in Brazil. However, research conducted in other countries suggests that fishing communities often face challenges related to livelihood alternatives, access to traditional fishing areas, and infringement of their rights during the MPA establishment process (ICSF, 2014).

1.1. Problem Statement.

Although the fishing industry contributes to Kenya's economy and the livelihood of coastal communities, implementation of Marine Protected Areas (MPAs) like KMMPA, presents a paradox of conservation. Established in 1978 to safeguard marine biodiversity and support sustainable fisheries, KMMPA represents a crucial initiative aimed at preserving coral reef ecosystems and ensuring their sustainability for future generations, and that this cascades to improved livelihoods through other services such as tourism and fishing due to spillover effect However, the practical implications of MPAs on the ground is often a more complex narrative.

While MPAs are celebrated for their ecological and biological benefits, Adams & Hutton (2007) and others have highlighted a critical oversight in the conservation narrative: the underestimation of the socio-economic consequences for artisanal fishing communities**.** Adams & Hutton (2007) posit that there is a mistaken belief that the creation of protected areas including MPAs will directly lead to advancements in human development advocated by some researchers predominantly of natural science background. These researchers, they argue tend to disregard the significance of politics, ethics, culture, and traditions in the context of conservation, viewing these aspects as obstacles to actionable measures (Adams & Hutton 2007). Initiatives that prioritize environmental conservation over socio economic consideration often inadvertently result in the disempowerment, displacement, and socio-economic decline of local communities. These communities, dependent on the marine environment for their livelihoods, find themselves facing restricted access to traditional fishing areas, diminishing income sources, and an eroding socio-cultural fabric (Noe & Kangalawe, 2015; Adams & Hutton, 2007; ICSF, 2013; ICSF, 2014).

Despite the ecological successes of MPA as covered in many studies, there is still few of studies focusing on their socio-economic impacts, particularly on the livelihoods and perceptions of artisanal fishers (ICSF, 2014; Sunde & Isaacs, 2008). This research attempts to bridge this knowledge gap by exploring into the socio-economic dynamics at play within the KMMPA in Kwale County, Kenya. Through a qualitative lens outlining the dynamic livelihood challenges, perception, experiences, and coping strategies of artisanal fishers in the wake of KMMPA, this study shall examine the complex balance between conservation efforts and the socio-economic well-being of artisanal fishing communities. It draws attention to the critical need for integrating livelihood considerations into the structures of MPA programs, ensuring that conservation practices are not only ecologically sound but also socio-economically just.

By situating the study within the broader literature on MPAs and community livelihoods, this research contributes to a holistic understanding of conservation impacts, and MPA management approaches that supports the rights, traditions, and socio-economic concerns of artisanal fishing communities while striving for environmental sustainability. The study will inform policymakers and stakeholders on supporting the integration of marine conservation efforts and artisanal fishing socio–economic considerations, contributing to the broader field of developmental management studies.

1.2. Study Objectives

The primary aim of this research is first to expand academic knowledge by contributing more insights into the socio-economic impacts of Marine Protected Areas (MPAs) on artisanal fishing communities. This will enhance our understanding of how MPAs interact with community livelihoods within the broader field of development management studies. Secondly, the study intends to inform policy and practice by providing evidence-based recommendations to policymakers and stakeholders. These recommendations will focus on integrating marine conservation efforts with the socio-economic considerations of artisanal fishing communities thus ensuring that ecological conservation is balanced with social and economic sustainability.

Thirdly, the study aims to strengthen community involvement by exploring and advocating for increased participatory governance in MPAs. This involves ensuring that local communities are actively involved in the decision-making processes, thereby increasing the effectiveness and equity of marine conservation initiatives. Finally, the research will improve livelihood adaptation strategies by identifying and characterizing the adaptive strategies employed by artisanal fishers in response to the restrictions and opportunities presented by MPAs. This will contribute to a toolkit of best practices that can support other similar communities globally by ensuring that a sustainable coexistence between marine conservation and local community livelihoods exist.

1.3. Research Questions

i. What are the common livelihood challenges faced by artisanal fishers in Kwale County, Kenya?

ii. What specific challenges are artisanal fishers facing due to existence of the KMMPA?

iii. How do artisanal fishers perceive the impacts of the KMMPA on their livelihoods?

iv. What coping strategies both at individual and at the household level have artisanal fishers employed in response to these specific challenges?

1.4. Justification of study

This research study is important for several reasons firstly, it addresses a critical gap in understanding MPAs socio-economic impacts, particularly within the KMMPA in Kwale County, Kenya. This study explores their delicate balance by exploring the detailed interactions between conservation efforts and the livelihoods dependent on marine resources. This exploration is crucial in a global context where conservation often precedes the consideration of local communities livelihoods**.**

This study seeks to inform and amend conservation policies and practices towards more inclusive and sustainable approaches Through the lens of political ecology the research interrogates by the power dynamics and existing governance structures that influence environmental conservation, affecting community livelihoods. It further challenges the status quo by advocating for a more inclusive approach that integrates the fishing communities in formulating and implementing conservation policies. This approach harnesses the communities indigenous knowledge and practices, resulting in more practical and equitable policies and limiting the communities feelings of disenfranchisement. The study demonstrates the linkage between environmental conservation, social equity and economic development, by outlining empirical evidence that highlights the importance of adopting holistic strategies in conservation efforts that also considers the ecological integrity and human dignity. In doing so, it offers a compelling argument to review MPA policies to ensure they not only focus on biodiversity protection but also the socio-economic development of local communities.

Lastly, this research study enriches the academic field of political ecology by applying its theoretical understanding to the practical challenges facing artisanal fishing communities in the face of conservation initiatives. The study also embodies the principles of participatory development by highlighting the significance of engaging local communities as active participants in conservation efforts, rather than passive subjects of top-down interventions.

1.5. Scope of the study

This study aims to explore the socio-economic impacts of the KMMPA on artisanal fisher communities from Shimoni mainland and Mkwiro village in Wasini Island both in Kwale County,

Kenya. The study explored into the interactions between marine conservation initiative and the livelihood dynamics, as well as how the artisanal fishers perceive and respond to the changes introduced by KMMPA since its establishment. Geographically, the study is nested in the KMMPA within Kwale County in Kenya. This involves the following protected regions: Kisite Marine National Park, Mpunguti Marine National Reserve, and the Shimoni and Mkwiro fishing communities. The study centres on artisanal fishers (both men and women) within the region; this includes individuals and households that engage in artisanal fishing and are directly affected by the KMMPA. The research interviews and feedback were collected in February 2024, and therefor is a snapshot of the situation as at that period.

1.6. Limitation of the Study

The study is specific to the KMMPA in Kwale County, which may not represent all MPAs in Kenya or globally. The study outcomes do not reflect other MPAs or fishing communities due to differences in socio-economic and ecological contexts. While the study focuses on artisanal fishers, it excludes other stakeholders such as tourism operators, conservation NGOs, and government agencies in the marine conservation space. While these perspectives are very important, the study heavily relies on the experiences and opinions of artisanal fishers to address the research objectives directly. Given the dynamic nature of marine conservation and fishing practices, the research findings reflect the situation as observed; participants were interviewed and reported during the fieldwork conducted in February 2024 and might not account for past or future changes in the MPAs or fishing communities.

1.7. Geographical Area of Study

The Kisite-Mpunguti Marine Protected Area (KMMPA), the area in which this research was conducted, is situated along the southern coast of Kenya near the Tanzanian border. This marine conservation area is geographically located within Shimoni Sub–County in Kwale County, one of Kenya's coastal counties. KMMPA extends approximately from 4.5° South to 4.9° South in latitude and from 39.3° East to 39.7° East in longitude. The history of KMMPA is tied to its importance of preserving marine ecosystems. A Marine National Park was initially established at Kisite in 1973. In response to local disputes arising from the loss of fishing grounds caused by the strict regulations of the National Park, the park boundaries were revised and expanded in 1976. In 1978, the adjacent

Mpunguti area was established as a Marine National Reserve. This change allowed for some traditional fishing methods to continue in Mpunguti while imposing stricter regulations in Kisite. The KMMPA encompassing both Kisite Marine National Park and Mpunguti Marine National Reserve, was officially designated in 1978 under Legal Notice No. 216. (Emerton & Tessema, 2001; Perez et al., 2015; KWS, 2014).

The Kisite Marine National Park is recognized as Kenya's largest marine park; it stretches 28 square kilometres wide. In contrast, Mpunguti Marine National Reserve is the nation's smallest marine reserve, measuring 11 square kilometres. KMMPA was established to safeguard the scenic islands and special habitats for a diverse array of marine animals and breeding migratory birds (KWS, 2014). The KMMPA area boasts a diverse marine ecosystem, including four significant coral islands: Kisite, Mako Kokwe, Mpunguti ya Juu, and Mpunguti ya Chini, serving as essential habitats for various marine species (Watson & Ormond, 1994). The Kenya Wildlife Service (KWS), a governmental agency tasked with overseeing Kenya's protected regions, administers KMMPA. Operations for KMMPA are coordinated from a mainland office in Shimoni, with an operational base on the island of Mpunguti ya Chini for conducting patrols. While the park generates revenue, all funds are forwarded to the KWS Central Headquarters in Nairobi, which is responsible for budgeting and financial allocations to KMMPA (Muthiga, 2009; Emerton & Tessema, 2001).

The surrounding settlements and villages near the KMMPA include Shimoni, Wasini Island, Mkwiro, and Kibuyuni. Shimoni is a coastal town located on the mainland, serving as the entrance to the KMMPA. Wasini Island, situated near the KMMPA, is home to the Wasini community village on the west side, whose livelihoods primarily rely on fishing and tourism activities. Mkwiro community village on the east side, a small fishing village on Wasini Island, is very close to the KMMPA. Residents in Shimoni and Wasini areas are predominantly part of the Digo ethnic community, with the WaVumba ethnic community in Wasini village and the Shiraz ethnic community in Mkwiro village. Shimoni being a cosmopolitan town and has also attracted people from other parts of Kenya. These communities have historically relied on fishing, tourism, and agriculture as their primary sources of income and sustenance (Muthiga, 2009). However, for this study, it was specifically conducted in Shimoni mainland and in Mkwiro village of Wasini Island.

Fishing has long been the main occupation of these coastal communities, constituting approximately 50% of their livelihoods (Muthiga, 2009). The proximity of these communities to the marine ecosystems of KMMPA has made fishing a fundamental economic activity providing sustenance and income for generations. Kibuyuni households stand out with over 82% of their livelihoods dependent on this sector (Muthiga, 2009). Tourism-related activities have a remarkable influence on the local socio-economy, accounting for 12% of the livelihoods in these communities In the Wasini, which is adjacent to KMMPA, a 30% of the community is dependent on tourism-related activities (Muthiga, 2009). This emphasizes the economic significance of tourism for communities closely linked to the marine protected area. On the other hand, agriculture plays a role in the local economy, albeit with a variable contribution to incomes and is not as prominent as fishing and tourism (Muthiga, 2009).

The rationale behind selecting KMMPA in Kwale County is due to its illustrative significance in the discourse on biodiversity conservation and local community livelihoods. KMMPA draws a nexus between marine conservation initiatives and local artisanal fishers traditional practices and livelihoods. This area is a biodiverse marine ecosystem and a socio-economic lifeline for the surrounding local communities, whose histories, cultures, and daily sources of livelihoods are intricately tied to the Indian Ocean. The fieldwork in February 2024 captured the lived experiences and realities of artisanal fishers impacted by KMMPA's conservation practices, profoundly broadening the understanding the complex interactions between marine conservation efforts and artisanal fishing.

Figure 1: Map showing the location of Africa, Source (Geology 2024)

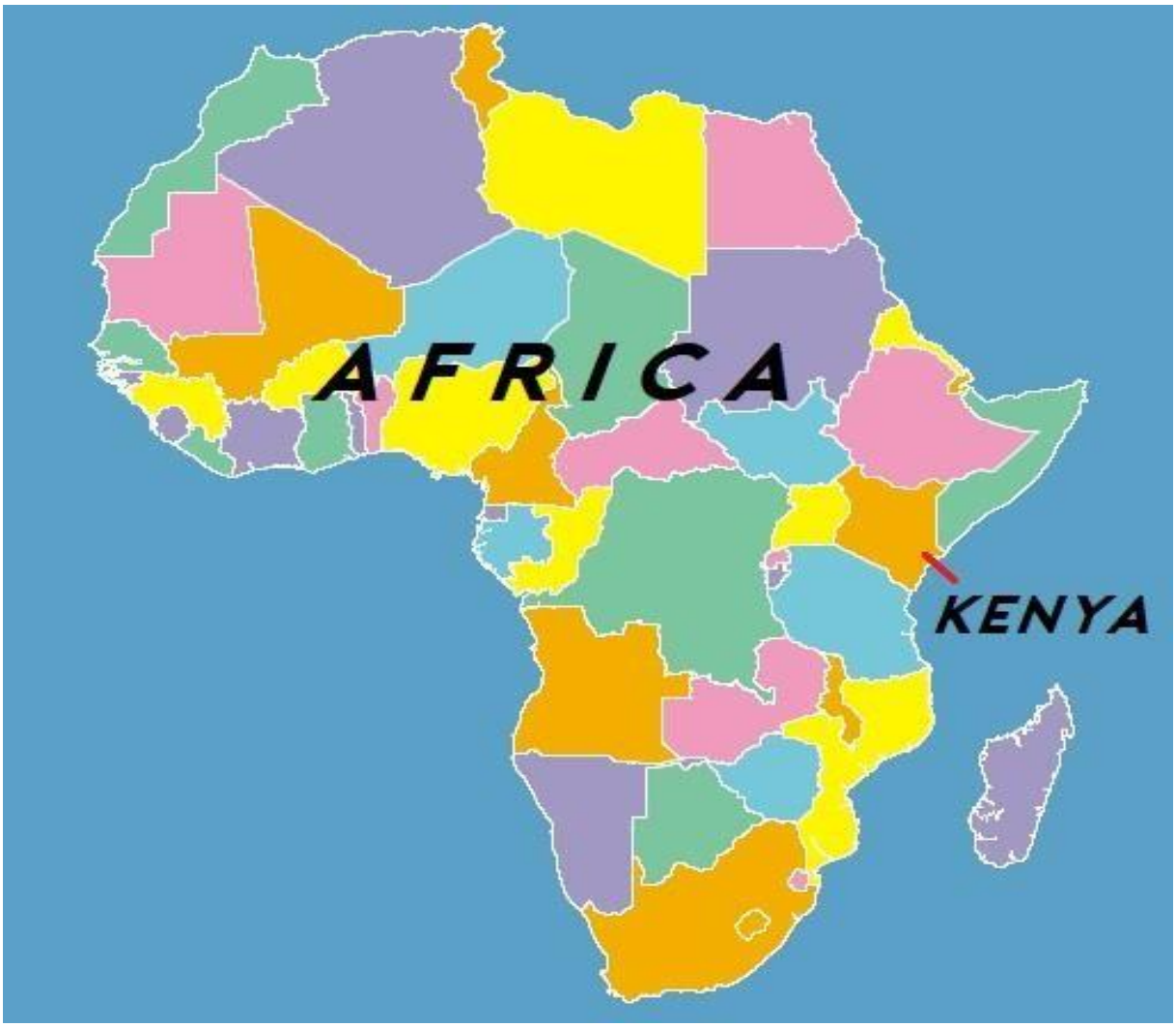

Figure 2: A map of Kenya in Africa, Source, Map of Kenya (2024)

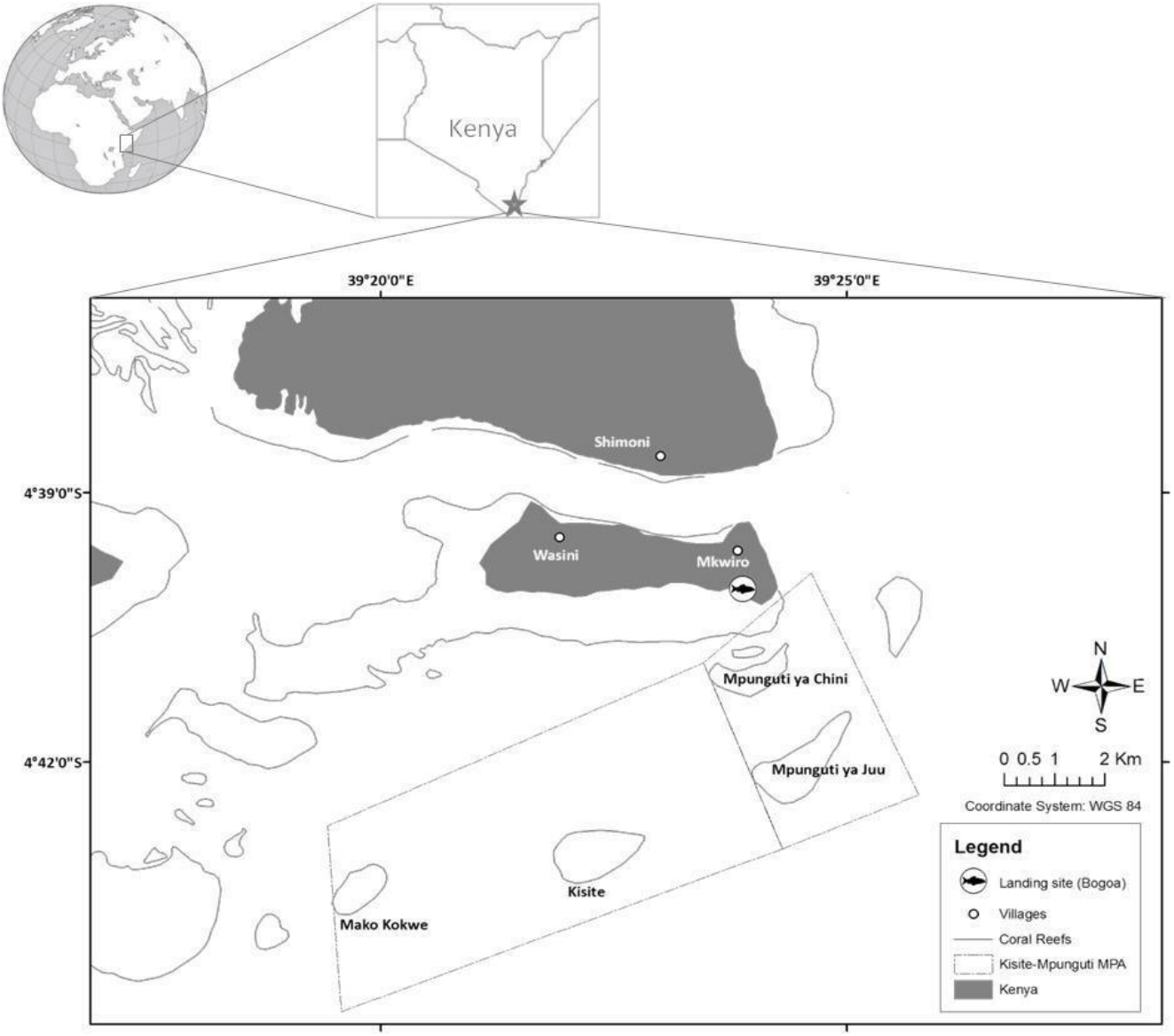

Figure 3: Map of study Area showing the location of KMMPA

Source: Sergi Pérez Jorge & Zeno Wijtten, Global Vision International. "Kisite-Mpunguti Marine Protected Area (KMMPA)." *CBD Technical Series*, no. 84, Convention on Biological Diversity. Accessed on [06 April 2024]. Available at https://www.cbd.int/doc/meetings/mar/ebsa-sio-01/other/ebsa-sio-01-unesco-03-en.pdf

1.8. Methodology in Brief.

This study employs a qualitative research methodology due to its strength in exploring contextualized, dynamic, and complex phenomena such as individual experiences and perspectives. By this methodology, I indulged in first-hand accounts of the experience and realities of artisanal fishers' and their interaction with KMMPA. I conducted face-to-face interviews with fishers from the Mkwiro and Shimoni areas on the impact of the KMMPA on their daily lives. Due to the sensitive nature of the conversation on livelihood, the study offered an empathetic platform for the individuals to be candid and therefore I was able to capture the individuals fishers perspectives in depth. Interview participants were purposively sampled with a snowball approach to be able to reach the other informants who meet the selection criteria in the closely knitted fishing community. Additionally, I made field observations to enrich the data collected through semi – structured interviews. Data was coded and analysed for emerging themes and patterns in data using thematic analysis. This method allowed for data organisation into themes corresponding to the study objectives.

1.9. Thesis Structure

The thesis is organized into further five subsequent chapters with each focusing on different aspects of the study:

- **Literature Review/Theoretical Framework**: This section explores existing literature related to the topic and theoretical foundations supporting the study. Its goal is to establish the study context and its significance within the existing body of knowledge. In this thesis it discusses the theoretical foundation of MPAs and reviews existing literature on their ecological and socio-economic impacts thus highlighting gaps that the study aims to address.

- **Methodology:** Here, the approach taken to meet the study's goals is described, explaining the steps and procedures followed during the research**.** In this study it describes the qualitative research methods used, including participant selection and data collection techniques such as semi-structured interviews and participant observation. This chapter justifies the methodologies chosen and discusses the ethical considerations of the research.

- **Empirical Findings:** Shows the organization and presentation of the data collected from the field. Presents the primary data collected from fieldwork, detailing the empirical insights into the livelihood challenges, perceptions, and coping strategies of artisanal fishers in the KMMPA.

- **Analysis of Emerging Themes:** This part interprets and integrates the empirical findings with the theoretical framework and literature review, analysing how the data supports, contradicts, or extends existing knowledge. This chapter discusses the implications of findings for conservation practices and policymaking.

- **Conclusion:** Summarizes the study outlining its main findings and discussing the broader implications for marine conservation and community livelihoods. It also outlines recommendations for policymakers and suggests areas for further research.

CHAPTER TWO. LITERATURE REVIEW

2. Introduction

This chapter focused on an in-depth examination and evaluation of extensive published literature surrounding Marine Protected Areas (MPAs) and their relation to global conservation strategies and local community dynamics. The sources include journal articles, previous research papers, textbooks, conference proceedings, and books. The literature review is structured into different subtopics covering empirical literature review and a theoretical framework.

2.1. Marine Protected Areas and Global Conservation Efforts

Marine Protected Areas (MPAs) serve as vital tools in global conservation efforts, designating coastal or marine regions for specific activity regulation to protect natural resources, biodiversity, and cultural features (Edgar et al., 2007; Grip & Blomqvist, 2020). These areas have various names and purposes, such as closed zones, no-take reserves, multiple-use areas, parks, reserves, or sanctuaries. However, their common goal is safeguarding marine and coastal environments (Jentoft et al., 2007). MPAs have diverse governance structures ranging from centralized to devolved models, such as community-based ones. The former are top-down initiated with the latter being bottom-up initiated (Jentoft et al., 2007). The objectives of MPAs is aimed at protecting marine ecosystems, mitigating overfishing by fishing communities and overall promotion of sustainable fishing practices (O'Leary et al., 2018). Subsequently, MPAs support local livelihoods and contribute to more sustainable local economies. They also carry cultural significance in safeguarding the traditions of coastal communities (O'Leary et al., 2018)

The International Union for Conservation of Nature (IUCN) initiated the review of the definition of MPA that originally defined all protected areas, whether on land or in the sea. Passed during the IUCN's General Assembly in 1988, the current definition reads; "Any area of intertidal or subtidal terrain, along with the water above it and all the associated plant and animal life, as well as its historical and cultural features, which has been legally set aside or protected by other effective means to safeguard part or all of the enclosed environment" (Laffoley et al., 2019, pp:554). In 2018 the global tally of MPAs was approximately 13000 with an average span of 2.5 square kilometres (km^2) (O'Leary et al., 2018). Subsequently a growing interest towards large-

scale MPAs (LSMPAs) encompassing 100,000 km² or more has been observed (O'Leary et al., 2018).

MPAs role extends beyond marine based species preservation towards the overall well-being of the oceans and marine spaces. The ocean, often described as the Earth's blue heart, is a life source. It regulates our climate, absorbs carbon dioxide, and generates oxygen through tiny phytoplankton. It has absorbed excess carbon dioxide and heat from human activities, thus helping mitigate the effects of climate change (Laffoley et al., 2019). This background emphasizes the growing recognition that much like we protect terrestrial ecosystems, safeguarding the ocean is very important. Providing room for the ocean to recover and thrive is akin to an insurance policy for our planet. However, Laffoley et al. (2019) argue that it is crucial to acknowledge that this localized approach may not be sufficient for species that roam great distances or for the sustainable management of the open ocean, which extends beyond the boundaries of specific areas. Hence, they propose a more comprehensive application of MPA principles that transcends the jurisdiction of individual nations, collectively encompassing the entire global ocean. From this global perspective, these scholars assert that MPAs should not be isolated conservation pockets but instead form a network that collaboratively safeguards marine habitats and species globally (Laffoley et al., 2019).

The MPAs have undergone significant changes in marine and coastal conservation. These shifts have been influenced by historical events and international agreements and ambitions. Originally, MPAs focused on safeguarding endangered species as well as preserving attractive areas. However, this approach evolved in 1935 when Fort Jefferson National Monument in Florida became the world's first MPA. It adopted a more comprehensive perspective that elaborated on the importance of protecting marine and coastal habitats. Moreover, global efforts such as the World Parks Congress in 1962 and the 1982 United Nations Convention on the Law of the Sea (UNCLOS) which mandated countries to safeguard and preserve their marine environment, played a critical role in promoting the global push for MPAs (Humphreys & Clark, 2020; Laffoley et al., 2019).

Through international conventions and resolutions such as the 17th Assembly of IUCN in 1987, and the UN World Summit on Sustainable Development in 2002, the UN targets established during

the tenth meeting of the CBD Conference of Parties (COP 10), and the World Parks Congress in 2014, the global community has joined efforts to come up with various conservation goals. One of goal was to designate between 10% to 30% of the world's oceans as MPAs (Christie et al., 2017). The CBD established in 1992, has been in forefront in advocating for these efforts but the achievement of these conservation goals has proven futile. The initial aim, by the CBD set in 2004 and later in 2011, was to conserve at least 10% of the world's marine ecological regions by 2012. However, this goal underwent revisions. Aichi Target 11 expanded the objective to not only encompass terrestrial regions but also coastal and marine areas. The aspiration was to achieve 17% terrestrial and 10% coastal and marine conservation by 2020 (CBD, 2011). Laffoley et al. (2019) noted that the expansion of MPAs, ranging from large-scale initiatives to smaller community-supported projects, has brought the 10% marine target closer to realization, with around 7.26% of the ocean now protected in MPAs. This progress shows that achieving MPA targets remains a complex and debated endeavour.

While MPAs are increasingly utilized globally as a tool for conservation, studies such as Edgar et al. (2007) and Grip & Blomqvist (2020) often present a perfect view of their effectiveness. Contrarily, Jentoft et al (2007) provide a specific discussion on the diverse governance models of MPAs, indicating varying degrees of success and challenges which depicts a significant gap in literature regarding the direct correlation between governance types and conservation outcomes. This disparity calls for a more rigorous examination of how governance models influence ecological and socio-economic outcomes in MPAs. Additionally, historical analyses by Laffoley et al. (2019) discuss the evolution of MPA objectives and yet there is scant discussion on the evolving challenges that MPAs face under changing global climatic conditions. This oversight potentially suggests a gap in historical contextualization that could inform more adaptive management strategies in response to global environmental changes.

2.2. Ecological Outcomes of MPAs: Biodiversity, Fish Stocks, and Habitat Recovery.

MPAs play an important role in conserving marine biodiversity, with significant contributions to the enhancement of coral cover and the recovery of fish populations. According to Strain et al. (2018), MPAs that are well-enforced, have no-take zones, and are established for over ten years show significant increases in coral cover compared to fished sites. This increase is largely

attributed to the growth of massive coral formations which are particularly resilient to environmental stressors. Based on Strain et al (2018) findings the ecological success, originate from the fact that the protection afforded by MPAs can lead to a direct increase in coral biodiversity by reducing human disturbances such as fishing and indirectly leading to resurgence of herbivorous fish populations. These fish play a vital role in controlling algal populations that compete with corals, thereby supporting healthier reef ecosystems. The study emphasizes that the effectiveness of MPAs in promoting coral cover is most pronounced in areas that combine several key management features which include strict enforcement, no-take policies, and isolation from human disturbances hence providing optimal conditions for coral species to thrive, particularly massive coral formations that are vital for maintaining ecosystem functions and services. These factors contribute to the successful recovery and maintenance of coral ecosystems by providing a refuge from anthropogenic impacts and allowing natural ecological processes to restore and sustain the coral reef biodiversity (Strain et al., 2018)

Complementing Strain et al. (2018) findings, Edgar et al. (2014) demonstrate that MPAs designed with key features such as no-take zones, strict enforcement, substantial age of over 10 years, ample size, and isolation by deep waters or sand, leads to notable ecological successes. These areas exhibit significant increases in fish biomass and species richness compared to fished sites, with some showing up to 5 times more large fish biomass and 14 times more predatory fish like shark biomass. This indicates not only a recovery in fish populations but also an overall enhancement in marine ecosystem health. However, the study also warns that merely increasing the number of MPAs without careful attention to these key features does not guarantee effective conservation outcomes. The ecological success stories from these MPAs revels their importance in global conservation efforts and the need for strategic design and robust management to realize their full potential. This shows the necessity for a global network of well-managed MPAs to safeguard marine ecosystems effectively (Edgar et al., 2014).

Drawing from both the findings of Strain et al. (2018) and Edgar et al. (2014) it becomes more clearer that while MPAs offer measurable ecological benefits such as enhanced biodiversity and fish biomass, these gains often overshadow the complex socio-economic dimensions that are equally vital for sustainable conservation outcomes. This study critically examines this dichotomy, emphasizing that the true success of MPAs should not only be measured by ecological metrics but

also by how well they integrate and address socio-economic factors. However, the prevalent models have ignored certain impacts on local artisanal fishers whose livelihood and cultural practices are integrated with the marine environment. Hence, this study favours a balanced approach where conservation measures should be harmonized with communities, socio-economic dynamics, ensuring the MPAs are not a burden to communities they are meant to serve. By aligning ecological objectives with socio-economic considerations, MPAs can be designed to conserve marine ecosystem as well as enhance the resilience and well-being of the affected local communities. This will foster more inclusive and effective conservation results.

2.3. Global and Local Perspectives on MPAs

Analysing MPAs from both global and regional angles is essential in understanding the multitude impact of conservation efforts on marine biodiversity, fisheries management, and local communities. MPAs serve as an anchor for marine conservation measures internationally as it focuses on safeguarding biodiversity, protecting fish population, and supporting the marine ecosystem (Lubchenco & Grorud-Colvert, 2015). Additionally, international network of MPAs is essential in attaining these goals as they are guided by the Convention on Biological Diversity's Aichi goals, which focused on protecting 10% of marine and coastal areas by 2020 (CBD, 2010).

However, the post-2020 global biodiversity framework focuses on safeguarding 30% of the world’s land and ocean areas by 2030 (CBD, 2021). To attain this goal, it is essential that MPAs also put into consideration the importance of maintaining the socio-economic dynamics of the affected communities. Further, the World Parks Congress (2014) emphasized the need for integrating socio-economic needs of local communities in conservation strategies, noting that MPAs need to also assure the well-being of communities who depend on these ecosystems (World Parks Congress, 2014).

From a regional perspective, the implementation, and outcomes of MPAs can vary significantly since its influenced by the local ecological conditions, socio-economic dynamics and governance structures. Regional studies have highlighted the need for adapting MPA measures that incorporate management of local context to enhance their effectiveness and ensure equal distribution of conservation benefits and burden. (Ban et al., 2017) and Govan et al. (2009), provide an exhaustive review of community conserved areas in Melanesia and Polynesia, emphasizing the

effectiveness of these areas in safeguarding marine resources while supporting the socio-economic needs of the local communities. These community based MPAs in the Pacific Islands have demonstrated the importance of assimilation of indigenous knowledge and practices can improve resource management and the livelihoods of local community. This approach ensures the importance of adapting MPA design and management to align with local contexts, promoting the equitable distribution of benefits and effectively addressing the unique conservation and livelihood challenges specific to the region. (Govan et al., 2009).

Moreover, exploring MPAs regionally allows for the assessment of specific socio-economic impacts on local communities particularly on artisanal fishers whose livelihoods are closely linked with marine resources. Studies in regions such as West Africa have shown the complex relationship between MPAs and artisanal fishing communities, highlighting the need for inclusive management approaches that balance conservation goals with socio-economic consideration of the local communities. Diop & Scholte (2016), a compelling case study illustrate the complexity of integrating customary laws and local governance structures with the objectives of MPAs, revealing cases where conservation efforts can sometimes inadvertently marginalize the very communities they intend to support. The case of Senegal, detailed by Diop and Scholte (2016) shows how MPAs while successful in achieving ecological objectives such as biodiversity conservation and habitat protection, may also lead to unintended consequences for local fishing communities. These include restricted access to vital fishing areas, displacement, and conflicts over resource use. The study calls for a more inclusive implementation approach that will involve local communities in decision making and governance of MPAs (Diop & Scholte 2016). This approach emphasizes the need for conservation strategies that are socially just which will ensure the benefits of conservation efforts are widely shared and do not negatively affect the local community.

A study conducted in Kenya and Western Indian Ocean by Harker et al. (2022), it highlighted the challenges associated with the implementation of MPAs in Watamu area in Kilifi County, Kenya. Some of the key challenges included limited interaction and communication between MPA managers and local communities, leadership challenges and the presence of social conflicts. The study will also examine the intricacies of social conflicts and their impact on resource users, with focus on artisanal fishers in the context of MPAs. One significant finding study of Harker et al. (2022) is the unequal distribution of benefits derived from MPAs across coastal communities.

Additionally, the research identifies disparities in increased donor support, which tends to favour specific groups within these communities (Harker et al., 2022).

Therefore, a comprehensive understanding of MPAs requires a double approach that considers both the global framework of marine conservation and the localized specificities of MPA management and impacts. According to Edgar et al. (2014), global studies have proven that MPAs can substantially increase marine biodiversity and biomass when they are well-managed and fully protected. However, these ecological benefits can be realized if they are matched with socio-economic benefits for local communities so as to gain their support and participation in conservation efforts (Edgar et al., 2014). As highlighted by Ban et al. (2017), there is need for twofold approach, particularly, the role of governance in determining the success of MPAs. They argue that effective governance systems that incorporate local knowledge and stakeholder engagement are crucial for aligning global conservation efforts with community needs and aspirations. These systems facilitate the equitable distribution of conservation benefits hence enhancing the socio-economic resilience of local communities while achieving global conservation objectives (Ban et al., 2017). This double perspective is important for informing policy and practice ensuring that MPAs contribute to global conservation goals while fostering sustainable livelihoods and social equity at the regional and local levels.

2.4. Governance Models and Community Involvement in MPA Success.

Governance in MPAs is an important factor determining their success or failure. The effectiveness of MPAs in achieving conservation goals and socio-economic benefits largely depends on the governance model adopted ranging from strictly top-down approaches mandated by national governments to community-led approaches that involve local stakeholders. Each model offers unique benefits and faces distinct challenges (Ban et al., 2017). Governance in MPAs is not merely about regulatory frameworks but also includes the mechanisms by which local communities, stakeholders, and authorities interact to manage and conserve marine resources. These interactions have proven very important for collective management and conservation of marine resources (Jones et al., 2013). In many successful MPAs governance goes beyond traditional enforcement and integrates collaborative processes that engage local communities in the decision-making process. This inclusive approach can help align conservation objectives with the social and

economic needs of local communities, thereby enhancing compliance and fostering stewardship among those who depend most directly on the marine resources (Gutiérrez et al., 2011).

Top-down governance models are often characterized by their hierarchical decision-making processes where policies and regulations are formulated at the national or regional level without substantial input from local communities whose lives are directly tied to marine resources. This approach can lead to swift implementation and consistent enforcement across large areas, which benefits large-scale conservation targets. Notably, some of the challenges facing the model are likely to result in lack of engagement and compliance by the local community, leading to resistance and ineffective management (Ban et al., 2017; Christie, 2004; Gutiérrez et al., 2011). On the other hand, community led governance models emphasize the need for local participation as well as empowerment. These models assimilate traditional knowledge and practices with MPA management, promoting a sense of ownership and responsibility among the local community. Additionally, community based MPAs have resulted in greater ecological success and community compliance due to involvement of those affected by the conservation efforts (Govan et al., 2008; Cinner et al., 2012; Christie et al., 2017).

Compliance is usually effective in MPAs where local communities are involved in the management process, as it promotes a sense of ownership and responsibility towards protected areas (Gutiérrez et al., 2011). On the other hand, top-down governance models often face challenges in enforcement due to a lack of local engagement which can be mitigated in community-led models that utilize local networks for more effective enforcement mechanisms. (Christie et al., 2017). Conversely, MPAs that adapt the top-down approach tend to ignore the interests and livelihoods of locals, hence experience resistance and conflicts, which results in non-compliance and undermining the conservation goals (Magotra et al., 2020; Ban et al., 2019).

Adaptability of governance model in changing the ecological and social conditions, combines both top-down and community led approaches, has been suggested as a promising way forward in implementing conservation measures. This approach, as espoused, allows for flexibility in management practices and policy adjustments based on continuous ecological monitoring and community feedback aiming to balance ecological goals with socioeconomic realities of local communities, thereby ensuring that conservation efforts align with both ecological objectives and

socio-economic needs (Armitage et al., 2007). More studies reinforce the importance of this adaptive approach. Adaptive governance allows for learning and integrating strategies responsive to societal changes. This strength allows them to manage complex social-ecological systems Chaffin et al. (2014). They also facilitate incorporating diverse knowledge systems, including scientific, local, and indigenous knowledge, which are critical for the holistic management of marine resources (Berkers, 2017). This inclusivity boosts the legitimacy and acceptance among local communities fostering stronger compliance and stewardship. Therefore, an effective governance model should be tailored to suit specific cultural, ecological, and socio-economic contexts of the MPA. This tailored approach can result in long-term sustainability of MPAs while balancing the socio-economic needs of the local communities.

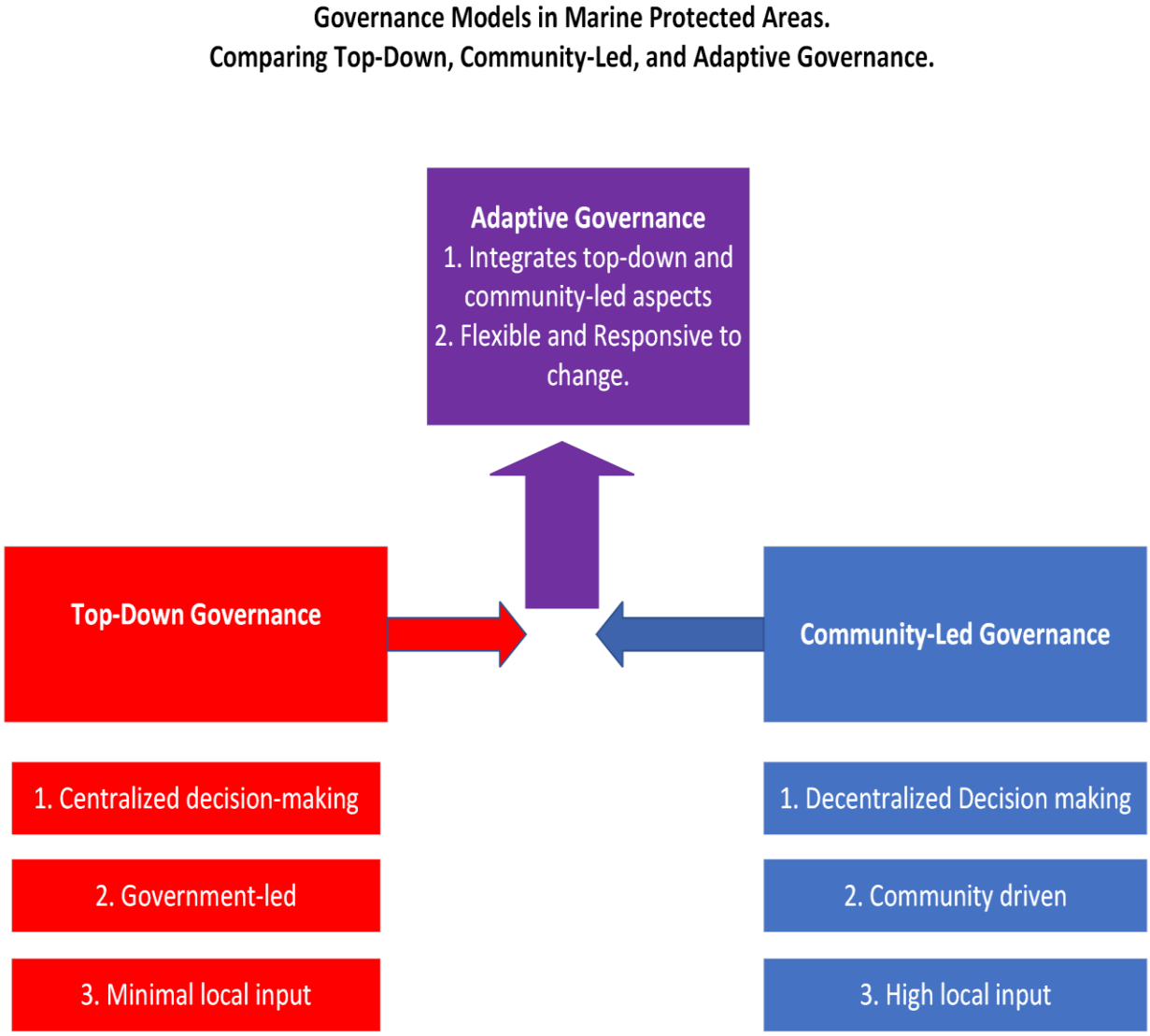

Figure 4: Flow Chart comparing governance models.

Flow Chart (Edger, 2024)

2.5. Importance of Socio-economic Factors in MPA Success.

Marine Protected Areas (MPAs) are vital biodiversity, conservation tools, and essential ecosystem services with a global commitment to designate substantial marine regions as MPAs (Ban et al., 2019). While we understand how effective MPAs are for ecological purposes, their socio-economic aspects have often been overlooked. This is mainly because conservation practices have typically prioritized scientific ecological knowledge over socio-economic dimensions (Christie et al., 2017; Ban et al., 2019). It is important to understand the impact of MPAs on the livelihoods of fishing communities as it is essential for the success of conservation goals (Ban et al., 2019). Although, ecological approach of MPAs has always taken precedence, incorporation of socio-economic approach is increasingly being recognized as imperative (Christie et al., 2017). The success of conservation efforts, such as MPAs, centres on understanding these social, economic, and cultural considerations, and overlooking them can lead to significant slowdowns (Christie et al., 2017). Balancing conservation efforts and livelihood concerns of coastal communities is essential in achieving sustainable management of marine resources.

There is a direct relation between the well-being of the affected communities and the success of conservation efforts (Ban et al., 2019). MPAs are more likely to gain the support of local communities when they positively impact on their well-being. This support, in turn, cultivates better compliance with MPA rules and regulations (Ban et al., 2019). According to Magotra et al., (2020), whereas most MPAs are typically established based on government regulations, their success depends on whether they are accepted and supported by local stakeholders, particularly artisanal fishers. Therefore, integrating the social, economic, and cultural considerations into creation of MPAs is imperative for improved management and sustainable conservation efforts. Additionally, it's important to understand the underlying power dynamics at play such as international organizations, NGOs, the private sector, national governments, political elites, and local communities, to influence the creation and management of MPAs, is usually guided by vested interests like conservation, fisheries, geopolitics, sovereignty, etc. (Christie et al., 2017).

Establishing MPAs involves a complicated social process, with interests from various stakeholders like resource users, local communities, government authorities, and international agencies

(Pomeroy et al., 2007). These stakeholders often differ in priorities and expectations regarding the purpose and management of MPAs. Local communities perceive the importance of MPAs in securing their livelihoods and cultural heritage, whereas else government authorities focus on compliance and enforcement, while international agencies consider global conservation objectives. Balancing the ecological objectives such as preserving marine resources, biodiversity, and habitat with socio-economic goals like enhancing food security, livelihoods and equitable distribution benefits, as well as governance objectives that focuses on management structures and stakeholder participation is often difficult (Pomeroy et al., 2007).

On the other hand, MPAs ecological and socio-economic objectives sometimes conflict, resulting in controversy and subsequent failure of MPAs (Pomeroy et al., 2007). Notably, studies indicate that social factors primarily determine MPAs success or failure rather than biological or physical variables, emphasizing the need for a holistic approach integrates both social and ecological dimensions (Pomeroy et al., 2007). Early engagement of stakeholders in the planning stages of MPAs is critical. This involvement should encompass their expectations and perceptions regarding the MPA's performance, as well as the establishment of clear goals and targets. According to Sarker et al., (2019), early stakeholder participation can lead to several benefits, including reducing conflicts, improving MPA effectiveness, measuring the success of management efforts, and gaining support and acceptance from stakeholders. Increased emphasis on ecological dimensions of MPAs without socio–economic considerations may entail adverse consequences for the social well-being of vulnerable communities in many ways, including dispossession of coastal communities from traditional waters and restricted access rights, causing disruption on their food security, livelihoods, health, and culture (Strand et al., 2022; Hill et al., 2016; Bennett & Dearden, 2014;).

MPAs, although effective in marine species and habitat conservation (Laffoley et al., 2019), may lead to social and environmental injustices if their implementation neglects the social consequences and the developmental needs of local communities (Peer et al., 2022). South African MPAs widely recognized for their ecological achievements, offer a compelling case study illustrating the potential disconnect between ecological successes and socio-economic challenges. Research by Peer et, al., (2022) highlights that the MPA conservation model in South Africa has led to conflicts, dispossessions, and the exclusion of local communities, ignoring Indigenous

stewardship and local knowledge. Their conservation approach is characterized by a top-down strategy imposed by external government authorities, which primarily relies on methods involving barriers and fines (Strand et al., 2022). For instance, the case of the Karbonkelberg Reserve, located within the Table Mountain National Park, directly adjacent to the Hangberg fishing community, exemplifies this challenge. The historical context, exacerbated by the Apartheid Group Areas Act of 1950, has resulted in the exclusion of the Hangberg community from their traditional fishing grounds. Despite commercial fishing vessels being allowed in the area annually, the Hangberg community remains marginalized, and their fishing activities are conducted illegally due to limited monitoring and enforcement. Rather than engaging with the Hangberg community, the response has been an increase in policing, fines, and equipment confiscation which further perpetuates social and environmental injustices (Sowman et al., 2011; Peer et al., 2022).

In the context of Kenya and the Western Indian Ocean, a study conducted by Harker et al. (2022) espouses the challenges associated with the implementation of Watamu MPA, in Kilifi County of Kenya. The research highlights several key issues, including limited interaction and communication between MPA managers and local communities, leadership challenges, and the presence of social conflicts. The study further examines the complexities of social conflicts and their impact on resource users, with a particular focus on artisanal fishers in the context of MPAs. One significant finding study of Harker et al. (2022) is the unequal distribution of benefits derived from MPAs across coastal communities. Additionally, the research identifies disparities in increased donor support, which tends to favor specific groups within these communities (Harker et al., 2022). It is important to note that similar challenges have been observed in the Philippines, where the tourism sector in some MPAs marginalized artisanal fisheries in terms of access and control. This jeopardized the economic and socio-cultural viability of fishing-dependent communities, as documented by Oracion et al. (2005). These examples collectively emphasize the need for a more balanced and inclusive approach in MPA management that considers both ecological and socio-economic dimensions to ensure the well-being and livelihoods of coastal communities are not compromised. It is also important noting that conflicts surrounding the existence of MPAs are not similar, and the nature of these conflicts varies per case study.

2.5.1. Socio – economic impacts of MPAs on Artisanal Fishing Community

Artisanal fishers are individuals or small-scale fishing communities involved in small-scale fishing activities by using small boats, canoes, and ancient fishing method. These fishers are an integral part of the coastal communities, as they contribute to the local economy (Pauly & Zeller, 2016). This study will adapt the definition developed by the Food and Agriculture Organization (FAO) in 2012, to describe small-scale and artisanal fishing as cited in Kolding et al., (2014). It reads "fishing households (as opposed to commercial companies), using relatively small amounts of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore." (Kolding et al., 2014 pp:2)

Although artisanal fishers make up about 90% of the world's fishers' population, however, they are usually unnoticed within the global fishing industry. These fishers are important in shaping the socio-economic aspect of coastal communities and safeguarding the marine resources (Kolding et al., 2014). They provide about 70% of the world's total catch predominantly for domestic human consumption (Di Franco et al., 2016). Their significance extends to creating employment for another 200-300 million people through informal arrangements, with a notably substantial proportion being women (Kolding et al., 2014). These artisanal fishers, relying on traditional fishing practices, are deeply embedded in the socio-cultural fabric of coastal communities and arguably the cornerstone of local economies and livelihoods (Harker et al., 2022; Muthiga, 2009)

In Kenya, artisanal fishers are essential, sustaining the livelihoods of around 60,000 fishers and another 1.2 million individuals in fishing production and the supply chain (Kimani et al., 2018). These artisanal fishing communities face challenges such as human rights violations and loss of fishing grounds, which lead to low economic strength. They also have limited livelihood alternatives based on their location and economic status. Establishing MPAs, such as the Kisite-Mpunguti Marine Protected Area (KMMPA) in Kwale County, adds onto existing challenges for artisanal fishers in the region. These challenges include limited access to fishing grounds, instigating conflicts with conservation authorities, and declining fish stocks (Harker et al., 2022). Artisanal fishing remains the major source of income for local communities, however, the challenges they are facing due to establishment of MPAs scall for balanced approach that will incorporate both ecological impacts as well as the socio-economic aspect of these communities.

2.6. Political Ecology Perspective

As discussed by Robbin (2012), the political ecology perspective challenges traditional views on managing common property resources like fisheries, forests, and communal lands. This perspective is particularly relevant in the context of MPAs, where the management of natural resources directly affects the rights and livelihoods of the local communities. Robbin introduces the concept of common property theory, which is foundational in understanding how such resources are managed collectively, highlighting the spatial and temporal challenges associated with communal ownership and access. Historically, the management of these shared resources based on the conventional wisdom from the West has been dominated by the "Tragedy of the Commons" theory, which suggests that common resources tend to be overused and degraded due to lack of individual accountability, leading to calls for centralized regulation or privatization as solutions (Robbin, 2012). However, Robbin (2012) counters this view by pointing out that empirical evidence often shows successful community-managed resources that defy the tragedy narrative, suggesting that failure is not inherent to collective management. And that that many community-managed resources not only survive but thrive, contesting the notion that privatization or centralized control are the only effective management strategies. (Robbin, 2012)

This political ecology perspective is particularly relevant for MPAs, where governance models can significantly impact both ecological health and community welfare. In regions where artisanal fishing communities rely on these common marine resources, the political ecology framework suggests that successful management depends on the structure of rules and the engagement of local communities in the governance process. Empirical evidence supports that well-structured community governance can prevent the overexploitation of resources while sustaining the socio-economic benefits for local populations (Robbin, 2012). Integrating local community involvement and traditional knowledge into MPA management is very crucial to avoid the pitfalls of top-down regulatory approaches that can lead to resource depletion and social injustices. For example, in fisheries, Meleddu and Pulina (2010) classify these as "common goods" characterized by their non-excludability and rivalry, making unregulated access highly detrimental. Yet, Robbin (2012) argues that the right mix of community involvement and adaptive governance can transform these challenges into sustainable practices that support both conservation and local livelihoods (Robbin, 2012)

Moreover, the political ecology approach emphasizes the importance of considering multiple scales of power and the historical and socio-economic contexts that shape resource management policies. This is particularly important in MPAs where external pressures, such as international conservation goals and local socio - economic needs, must be balanced. Robbin (2012) further analysis suggests that the interaction between economic forces, state policies, and local traditions can often redistribute control over communal resources, sometimes to the detriment of local communities. This dynamic necessitates a political ecology approach that not only addresses ecological management but also considers the socio-economic dimensions and power structures influencing resource governance. This approach advocates for crafting rules that are not only ecologically sound but also socially just, ensuring that MPAs do not just conserve biodiversity but also enhance the social and economic well-being of the local communities they impact (Robbin, 2012)

Shanguhyia (2013) expands the discussion of political ecology by addressing the interplay between Africa's developmental narratives and global environmental politics. He argues that Africa's engagement in global environmental issues is not passive but is characterized by an assertive navigation through international discourses, which often positions the continent both as a victim needing intervention and as an active participant shaping its developmental trajectory. The study emphasizes that environmental politics in Africa are deeply interconnected with global economic and political currents, reflecting a complex history of interactions that transcend local and global scales. This highlights the continent's proactive stance on environmental and developmental agendas within the global context (Shanguhyia, 2013). Africa's political ecology is influenced not only by external influences but also by local and national dynamics and regional agreements geared towards sustainable development and environmental governance. The notion that environmental degradation in Africa is primarily due to local practices is myopic; instead, it is a complex result of historical, global, and local socio-economic pressures (Sh anguhyia, 2013). The imposition of global conservation standards often fails to consider the historical injustices and current socio-economic disparities that are in play (Shanguhyia, 2013).

Drawing from Shanguhyia (2013), this political ecology perspective shows the complex interplay between local socio-economic dynamics and global environmental narratives, which is critical for understanding the impact of MPAs on artisanal fishing communities. Africa's environmental issues

have often been shaped by global forces in the view that the continent is both a contributor to and a victim of environmental problems. This framing affects local communities reliant on natural resources for their livelihoods. This perspective reveals that while these MPAs are established with conservation intentions, they are also influenced by global conservation narratives not aligned with local socio-economic needs and considerations. Artisanal fishing communities often find themselves at the intersection of these global and local dynamics. MPAs, by restricting access to traditional fishing grounds can significantly impact these communities who depend on these areas for their socio - economic survival.

By applying a political ecology lens, MPAs are also viewed as political arenas where power dynamics, stakeholder interests, and historical contexts intersect. This advocates for socially equitable governance models within MPAs, which ensures that conservation benefits are fairly shared among the involved stakeholders, especially artisanal fishers whose livelihoods are interdependent with this marine environment. The probable socio-economic benefits for artisanal fishing communities can be maximized by integrating local knowledge and local participation in the governance of MPAs.

2.7. Participatory development Approaches

Building upon the theoretical foundation of the value of indigenous knowledge and local community participation in sustainable development, it is important to acknowledge the significance of community engagement and collaboration in the context of MPAs (Briggs, 2005; Peer et al., 2022, Adams, 2001). The establishment and management of MPAs should not be top-down initiation but rather should involve the active participation of local communities who depend on these marine ecosystems for their livelihoods. As emphasized by Gillingham (2001), effective sustainable development projects necessitate open and ongoing conversations with local stakeholders. In the case of MPAs, this translates into the need for inclusive and participatory decision-making processes where the views and concerns of artisanal fishers and coastal communities are not only heard but also integrated into the management strategies of the KMMPA. Neglecting this key step can result in overlooking critical concerns and potentially lead to resistance or non-compliance.

However, Gillingham (2001) critically examines the assumption of homogeneity within communities, a prevalent misconception in conservation efforts. She highlights that communities are often diverse, with varying social, economic, and political interests that can influence participation and compliance. This is particularly relevant in the MPA management where differences in community segments may lead to conflicts or disparities in conservation impacts, undermining the uniformity presumed by many conservation initiatives. Furthermore, Gillingham (2001) notes the risk of mismatched organizational structures. Imposing external management frameworks without aligning them with existing social organizations within the community can lead to non-compliance and conflict. Therefore, a flexible approach to governance structures that respects and integrates local leadership patterns and community norms is needed (Gillingham, 2001).

Recognizing and valuing individual and local perspectives in sustainable development is important (Adams, 2001). For MPAs, this means considering the unique knowledge and experiences of artisanal fishers who deeply understand the marine ecosystems they depend on. By involving them in the planning, implementation, and management of the KMMPA, a more holistic and contextually relevant approach to conservation can be achieved. Furthermore, Briggs (2005) highlights that local engagement promotes both a sense of ownership and responsibility by the artisanal fishing communities. When local communities are actively involved in decision-making process and implementation of conservation measures, they are likely to become the stewards of the ecosystem (Gasalla, 2011). This sense of responsibility is beneficial to the long-term success and sustainability of KMMPA.

In the specific case of MPAs, using indigenous knowledge passed down through generations is particularly valuable. This includes information about seasonal variations, sustainable fishing gears, migratory patterns, and the behaviour of marine species. Integrating this with scientific research enhances the effectiveness of conservation efforts (Peer et al., 2022). This blend of traditional wisdom and modern science can significantly enhance the effectiveness of conservation outcomes, making MPAs not just reserves but also active sites of cultural and ecological synthesis. Briggs (2005) further emphasizes that indigenous knowledge is inherently dynamic, continuously evolving in response to environmental and community changes. This adaptability is important for the management of MPAs where ecological and social conditions are frequently experiencing

changes. Indigenous knowledge systems ability to adapt shows a deep understanding of local ecosystems which in turn enables communities to respond to ecological changes effectively. These changes include shifts in fish populations, changes in water quality, or climatic variations (Briggs, 2005)

While the inclusion of indigenous knowledge in MPA management is advocated to ensure culturally sensitive and ecologically effective conservation outcomes, Briggs (2005) also identifies significant challenges that must be addressed. These challenges include romanticising indigenous practices, where such knowledge is idealized without critically evaluating its applicability or effectiveness in contemporary contexts. Parting this knowledge from its cultural and historical roots leads to misinterpretations and misuse in policy and practice settings (Briggs, 2005). As the study focuses on the socio-economic dimensions of the KMMPA, it is essential to consider how the participatory approaches influence both the ecological goals of the MPA and the livelihoods of its dependent communities.

2.8. Theoretical Framework

This conceptual framework maps out the interconnections between global conservation goals, local economic conditions, political ecology, and participatory development approaches, collectively influencing the livelihoods of artisanal fishers within the Kisite-Mpunguti Marine Protected Area (KMMPA). At the global scale, conservation goals prioritize biodiversity and establish the overarching agenda for conservation initiatives, which directly influence national and regional conservation policies. This insertion of global priorities into local contexts can sometimes align well with local socio-economic conditions but can also lead to conflicts and resistance if not managed with an understanding of local livelihoods and social structures. In (figure, 5) below global conservation goals are depicted as external drivers shaping the conservation policy priorities and expectations within the KMMPA. These goals influence the formulation and enforcement of policies aimed at preserving marine biodiversity which directly impacts the artisanal fishers. The flow of influence from these global objectives to local policy highlights the top-down approach in conservation efforts that often overlooks local socio-economic dynamics.

These global conservation policies are interpreted and implemented within the local context, where political ecology provides a critical lens through which the power dynamics and policy impacts on local communities are analysed. Political ecology serving as a central theoretical approach in this study examines how conservation policies influenced by global goals and local economic conditions affect resource access, community dynamics and MPA management. It provides a lens to analyse conflicts between artisanal fishers and conservation authorities, revealing how power dynamics and governance structures impact policy implementation and community response.

Local economic condition as depicted in the diagram (figure 5) reflects the prevailing economic conditions of the local artisanal fishing communities at Shimoni mainland and Mkwiro Island. Positioned to impact and be impacted by community participation and KMMPA policies, local economic conditions determine the feasibility of various adaptive strategies and participatory approaches. Economic stability or instability affects how communities can and will engage with conservation initiatives. In settings where economic conditions are strained, the imposition of conservation measures without adequate socio-economic considerations can exacerbate vulnerabilities and resistance to change. Strong local economies can empower communities hence compliance with conservation rules and facilitate the development of alternative livelihoods when traditional practices are restricted by conservation efforts.

The framework illustrates the role of participatory development as a mediator supporting the compliance and effectiveness of conservation outcomes by enabling community involvement in decision making process of MPA. It suggests that for KMMPA management strategies to be effective it must include the artisanal fishers knowledge and address their needs thereby enhancing compliance and reducing conflicts. The diagram shows participatory development as a mechanism that supports community involvement, which in turn influences local economic conditions and feeds back into the KMMPA impact on artisanal fishers. This element stresses the thesis argument for integrating participatory approaches into conservation strategies to ensure they are not only ecologically sustainable but also socio-economically just.

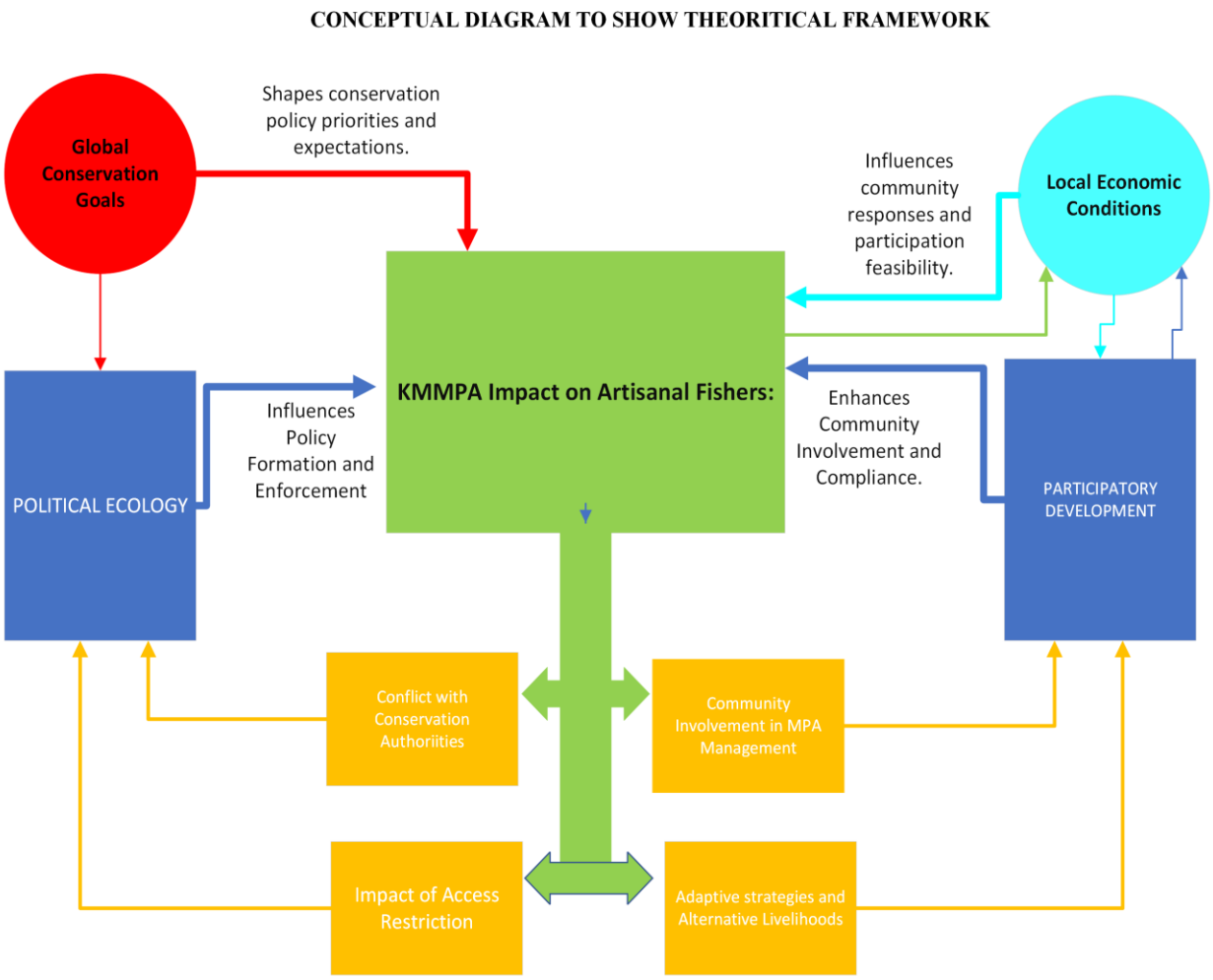

Figure 5: Diagram to show theorical framework. Source (Edger, 2024)

In linking these components, the framework visually and narratively captures the core of the thesis: that the sustainable conservation of marine resources within the KMMPA requires a balanced approach that respects and integrates both ecological and socio-economic dimensions. The arrows indicate not just directional influences but also feedback loops where local conditions and responses can inform and refine broader conservation goals and practices. By aligning theoretical knowledge with empirical findings, the framework aids in understanding how better conservation outcomes can be achieved through integrated approaches that consider ecological, economic, and social dimensions.

CHAPTER THREE: METHODOLOGY

3. Introduction

This chapter describes the methodology used to research on the socio-economic impact of MPAs on artisanal fishing communities, with focus on the KMMPA. The chapter gives an outline of research methods and tools used for data collection as well as analytical techniques. Additionally, the methodology outlines the challenges, experiences and perceptions of the local artisanal fishers and effects of KMMPA on the fishers, thus addressing the research questions outlined in Chapter One. The philosophy for choosing a qualitative approach is due to its effectiveness in capturing the effects of KMMPA on the fishing communities.

This chapter further explains the sampling strategies, data collection methods such as semi-structured interviews and participant observation, and the criteria used for data analysis. Ethical considerations in studies involving human subjects are also discussed to ensure transparency and adherence to academic principles. By linking the research methods to the study objectives, the chapter also outlines how the methodologies were appropriate in addressing the socio-economic dimensions identified in the previous chapters. This methodological foundation is critical in validating the research findings as well as ensuring that they contribute to the discussions on MPAs and community socio-economic activities.

3.1. The Study Approach

To best document and understand the perception and lived experiences of artisanal fishers in relation to the KMMPA, I settled on qualitative methods as the ideal methodological framework. Qualitative methods allow for interactional engagement with the participants ensuring that their voices, lived experiences, and perceptions are not only heard but also adequately explored (Bryman, 2016). The approach has been widely acknowledged as suitable for investigating issues that require exploring into more intense human behavior, such as emotions, feelings, and attitudes. According to Bryman (2012), qualitative methods underscore words and experiences rather than the quantification of data collection and analysis. I found it to be relevant to my study since my primary interest was to explore the connection of marine conservation efforts and the livelihoods of artisanal fishers. This investigation was prompted by the need to reconcile the ecological

benefits of MPAs with the socio-economic realities of those whose livelihoods depend on these waters. Therefore, my research objective was set to explore the livelihood challenges and perceptions of artisanal fishers since the establishment of the KMMPA as well as coping strategies adopted by the fishers in response to these challenges.

To understand the realities of a society, it is important to do it from the perspective of its participants (Bryman, 2012). Therefore, no one is more suited to explain the experiences and perception of the artisanal fishers in relation to the establishment of KMMPA than the fishers themselves. The challenges faced by artisanal fishers in KMMPA and some of their experiences with KMMPA management and on their livelihoods are emotive issues requiring careful and well-planned investigations. Hence, it was important that any methodological approach I settled on would be thorough and brought me closer to the artisanal fishers as possible. By selecting the qualitative methodology approach, I allowed myself to feel and understand the experiences of the artisanal fishers firsthand in relation to the existence of KMMPA. In aligning with the theoretical frameworks introduced in previous chapters, the qualitative methods facilitate a thorough exploration of the political ecology and participatory approaches that are critical for understanding the governance and community involvement within MPAs. This methodological alignment ensures that the research findings not only contribute to empirical knowledge but also to theoretical discourse on sustainable marine conservation outcomes.

3.2. Data Collection

The selection of the data collection method plays an important role in determining the success of any research study, as emphasized by Bryman (2016). Due to the nature of data I intended to collect and the need for interaction with participants, semi-structured interviews and participants observations deemed suitable to conduct the study. Since its recommended to utilize a variety of research tools and methods when conducting a study on a complex phenomenon, a multi-method approach was more suitable. This is because it utilizes the strengths of each research method to generate data that might not be achieved through a single method (Bhattacharjee, 2012). Data collection methods used to ensure that there was exhaustive coverage of the research topic as semi-structured interviews were conducted to capture detailed personal narratives and understanding of KMMPA by the artisanal fishers. These interviews coupled up with observation, provided

additional information by capturing non-verbal cues within the participants natural settings. This combined method approach enabled triangulation of data, hence enhancing the reliability of the findings.

O'Reilly (2011) further highlights the advantages of using both interviews and observation methods, where he states that the two methods complement each other since what is observed in the field and what the participants express in the interviews may not always align. The interviews can sometimes lead the participants to provide socially acceptable responses, masking their true thoughts. Therefore, by using both observations and interviews, the research aims to reveal not just the participants response but also the contextual details within their social setting (O'Reilly 2011). The observation conducted was overt, allowing me to openly engage with local community by observing their daily activities, which enabled me to understand the practical implications of MPAs on artisanal fishing activities. The approach further allowed me to observe the interactions between conservation efforts and fishing practices, providing a detailed perspective on the socio-economic impacts of KMMPA to the fishers. The comprehensive and detailed data I collected using these two tools justified their selection and use in this study.

3.2.1. Semi Structured Interviews

Semi-structured interviews are fundamental into the qualitative research methodology. DeJonckheere and Vaughn (2019), highlights that these interviews are effective in eliciting qualitative and open-ended responses which enables a deep exploration into the thoughts, feelings, and beliefs of the participants on specific topics, including those viewed as personal and sensitive. Bryman (2016, p. 470) further emphasizing on their benefit in capturing the mindset of interviewees, promoting a focused yet a flexible dialogue. These reasons informed my decision to use semi-structured interview in this study, anticipating that it would provide a robust data. This method facilitated structured but flexible discussions, which ensured the participants could express themselves freely.

Face-to-face semi-structured interviews were conducted within Kwale County and involved artisanal fishers from Shimoni and the Island village of Mkwiro, who were actively participating in artisanal fishing within KMMPA, residing in towns and villages neighbouring the KMMPA, and those directly exposed to the KMMPA regulations. I connected with a former schoolmate,

an employee of State Department of Fisheries. This connection proved important as it provided me access to various Beach Management Units (BMU) in Shimoni Sub-County, where the KMMPA is located. The BMUs, which is mandated to manage local fishing activities, became a point of contact in identifying key participants who fit the criteria of my research. Focused on exploring the perspectives of artisanal fishers from two key fishing communities in Shimoni and Mkwiro. I also relied on the support of BMU chairmen who assisted in identifying the key participants who meet the research criteria, with the view of securing consent from them.

In compliance with NSD and University of Agder's regulations on personal data protection, I conducted all interviews using manual notetaking instead of audio recordings, as my studies were conducted in Kenya, limiting my access to university-issued Dictaphones. This approach ensured the confidentiality and privacy of participant responses but also required strict scheduling and time management. Although the method was time consuming, it enabled an in-depth engagement with each participant. On a typical day, this approach enabled me to conduct two to three exhaustive interviews, ensuring that each interaction was well documented and aligned with the ethical standards stipulated by the university.

3.2.2. Overt observation

Overt observation was used together with semi-structured interviews as it captures aspects of the research context that are often inaccessible to other instruments. According to Bryman (2016), overt observation allows researchers to observe and interpret the participants verbal statements and non-verbal responses, such as body language and gestures, which can reveal deception, fatigue or disinterest. The ethnographic nature of this approach provided a dynamic view of how individuals navigate and respond to their environments, aligning observed behaviours with response from the participants. This method further enables a profound understanding of the underlying values, social norms, and cultural dynamics that shape the experiences of the study participants, offering a more comprehensive perspective on the research topic. The study incorporated an overt observation, where the participants were made aware that they are being observed. This approach provided knowledge on the daily lives and activities of artisanal fishers within the KMMPA for the duration of field work.

My visit to the fishing grounds of Shimoni and Mkwiro was eye-opening which offered firsthand understanding of the artisanal fishing techniques, vessels, and the fishers connection to their environment. These observations helped me with contextualization of the interview data, linking it to tangible practices and challenges facing the community. Observations of community-initiated coral reef restoration efforts ("Tengefu") and the restrictive buoys demarcating the boundaries of KMMPA, enabled me to further understand the interaction between conservation efforts and artisanal fishing practices. Moreover, aboard a tourist boat within KMMPA, I was able to observe the area's ecological richness and the efforts to conserve its biodiversity. The marine life, critical habitats conservation, and bustling tourist activities within KMMPA provided a distinct contrast to the challenges faced by the local artisanal fishing communities in the adjacent Shimoni and Mkwiro waters, highlighting the need for a balanced approach to conservation as well as putting into consideration the livelihoods of those it impacts.

3.2.3. Interview Guide

The semi-structured interviews were conducted using a meticulously designed interview guide. The guide assisted in ensuring the discussions with the participants were exhaustive and they aligned with study's research objectives and questions. The development of the interview guide was informed by an extensive review of the relevant literature and the theoretical framework established in earlier chapters, ensuring that each question was suitable with the socio-economic impacts of the KMMPA on artisanal fishing communities.

I structured the interview guide into several thematic segments with each exploring different aspects of the artisanal fishers' experiences within the KMMPA. The first section focused on gathering background information, providing a context for the fishers' experiences. Following sections focused on the main areas of the study, addressing the livelihood challenges facing fishers since the establishment of the KMMPA, the fishers perceptions of these challenges and the coping mechanism they have adopted in response to the KMMPA regulations. Each segment of the interview guide was thoroughly crafted to elicit information that would address the specific research questions, as shown in the first chapter. For example, questions related to the 'Livelihood Challenges' and 'Perceptions and Impacts' directly corresponded with the research questions regarding the specific challenges posed by the KMMPA and how the fishers perceive these.

Similarly, the 'Coping and Adaptation Strategies' section corresponded the adaptive measures taken by fishers in response to their changing circumstances, providing knowledge into their resilience and creativity. The final part of the guide was designed to be open-ended, allowing participants to express concerns or share insights which ae not covered by the guide. This flexibility enhanced the data collected and ensured that participants felt their contributions were significant. It further opened the possibility of uncovering unexpected aspects of their experiences with the KMMPA, adding more details to the research findings.

This structured approach to the interview guide facilitated an exploration of the research topics while allowing the participants to express their views fully. By aligning the interview questions with the study's objectives, it ensured that the findings were relevant to the overall questions of the thesis.

3.3. Sampling

The sampling strategy used for this study was designed to explore the overall research objectives, which aimed at understanding the complex balance between MPA conservation efforts and the socio-economic well-being of artisanal fishing communities. The selection criteria involved active participation in artisanal fishing activities in the vicinity of the KMMPA, visiting fishers residing in towns and villages neighbouring the KMMPA, and those directly impacted by KMMPA's regulations. This approach ensured that the sample reflected the perspectives of those directly affected by the policies and conditions within the protected area.

Artisanal fishers in Kwale County, particularly those within the proximity of KMMPA, mostly come from low-income backgrounds with limited access to formal education. This demographic profile is important in understanding the socio-economic dynamics at play and that fishing is not just a livelihood but also a cultural and communal occupation inherited across generations, making it the most accessible and viable livelihood option. Conversely, individuals who have attained secondary or higher education often diversify their economic activities engaging in part-time fishing and primarily working in tourism or other sectors within the hospitality industry. This diversification is among the community's adaptive strategies developed in response to the economic opportunities and constraints introduced by KMMPA.

The initial target for participant recruitment in this study was 20 artisanal fishers. This target was based on an anticipated need to achieve data saturation, a key criterion in qualitative research where the collection of new data no longer sparks new details or reveals additional themes (Bryman, 2016) However, practical fieldwork constraints and a stringent participant selection process designed to meet high ethical standards and research relevancy ultimately resulted in a final sample of 16 artisanal fishers. This number was deemed sufficient due to several key factors. Firstly, data saturation was evidenced by the recurring emergence of consistent themes in later interviews, which mirrored narratives from earlier sessions indicating that additional data would likely not introduce new revelations. Secondly, the qualitative approach prioritizes depth and richness of data, where extensive engagement with each participant allowed for rigorous exploration of their experiences and perspectives which was critical for understanding the socio-economic impact of the KMMPA. Furthermore, the sample was diverse which included individuals of varying ages, genders, and fishing roles, reflecting a range of perspectives within the artisanal fishing communities of Shimoni and Mkwiro. Lastly, a smaller, more focused sample size facilitated more manageable and high-quality interactions which is important in qualitative research where the depth of the researcher's relationship with participants can significantly impact data quality.

The sampling technique used was a combination of criterion based as well as snowball sampling. Criterion purposive sampling allowed for the selection of participants who met specific predefined conditions relevant to the research questions (Bryman, 2016). This method ensured the inclusion of a diverse range of characteristics necessary for in-depth qualitative analysis. Snowball sampling proved particularly advantageous in this context as well since initial participants recommended additional respondents who met the study criteria and could provide valuable contribution, utilizing the close connections within the community to tap into a broader network of relevant participants (Bryman, 2012; Bhattacharjee, 2012).

Purposive sampling is often used in qualitative research, where the depth and detail of information are more important than the statistical representativeness. This depth and details are important for comprehensively understanding the dynamic livelihood challenges, perception, experiences, and coping strategies of artisanal fishers in the wake of KMMPA, illustrating the complex balance between conservation efforts and the socio-economic well-being of artisanal fishing communities.

3.4. Selection Criteria and Participant Recruitment

During my research, I conducted fieldwork in Shimoni Sub – County located in Kwale County, along the Coastal region of Kenya. There are many artisanal fishers within what is widely known as Shimoni - Vanga Seascape but my study was particularly focused in Shimoni Town, Mkwiro village which is within Wasini Island and within KMMPA To facilitate my research I relocated to Shimoni Town for the duration of the fieldwork. This strategic move was aimed at maximizing efficiency in time and resource utilization thus enabling closer interaction with the local fishing communities.

Leveraging on my personal network to gain deeper access to these fishing communities, I connected with a former schoolmate working within the State Department of Fisheries in Shimoni Town. This connection proved important as it provided me access to various Beach Management Units (BMU) in Shimoni Sub-County, where the KMMPA is located. The BMUs, was a critical point of contact for identifying key participants who fit the criteria of my research. The BMUs provided an important entry point for engaging with the artisanal fishers. I was introduced to the chairmen of the Shimoni and Mkwiro BMUs, who assisted in identifying potential research participants who were artisanal fishers meeting the criteria of my study. To mitigate the risk of bias and guarantee a broader range of perspectives, I requested that these chairmen introduce me to fishers with whom they did not have close relationships. Additionally, to expand the diversity of participant views and experiences, I employed a snowball sampling technique. Each participant I interviewed was asked to recommend another potential participant thereby expanding the network of contributors and enriching the data collected.

Throughout the recruitment phase of my study, two participants emerged as invaluable assets offering critical referrals that enriched my participant pool. The interviewees they recommended became key participants in my research work providing diverse details into the impacts of the KMMPA on artisanal fishers. However, not all referrals were automatically included in the study. To ensure a robust and representative data set I conducted preliminary 'informal' pre-interviews to gather basic information from each potential participant. This was to help in the selection process, where demographics were considered vital. These pre-interviews served a double purpose. Firstly, they allowed me to verify that each participant met the specific

demographic criteria essential for a comprehensive analysis. Socio - demographic factors such as age, gender, social status, education level, income, years of experience, and lived experiences significantly influence individuals' behaviours, responses, and perceptions of justice, as highlighted in various studies (Amegayibor, 2021). Secondly, these initial interactions helped in assessing the potential contributions of each participant to the research objectives. Additionally, it was important to compare narratives of experiences and identify common patterns across the study's demographic spectrum.

My interaction with the first participant introduced to me by the BMU chairman would later turn out to be very impactful and resourceful as this participant is the one who introduced me to a female artisanal fisher, one of only two women I interviewed. Despite her initial elusiveness, our chance meetings left a significant impression, enriching the diversity and depth of the perspectives I gathered. My engagement and interactions with her over the course of my fieldwork informed my decision to include her voice in my work. Her experiences, coupled with those of other participants recommended through a network of referrals, were important in exploring the dynamic livelihood challenges, perception, experiences, and coping strategies of the fishers affected by the KMMPA.

One the key ethical stance in my methodology was the refusal to compensate participants for the interview, resulting in loss of several potential participants. This ensured that those selected were motivated by a genuine interest in contributing to the study that focused on challenges facing their communities. This approach enhanced the reliability and depth of the data collected, ensuring that the insights provided were both genuine and reflective of the artisanal fishers community raw perspectives.

3.5. Data Analysis Process

Poor processing and analysis of data collected can render an entire study futile, even with the richest and most accurate data. Therefore, choosing this study most appropriate data processing and analysis techniques was critical. Qualitative studies can use content, thematic, narrative, grounded theory, or discourse analysis to determine patterns and trends (Bryman, 2016). However, due to the volume of data I collected and time constraints, I chose thematic analysis.

This technique required me to identify recurring patterns within the textual data, which were then systematically categorized as themes and subthemes. This thematic analysis method proved faster and more efficient, especially when working against a fixed timeline (Bryman, 2016).

I thoroughly reviewed my interview notes and observation data, making notes on any distinct patterns, interesting findings, or recurring responses that emerged. During this review, I began coding process by identifying significant phrases, patterns, or concepts about my research questions. The coding process involved tagging pieces of data, whether sentences or paragraphs, with tags that summarized their content or significance. For instance, mentions of "restricted access to traditional fishing grounds" by a participant were coded as "Access Restrictions." Following this, I grouped related codes into potential themes representing extensive patterns relevant to my research questions. I then verified the accuracy of these themes in representing the dataset, which included refining the themes by splitting them into sub-themes or combining them to ensure each theme was coherent and distinct.

I systematically coded the texts from interviews and observations into more than 15 themes and subthemes, utilizing repetitive phrases, words, and concepts. Initially, seven themes were identified; however, after further review and refinement - which included renaming and reassessing the relevance and depth of the themes - four themes were finally determined to be significant. These themes were consistently reflected in the literature in various forms and frequently mentioned by the participants several times. In essence, there was enough data to build and support them, demonstrating their prevalence and impact within the study context. Themes such as resource scarcity, technology and innovation in fishing, and education and awareness, while detailed, narrowly missed inclusion based on the established criteria.

Only participants with secondary education communicated in English; however, most of the information was conveyed in Kiswahili, Kenya's national language, which originates from the coastal regions and is predominantly spoken there. The dialect of Kiswahili spoken along the Kenyan Coast is notably deep and distinct in accent compared to that of mainland areas. However, the differences are primarily in accent and a few case vocabularies. During the interviews, notes were taken in the language used by the participants to capture their perceptions

and experiences accurately. These notes were later translated into English in the data processing and analysis phases to facilitate coding.

Reflecting on the language challenges encountered during the study, translating the interview responses from Kiswahili to English presented unique difficulties. Many of the artisanal fishers used local coastal dialects, which included vocabulary quite distinct from the standard Kiswahili familiar to me. This involved words and phrases specific to their environmental interactions, experiences or fishing equipment. To overcome these challenges, participants were required to further explain or demonstrate the meaning of unfamiliar word, which I recorded using the closest equivalent Kiswahili word known to me. Additionally, to ensure the accuracy of these translations, I consulted a former schoolmate with extensive experience working in the Department of Fisheries in Shimon Sub- County within Kwale County. His expertise in coastal and mainland Kiswahili, coupled up with over a decade of local experience, ensured that the translations maintained the meaning of the original responses. This comprehensive attention to linguistic detail was crucial, as it assisted in preserving the authenticity of the participants' perspectives and further ensured that the data analysis was grounded in the true condition of their experiences.

3.6. Permissions and Gaining Access

Gaining access and obtaining permission is critical in conducting research involving humans subject or sensitive settings or information. Additionally, ethical considerations play a key role in this process, as outlined by Bryman (2016). Researchers are required to secure informed consent from individuals or organizations before beginning their fieldwork, this ensures transparency on the research's purpose. At the University of Agder, adherence to ethical standards is strictly administered through the guidelines established by the Norwegian National Research Ethics Committees (NSD).

Upon securing NSD/SIKT approval, my next step was to obtain a research license from the National Commission of Science, Technology, and Innovation (NACOSTI) in Kenya, a critical requirement for conducting fieldwork within the Country. Despite being a Kenyan citizen, I initially encountered a challenge, where I was mistakenly charged a higher fee meant for foreign

students. However, I appealed this classification, and issue was resolved, allowing me to obtain the necessary authorization at a revised rate. With the NACOSTI license in hand, I traveled to Shimoni Sub-County in Kwale County, where I engaged with local administrative bodies. I presented my NACOSTI License to the Assistant County Commissioner (ACC) of Shimoni and the Ward Administrator, as required by Kenyan law, ensuring my official entry into the fieldwork phase. This formal introduction was instrumental in ensuring acceptance and cooperation of local authorities and community members, thus setting a foundation for the commencement of my research activities.

In relation to gaining access, Bryman (2016) highlights the strategic considerations involved when researchers attempt to enter a field setting. Bryman suggests several key strategies for gaining access, such as negotiating entry, being honest about the research's demands, and offering something in return, usually referred to as a 'research bargain.' This can involve engaging gatekeepers who control access to settings or groups and providing a compelling reason or benefit for the study (Bryman, 2016). In my case, I was able to utilize my personal network effectively. I connected with a former schoolmate, an employee at the State Department of Fisheries, which proved to be a significant advantage. This connection enabled me access to various Beach Management Units (BMU) within Shimoni Sub-County, where the KMMPA is located. The BMUs, mandated to manage local fishing activities, became a critical point of contact for identifying key participants who fit the criteria of my research. Focused on exploring the perspectives of artisanal fishers from two key fishing communities, Shimoni and Mkwiro, I relied on the support of BMU managers in identifying the first key participants who meet the project criteria. This demonstrates the importance of personal connections and networking in gaining access for research purposes. Moreover, my background as an African born and raised in Nairobi, Kenya, may have also played a crucial role in facilitating me to gain access.

3.7. Ethical Consideration.

Studies involving human subjects require rigorous attention to ethical considerations, especially when dealing with participants from marginalized groups such as artisanal fishers. These individuals might have previously endured challenging encounters with enforcement authorities, such as the Kenya Wildlife Service (KWS) guards, which could have left them vulnerable or

traumatized. Therefore, adhering strictly to the ethical research standards throughout my study was vital.

To ensure the utmost respect for the autonomy of the participants, I made it clear from the onset that participation was entirely voluntary. This meant that the participant could discontinue their interview at any point, without any justification. Additionally, prior to starting the interviews, I obtained informed consent from all participants. This was done by providing them with a consent form (see Appendix: 1), which outlined the research objectives and the potential risks involved with their participation. Only those who signed the consent form, thereby officially giving their consent, were included in the study.

In addition, to obtaining informed consent, I provided participants with a cover letter that clearly outlined the purpose of the study and its potential societal benefits. This document was crucial in clarifying any misunderstandings or misconceptions, particularly in eliminating fears that shared information could be passed to government officials, who might view the fishers as obstacles to objectives of Kenya's blue economy sustainable development, marine conservation as well as tourism. The cover letter also addressed prevalent misconceptions that the research could automatically trigger external interventions or pressure the governmental and conservation bodies to address the challenges faced by artisanal fishers. By providing this letter, it ensured that the participants made fully informed decisions regarding their participation in the study, free from any undue expectations or fears.

To protect participant confidentiality, I implemented several security measures. I utilized secure data storage systems and anonymized the data whenever possible. The data collection process did not record personal data such as names, phone numbers, addresses and email addresses. Instead, pseudonyms were used throughout this study to ensure that the participants' identities remain confidential. Additionally, I did not collect sensitive personal information such as religious beliefs, ethnic backgrounds, or sexual orientation. However, the only personal details gathered were those crucial for understanding the socio-demographic context of the participants while avoiding any sensitive or invasive personal data.

The field observations were conducted overtly as the individuals were fully aware that they were being observed and obtained their consent prior to the observation. I also emphasized on the participants' right to request the erasure and rectification of their personal data. When participants wished to withdraw their consent, I ensured that all personal data related to them was immediately deleted from the study to respect their privacy and data protection rights.

Aware of the probable risks associated with my research, especially for participants who had previously endured traumatic encounters with enforcement authorities such as the Kenya Wildlife Service (KWS), I clearly communicated the purpose of the research and the associated risks. For participants who were uncomfortable or distressed, were allowed to withdraw from the study without any repercussions. This precaution ensured that no participant felt coerced or forced into participating in the the study against their will, therefore upholding the required ethical standards. Throughout the study, I conducted myself with humility, refraining from any form of judgment or discrimination. I was careful not to make the victims feel responsible for any adversities they had experienced at the hands of enforcement authorities.

Regarding health concerns, despite the COVID-19 pandemic no longer being a threat, I took significant precautions to ensure the safety of all participants by offering mask, encouraging their use during the interviews, and promoted basic hygiene practices such as hand washing and maintaining safe physical distances.

During my visits to the homes of some interviewees, I adhered to local customs and etiquette which demonstrated respect for their cultural and religious practices. Recognizing the predominantly Muslim composition of the community, I ensured the interviews concluded before prayer times and further I participated in communal activities such taking meals together with family during interview. For interviews with female fishers, they were conducted in the presence and with the permission of their husbands, respecting the cultural norms of the community. These measures were not just a formality, but a genuine effort to ensure that the research process was respectful and considerate of the cultural and religious practices of the participants.

CHAPTER FOUR: PRESENTATION OF EMPERICAL FINDINGS

4. Introduction

This study aimed to comprehensively investigate the dynamic livelihood challenges faced by artisanal fishers in Shimoni and Mkwiro Island located within Kwale County, Kenya, due to the existence of the Kisite Mpunguti Marine Protected Area (KMMPA) and explore their perceptions and coping strategies in response to these challenges. By addressing these key objectives, the research seeks to contribute to the broader field of development management studies informing policymakers and relevant stakeholders on strategies for enhancing the coexistence of marine conservation outcomes and the socio-economic consideration of artisanal fishing communities.

This chapter presents the empirical findings as organized according to the themes that surfaced from the thematic analysis while closely aligned with the research questions and study objectives. It introduces the findings as raw data, indicating that while the thematic arrangement guides the presentation of findings the section titles may not directly correspond to the names of the analysed themes. This approach allows for a raw and unfiltered interaction with the data as collected, setting a stage for an interpretation and analytical discussion to follow. The structure is deliberately chosen to bridge the initial data collection with comprehensive analyses in the subsequent chapter, ensuring a coherent flow that aids in understanding the broader impacts and implications of the findings.

4.1. How KMMPA Boundaries Affect Local Fishers Lives

This section delves into how KMMPA boundaries have limited fishers' ability to access traditional fishing grounds, a situation that has reshaped their fishing practices and economic stability. These restrictions not only impact the quantity and quality of fish catches, but they have also affected the cultural and social fabric of these fishing communities. The MPA boundaries set around KMMPA have significantly restricted artisanal fishers' from accessing traditional fishing grounds, impacting negatively on their livelihoods. Initially, the boundaries were meant to protect marine life but have since expanded, pushing fishers further away from their usual fishing zones. These changes have

increased the distances fishers must sail, requiring them to invest in more robust vessels to access deeper waters, which are beyond their economic reach.

The aim of the expanded boundaries, as articulated in the 2014 report by the Kenya Wildlife Service (KWS), is to protect specific habitats such as coral reefs, seagrass beds and mangrove forests and reduce conflicts between human activities and conservation goals. This strategic control of access to critical habitats is aimed at enhancing biodiversity conservation and maintaining ecological integrity, hence supporting the broader objectives of marine conservation (KWS, 2014).

Despite these conservation benefits, the local artisanal fishers have faced significant challenges. Hassan (pseudonym), a fisher in his early 40s with 25 years of experience, shared his frustration: "The beacons and buoys that mark the park's boundaries are located approximately 5kms from Shimoni and 500 meters from Wasini Island, which are our community's fishing shores. They have been moving the beacons without consulting the community and continually expanding the boundaries over the years." This unilateral expansion of KMMPA areas has further restricted the fishing grounds and because the beacons and buoys that are park boundaries are spread apart it makes it difficult for the fishers to know the boundaries especially when fishing at night.

Juma (pseudonym), a part-time fisher in his late 30s and hotel owner, highlighted a common problem: "Trespassing due to the lack of clear and visible boundaries in the form of buoys, which are small and far apart, is a common problem for us fishers, especially at night." Mohammed reflected on unfulfilled agreements: "The initial agreement was that Kisite Island and surrounding waters would be the place for the Marine Park, and Upper and Lower Mpunguti areas would be reserves where the community could fish. That is no longer the case; the entire area, including the reserves, is now protected and off-limits to fishers."

The implementation of KMMPA boundaries has significantly altered the spatial dynamics for local artisanal fishers, particularly concerning their access to traditional fishing grounds. Over time, the boundaries of KMMPA have been expanded, often without consultation with local fishing communities, encroaching on areas that were previously fertile fishing grounds and pushing the fish deeper into the protected areas where fishing is restricted. Participants have reported direct

impacts on their fishing activities due to restricted access. For example, Hassan mentioned: "To have a better catch now, one requires more advanced vessels to go to the deep seas, mostly beyond KMMPA, something that most artisanal fishers cannot afford."

Some fishers, like Hassan, believe that the KMMPA has contributed to the decline in fish stocks near the shore and in the small parts of the reserve left for them to fish. They argue that fish feels protected inside the park and as more fishers are confined in a small fishing space given the inferior nature of their canoes and the restrictions accessioned by an expanded boundaries of the Marine Park the fish stocks have reduced due to overfishing and also led to use of destructive fishing techniques that destroys the corals and make fish to migrate to safe waters within the KMMPA.

This restriction has led to reduced fish catches and increased operational costs, severely affecting fishers' incomes and livelihood sustainability. The expanded boundaries have necessitated changes in fishing practices. Artisanal fishers, who traditionally relied on smaller, more affordable canoes, now need to invest in larger, more expensive boats capable of traveling to deeper waters beyond the KMMPA limits. This change represents a significant financial burden, which many artisanal fishers cannot afford. Moreover, the restriction has led to increased travel time and fuel costs, further straining their already marginal profits.

Access restrictions within the KMMPA have impacted male and female fishers differently. Hadija (pseudonym), a female fisher in her late 60s, who is married to a fisherman and has sons who are also fishers, highlighted how these restrictions affect women specifically. Hadija and other women are primarily shore-based octopus fishers, fishing during low tides within mangrove areas. They are also involved in collecting cowrie shells and cultivating seaweed. The women fish for octopus seasonally, particularly during the "Kuzi" season, using specially pointed sticks around the island and within the mangrove ecosystem. Hadija explained that the restrictions and boundary expansions within KMMPA have led men to overexploit their usual fishing areas along the shores, prompting some of them to resort to fishing for octopus alongside the women. While women use special pointed sticks, some men employ destructive fishing practices, such as using bending wires that damage octopus nests and drive the species away from nearshore reefs, where women usually fish. The women fish for octopus sustainably and seasonally near the shore, while some men fish for octopus daily both near the shore and in the ocean, unsustainably, leading to a decline in the

octopus population. This overexploitation, largely driven by unsustainable practices, has particularly affected women fishers, reducing their catches and negatively impacting their livelihoods.

The findings on the impact of access restrictions within the KMMPA reverberates with several themes in the broader literature on MPAs, especially on the socio-economic impacts on artisanal fishers. Similar studies, such as those by Sunde & Isaacs (2008) and Grip & Blomqvist (2020), have described how MPAs have been successful in achieving biological conservation objectives but they have also contributed to socio-economic challenges facing fishing communities, including reduced access to fishing grounds and changes in fishery activity patterns. These changes have further resulted in economic hardship for communities that depend heavily on fishing for their livelihoods, as observed in the KMMPA.

In conclusion, the access restrictions within KMMPA and their impacts on local artisanal fishers reflect a common challenge faced by most MPAs globally. This study contributes to the existing body of knowledge by providing comprehensive insights into how these restrictions affect specific communities, emphasizing the need for policies that balance conservation objectives with the rights and livelihoods of local inhabitants. By drawing parallels with the literature, this research not only validates the broader trends observed in MPA impacts but also emphasizes the critical gaps in stakeholder engagement and socio-economic considerations that must be addressed to ensure the equitable and effective management of protected areas.

4.2. Enforcement challenges and fishers distressing encounters with KWS.

This section explores the interactions between fishers and the authorities enforcing MPA regulations. It highlights the nature of conflicts that arise from regulatory measures including enforcement actions such as arrest, fines, and gear confiscation, and how these conflicts influence fishers perceptions of and engagements with MPA management. Such conflicts often escalate tensions and can lead to a breakdown in communication between the community and conservation authorities, undermining the goals of conservation efforts. Artisanal fishers have increasingly found themselves at odds with the conservation authorities, particularly the Kenya Wildlife Service (KWS) guards, who enforce the boundaries of the KMMPA. These conflicts are often marked by

distressing encounters, where fishers face harsh penalties for boundary violations, which they sometimes commit unintentionally due to poorly marked or newly expanded protected areas. Additionally, fishing vessels sometimes accidentally drift into restricted areas due to heavy wind.

For instance, one fisher expressed his deep-rooted frustration after his canoe drifted into a restricted area. He recounted how KWS guards arrested him, confiscated his boat, and burned his fishing equipment, leaving him without his day's catch and a means of livelihood. Another fisher, Bakari(pseudonym), in his mid 30s and is a part-time tour guide from a traditional fishing family who has been fishing for 14 years, described an incident highlighting the gravity of these enforcement measures: "I was arrested and fined heavily last year for accidentally drifting into a restricted zone. My fishing gear was confiscated, and I spent a night in jail. The boundaries are not always clear, especially at sea while the buoys are too far apart to be noticeable." Another fisher, Omar (pseudonym) in his late 50s, shared his frustration about the lack of clarity and fairness by the enforcing entity: "The guards treat us like criminals when our boats slightly cross over into KMMPA. They don't understand that we are just trying to make a living. Sometimes it feels like they are waiting for us to make a mistake." These personal stories highlight the human toll of these conflicts and the urgent need for a more humane approach in enforcement strategies.

These punitive measures result in instant financial loss and contribute to a growing sense of alienation and frustration among the fishers. This resentment is exacerbated by perceptions of unequal treatment, with majority of fishers believing that larger commercial operators such as licensed trawlers and those with better resources manage to evade these strict regulations by bribing the authorities. One fisher highlighted the extensiveness of the implications of these conflicts: "It is not just about the fines or the lost gear, it's about how these actions have made us feel marginalized in our waters. We used to work with conservationists and respected the rules, but now, the majority of us feel like we are being targeted rather than supported." Some fishers have further criticized the uneven application of regulations, noting that some fishers use illegal methods, such as spearguns and ring nets, with apparent impunity since the they have the means and resources to bribe authorities. This has led to a sense of injustice among local artisanal fishers who feel they are unfairly targeted and punished because they lack resources to bribe the

authorities if caught in the wrong. Such incidents fuel a sense of marginalization and disenfranchised among the artisanal fishing community.

In response to these challenges some members of the community have started organizing meetings to discuss their grievances and seek compensation. They are also advocating for more apparent boundary markings and a revision of enforcement methods that consider the realities of artisanal fishing. Additionally, Kopa, a local fishers' association leader, revealed that they have gathered their stories and they planning to present them to the Kwale County Assembly. They want the Members of the County Assembly (MCAs) to see the humane side of these regulations. Kopa states that they are not against conservation but that it needs to be done in a way that does negatively affect their livelihood as well as their cultural heritage. Other fishers shared similar experiences. For example, one noted the financial hardship of having an expired fishing license, which, if not renewed, could lead to an $80 fine an amount higher than his combined two-week earnings. As a result, he sometimes fishes illegally at night without a license to enable him to support his family.

Apart from presenting their petition to the Kwale County Assembly, the fishers have proposed several improvements to the current management practices. These include effective communication on boundary changes, the installation of more clear boundary markers, and more community involvement in conservation decision-making. These changes are likely to lead to more effective conservation outcomes and less conflict. Kopa, a local fishers' association leader, emphasized the value of their knowledge and experience of the sea, stating that if KWS could engage them, it would assist them in preserving the marine life without harming their livelihoods. This highlights the potential for a more collaborative approach that respects the fishers' expertise and knowledge which could lead to more sustainable and mutually beneficial conservation practices.

In conclusion, these conflicts and enforcement measures highlight the need for effective communication and collaboration between conservation authorities and local fishing communities. Participants have called for well-defined boundaries, more transparent regulations, and more involvement in decision-making processes. These conflicts point out the importance of balanced conservation outcomes that consider the socio-economic needs of local artisanal fishing

communities. However, improved stakeholder engagement, transparent communication and enforcement are crucial in resolving these conflicts and enabling a cooperative relationship between artisanal fishers and conservation authorities.

4.3. Non-KMMPA Related Challenges experienced by Artisanal Fishers.

In addition to the impacts of the KMMPA presented in the previous sections, fishers in Kwale County are also facing notable socio-economic and environmental challenges that are affecting their livelihoods independently of the MPA. Economic instability is a major concern for these artisanal fishers. This includes fluctuations in daily catches and fish prices significantly affecting their earnings, increased fuel prices and maintenance costs for fishing equipment for artisanal fishers using and hiring fibre boats. The presence of licensed commercial fisheries and international fishing fleets, such as Chinese trawlers and larger dhows from Pemba in Tanzania, intensifies economic hardships by encroaching into local waters, often leading to decreased catches and income for local artisanal fishers.

Climate change and environmental degradation pose additional challenges. Overfishing depletes key fish populations faster than they can reproduce while coral reef degradation affects the biodiversity essential for supporting fish populations thereby reducing the productivity of traditional fishing grounds. Additionally, climate change leads to rising sea temperatures and extreme weather conditions which is disrupting fish populations and fishing activities. Hassan, a local fisherman, shares his personal experience of the changing nature of fishing. He notes the abrupt seasonal changes in ocean conditions and the low fish catches, which sometimes result in very small or no catch at all. "The nature of fishing has changed over the years," he explains. "More than 15 years ago, we used to catch many fish close to the shore but now there are no fish near the shores. To have a better catch now fisherman requires more advanced vessels to go to the deep seas, mostly beyond KMMPA something that most artisanal fishers cannot afford." This personal account brings to life the challenges faced by the artisanal fishers in Kwale County.

During the Kuzi season from April to July, the rough ocean conditions hinder fishing, especially for fishers with inferior canoes. These seasonal changes lead to declines and variations in fish catches as the southeast monsoon brings stronger winds, higher waves, and rainfall, causing fish to move to deeper waters in search of food thereby impacting the fishers livelihoods. Additionally,

a fisherman who crafts fishing basket traps highlighted the scarcity of suitable trees for making these baskets due to the protection of mangrove trees and the high cost of transporting trees from mainland Shimoni to Mkwiro Island. The depletion of trees is exacerbated by fishermen on the island resorting to burning charcoal to meet their livelihood needs, further contributing to the decline of available resources.

The social structure of fishing communities in Kwale is under significant strain due to the limited availability of alternative employment opportunities. This situation binds many community members to fishing as their sole source of income, a craft that is both traditional and familial handed down through generations and facilitated by the open access to the ocean. Furthermore, educational limitations restrict community members ability to seek alternative livelihoods or to engage effectively with regulatory processes leaving them vulnerable to ongoing socio-economic and environmental changes. The lack of alternatives is worsened by overfishing as fishermen without access to farmland or other alternative livelihood skills continue to exploit diminishing resources. The other challenge cited and observed by the artisanal fisher was that all the nearby communities that have depleted fish along their shore through overfishing have also moved to fish in the small fishing grounds around KMMPA. This lack of alternative livelihoods not only affects the economic stability of the fishing communities but also threatens the social fabric of these communities, which are deeply rooted in the fishing tradition.

The lack of adequate fishing infrastructure was another challenge cited. For instance, there is a lack of rescue boats in case of ocean hazards and lack of sufficient resources to buy advance fishing vessels to access deep waters. Kopa (pseudonym), a local fisher, reported that there is also a new port being built in Shimoni because the government wants to decongest the main harbor in Kenya in Kilindini Harbor in Mombasa County by having all commercial fishing vessels to dock at the new Shimoni port. The implication of the new port is that the small fishing canoes must move away from the channels to make way the commercials vessels further restricting access to fishing ground for the artisanal fishermen. Additionally, the Kenya Navy Base in Shimoni, have also restricted fishing vessels from fishing in waters adjacent to their base further restricting the artisanal fishers area of operations. The challenges extend to the use of traditional fishing basket traps, which require floaters to mark their position because most fishers do not use GPS. However, these floaters often get cut by the boats and canoes operating in these waters, causing fishers to

lose track of their baskets. This problem not only reflects the technical challenges faced by artisanal fishers but also emphasizes the broader infrastructural and technological gaps that hinder efficient and sustainable fishing practices around KMMPA.

Fishers in Kwale also face governance-related challenges, including complicated licensing procedures and inconsistent enforcement of fishing regulations. Corruption within regulatory bodies leads to uneven enforcement, which can disadvantage those without the means to navigate or circumvent these challenges. These governance issues complicate the already difficult circumstances under which local fishers operate, further complicating their ability to maintain sustainable livelihoods. Fishers complained that if they are caught, they risk being arrested and fined about 80 USD, yet most of them make less than 10 USD per day, pushing them to fish illegally at night to support their families. The fishers lament that many government authorities are pressing for fishing licenses and permits, namely, the state Department of Fisheries, Coast Guard, Kenya Revenue Authority, and Beach Management Units. These numerous regulations, licenses, and permits add layers of bureaucracy that impose financial and operational burdens on artisanal fishers.

These combined challenges - economic, environmental, social, infrastructural, and governance-related - not only compound the hardships Kwale's fishing communities face but also threaten the sustainability of their livelihoods and the region's environmental health.

4.4. Community Exclusion or Involvement in KMMPA Management

In the case of the KMMPA local fishers have expressed concerns about their involvement in its management. They believe that effective management requires input from those who are directly impacted. According to Daud (pseudonym), "a KMMPA which is co-owned by both government and the local community would encourage more community participation." He also suggests a return to sustainable indigenous fishing practices, like long lines and basket traps, which allow for catching larger fish while leaving smaller ones behind. Daud highlights unaddressed community needs, such as access to fresh drinking water, as projects that should be supported by KWS instead of building social halls. He criticizes the allocation of KMMPA's tourism revenues, which do not

benefit the local fishing communities. Despite observing no specific gender impacts, he notes that "all fishers, men and women alike, are disgruntled" due to KMMPA's policies.

Juma, a fisher and hotel owner, also noted issues with public participation in decision-making processes, criticizing the KWS for their top-down approach and non-inclusive public participation efforts. He mentioned that KWS organizes public participation meetings where a few known and usual faces are invited repeatedly. He emphasizes the importance of including diverse community voices, particularly women, in these processes. Other fishers also noted that small individuals often attend public meetings that may only partially represent the broader community's concerns. This lack of adequate public participation contributes to a feeling of exclusion among the local fishers. Juma and most artisanal fishers interviewed believe that the government and KWS need to address the issues raised by their fishing community effectively. Juma says his advocacy efforts have even led to his arrest, as he has been labelled a "troublemaker" by local authorities. Despite this, he continues fighting for his community's inclusion in KMMPA decision-making processes and equitable resource distribution.

Many artisanal fishers interviewed expressed a loss of community trust and support for KMMPA due to unaddressed complaints about park boundary expansion, lack of compensation for human-wildlife conflicts, and illegal fishing methods. They primarily argued that KMMPA has caused problems for the fishing villages because the expansion and restriction have limited their fishing grounds, significantly affecting their livelihoods. One fisher suggests that KWS creates awareness about ecological conservation benefits, which could address some of the community's concerns. Lali, a seasoned fisherman, criticized the lack of involvement of local fishing communities in decisions regarding KMMPA, arguing that inclusion would prevent illegal fishing and ensure more effective conservation. Lali stated, "If local fishing communities were involved in KMMPA, there would be no cases of rogue community members bribing KWS officials to fish illegally." He, like many fishers, believes that comprehensive public participation and equitable revenue sharing could mitigate some of the socio-economic impacts on artisanal fishers.

Another fisherman, Makame (pseudonym), expressed frustration that KMMPA's conservation efforts seem to benefit the government and eco-tourism businesses more than the local fishermen. The expansion of KMMPA and the decline in fish stocks have significantly reduced his income,

affected his family's livelihood, and limited educational opportunities for his children. He advocates for a more balanced approach to conservation that considers the needs and challenges of local fishers. He points out the ineffectiveness of development projects purportedly aimed at helping fishermen, which often provide equipment that fails to meet their actual needs. This issue, he believes, is due to the need for more local community involvement and participation, which would help identify the real needs and concerns of the artisanal community.

On the other hand, Hadija, a female fisher, provides a valuable gender-specific perspective on local involvement in MPA management. Her experience highlights the unique challenges and contributions of women in fishing communities. Despite having health issues, Hadija remains greatly involved in the fishing industry, highlighting the importance of considering the needs and roles of female fishers in managing MPAs. Her narrative further showcases women burden in balancing fishing activities with domestic responsibilities. Her fishing activities include octopus fishing and cowrie shell collection, which are shore-based. Additionally, she advocates for inclusive conservation strategies that account for the contributions and needs of female fishers. Despite being primarily involved in shore-based activities, Hadija's family, including her husband and sons, continue to experience hardships due to KMMPA restrictions, impacting their income and livelihood. She further voiced concerns over the unilateral expansion of KMMPA without consulting the community. These experiences highlight the importance of gender-sensitive conservation approaches as well as local involvement in decision-making.

In conclusion, the artisanal fishers expressed the importance of incorporating the community in MPA management to achieve fair and effective conservation outcomes. They further advocated for a co-management approach, participatory decision-making and sustainable practices that reflect their socio-economic realities. The emphasis on transparent and inclusive decision-making processes was a persistent theme as well as the necessity for conservation efforts to be responsive to the needs of local communities.

4.4. Perceptions of MPA Benefits and Challenges.

Whereas MPAs support fish populations and protect habitats within the marine, they may also restrict access to traditional fishing grounds disrupting local economies. It is worth noting the

importance of understanding how local communities perceive these benefits and challenges in order to develop equitable and effective conservation strategies. The empirical literature on MPAs has further revealed a double-sided narrative. On one hand, MPAs are celebrated for their ecological benefits such as biodiversity protection and habitat restoration. On the other hand, they can negatively affect the livelihood of local fishers by restricting their access to traditional fishing grounds and altering community dynamics (Jentoft et al., 2007). This theme will investigate how artisanal fishers view the KMMPA by examining their perceptions of its advantages and challenges in their everyday lives as well as its socio-economic implications. The findings align with the existing literature on the socio-economic impacts of MPAs hence contributing to the ongoing discussions on sustainable marine conservation.

4.4.1. Perceptions of Benefits of KMMPA from the Participants

Research has continually shown that MPAs have significantly contributed to the restoration of fish stocks and the preservation of marine habitats providing long-term benefits to both marine ecosystem and local communities whose livelihood depends on these resources. For instance, the establishment of no-take zones within MPAs has been associated with increased biomass and biodiversity which may spill over to adjacent areas thereby increasing fishery yields outside the protected zones (Edgar et al., 2014). The socio-economic benefits of MPAs as noted by O'Leary et al. (2017) such as increased tourism have ripple effect on improving locals' economies by creating alternative source of income. These findings highlight the double benefits of MPAs in promoting ecological sustainability and socioeconomic outcomes emphasizing the importance of their strategic placement and management to maximize their positive impacts on both marine ecosystems and local communities.

The artisanal fishers provided varied narratives on the perceived benefits of the KMMPA. Their perspectives described how the protected area have influenced their livelihoods as well as their community dynamics. Hassan, a seasoned artisanal fisherman, shared a more elaborated perspective of KMMPA benefits, stating, "Despite my frustrations, I recognize that the marine protected area assists in regulating fish stocks. It also serves as a refuge, where fish can thrive without the pressure of constant fishing. Although, it limits us, these regulations can possibly benefit fishers in the long run by enabling replenishment of fish population." Equally, Juma, a part-

time fisherman who also owns a small hotel, expressed that he has indirectly benefited from the KMMPA through tourism. He pointed out that the protected coral reefs within the KMMPA serve as ideal breeding grounds for fish, some of which move into adjacent fishing areas. This suggests a potential spillover effect where the conservation efforts within the KMMPA positively impact surrounding fishing grounds, supporting both fisheries and tourism.

Similarly, Mohammed, a fisherman and tour guide, highlighted that the KMMPA benefits him through tourism. As a part time boat operator, he earns income by guiding tourists to the marine park. While the direct benefits from the Kenya Wildlife Service (KWS) are limited, his involvement in tourism provides a viable livelihood alternative. Moreover, he acknowledged the overall improvement in marine ecosystem health around the KMMPA, which promises future benefits through enhanced breeding grounds for fish. One artisanal fisher in his late 20s, who engages in both fishing and farming, viewed the KMMPA as a beneficial project generating government revenue and contributing to urbanization in Shimoni Town and Wasini Island. He appreciated that businesses and hotels purchase his agricultural produce, which supports his livelihood, particularly when fishing is less fruitful. He also acknowledged the potential benefits of KMMPA for local fisheries, with some big fish escaping from the protected area into adjacent fishing grounds to suggest a spillover effect. Lali (pseudonym), a who focuses on snorkelling and fishing for octopus using a spear, expressed that he sees potential in KMMPA, which serves as a sanctuary for fish during the off-season. He suggested that a strategic arrangement allowing limited fishing in the protected area could benefit both fishers and the government by balancing conservation with livelihood needs.

The only two female fishers interviewed, Hadija and Sofia, highlighted the potential ecological benefits of KMMPA, especially in terms of preserving vital marine habitats like mangroves. They noted that these habitats are crucial for species like octopus, which form a significant part of their families' livelihoods. The protected status of these areas can thus indirectly support the well-being of the local fishing community, particularly the women fishers who rely on the mangrove ecosystem. Additionally, Omar, a long-time fisherman, recognized the KMMPA's contribution to tourism and hospitality businesses, which indirectly support the local economy. Even though his personal benefits from the protected area are limited, he noted that the KMMPA creates jobs and attracts visitors, which can positively impact related sectors.

These perceptions illustrate that while direct benefits from KMMPA for artisanal fishers may be limited, the area can offer indirect advantages through tourism, potential spillover effects, and supporting urbanization and local businesses. The participants' experiences reflect the multidimensional nature of marine conservation and its impact on their local livelihoods.

4.4.2. Perceptions of Challenges of KMMPA from the Participants

Artisanal fishers in Shimoni and Mkwiro areas have expressed a number of concerns about the Kisite-Mpunguti Marine Protected Area (KMMPA), which generally paint a picture of a community wrestling with both direct and indirect impacts of conservation measures. For majority of fishers, the KMMPA has resulted in reduced access to traditional fishing grounds, resulting in reduced catches and an increase in operational difficulties. The expanding boundaries have pushed the artisanal fishers out of areas rich in fish resources, forcing them to operate in waters that have been overfished or attempt to navigate around the KMMPA, which is both time and energy consuming as their fishing canoes are inferior. This sentiment is echoed by Makame, who argues that "The boundaries are not just physical, but they are also barriers to our livelihood. Lack of transparency and the continuous expansion make it difficult for us to plan and sustain our operations."

The challenges extend beyond just access to resources. Mohammed, a fisherman and tour guide, highlighted the socio-economic impact, "The strict regulations and the expansion of KMMPA without proper consultation have marginalized our community. We are viewed as obstacles to conservation rather than stakeholders." This feeling of exclusion is a common trend in the narratives of the community, who feel that their livelihoods and traditional practices have been ignored in the KMMPA decision-making processes. The economic implications of these restrictions on local community are significant, as majority of fishermen noted that decrease in catch due to KMMPA policies has affected their income as well as the local economy. Most fishers are struggling to make ends meet and alternative livelihoods are insufficient to replace fishing.

Three different fishers argued that expansion of the KMMPA boundaries without involving artisanal fishers has led to a drastic reduction in accessible fishing areas, pushing the fish further into the protected zone and out of reach for traditional fishing. This has not only reduced fish

availability but also increased the use of less sustainable fishing methods out of necessity. Because of the fishermen want to get their usual daily catch they resort to overfishing, use of destructive fishing methods and even bribing KWS guards to be allowed to fish illegally inside the KMMPA at night. Additionally, fishers from overfished communal shores migrate to the limited areas still available to fishers in Shimoni and Mkwiro intensifying resource depletion and fuelling conflicts among different fishing groups. One fisher highlighted on historical grievances and the changes in fishing practices forced by the KMMPA regulations. "We were promised that the park would help us by preserving fish stocks but instead, it has restricted our access so much that we struggle to catch enough to support our families," he remarked. This sentiment reflects a deep-seated mistrust between the KMMPA management, and the local fishing communities exacerbated by what they feel is a breach of initial promises made by the government.

These perspectives paint a picture of a community grappling with the changes due to the establishment and expansion of the KMMPA. The challenges expressed by the participants emphasize the need for a more balanced approach that synchronizes conservation efforts with the economic and cultural dynamics of the local communities that depend on fishing for their survival. The recurring themes of restricted access, decreased fish stocks and a lack of community engagement in management decisions, call for a re-evaluation of how MPAs are implemented and governed. This feedback from the community is vital in assessing the overall impact of KMMPA and exploring ways to enhance its management for the benefit of both the environment and the affected local artisanal community.

4.5. Coping strategies employed by fishers in response to KMMPA impacts.

As artisanal fishers in Mkwiro Island and Shimoni grapple with these challenges imposed by the KMMPA, they have adopted different coping strategies and alternative livelihoods to sustain themselves. This section explores the community's adjustments to the conservation measures, environmental and regulatory changes introduced by the KMMPA. Hassan, an experienced fisherman, emphasizes a shift towards using traditional fishing methods that are more sustainable like the use of long lines and basket traps, since these techniques have proven to only catch big fish and leave smaller ones. Despite the hardships caused by KMMPA restrictions, he advocates

for collaborative management between the government and the local community as it may lead to a more equitable and effective conservation outcome.

Juma has diversified his source of income by leveraging on his part-time fishing with tourism, running a small hotel that caters to individuals visiting KMMPA. This two-sided approach provides him with a stable income and positions him as a stakeholder in the local fishing and tourism industries. However, he advocates for the need for clear and visible demarcation of KMMPA boundaries to reduce conflicts and enable fishers to comply with the regulations. The narrative of Mohamed who has transitioned from fishing to a tour guide and boat operator, also illustrates a notable shift in livelihood strategy. This change was prompted by the increasing restrictions and the perceived over-regulation by the KWS, which has made traditional fishing less feasible. His involvement in tourism allows him to benefit indirectly from the conservation measures, however he noted that the broader community continues to grapple with these changes.

The challenges faced by artisanal fishers are severe. One fisherman's story highlights the harsh reality of night fishing and the use of illegal methods due to the rigid enforcement of KMMPA regulations. Lali's involvement in local conservation projects such as the Shimoni Slave Cave Project and mangrove restoration efforts, offers a glimpse of hope. Although these initiatives contribute to environmental preservation, they also provide an alternative source of income demonstrating a proactive approach to balancing conservation efforts with economic needs of the local community.

With decades of fishing experience, Omar has experienced the impact of KMMPA's restrictions on his livelihood. However, he has adapted by acquiring inferior canoes that limit his range but allow him to continue fishing within the constraints set by KMMPA and night-time fishing which he finds more productive despite the risk of breaching KMMPA boundaries. This adaptation highlights the resilience required to sustain fishers' livelihood and the desperate measures they adopt under these rigid regulations. Another fisher adapting mechanism to the changing economic reality includes returning to fishing after losing his security guard job due to the COVID-19 pandemic. He leverages on his basket trap-making expertise and the use of longline fishing skills to navigate the limited access to traditional fishing grounds. These findings elaborate a trend of fishers returning to traditional fishing methods that are more sustainable and feasible within the

restricted areas, suggesting a reconnection with traditional practices as a form of resistance and adaptation to the imposed changes.

Daud has adopted a community-focused approach to adjust to life under KMMPA regulations. He has incorporated all his family members in low-tide shell collection and sale of crafts fishing baskets, creating a small-scale family enterprise replacing the reduced fishing opportunities. This initiative highlights how families are diversifying their source of income within the context of conservation constraints. Another fishers strategy involves balancing fishing with farming, taking advantage of his access to communal land to cultivate crops that provide an additional source of income when fishing yields are low. This integration of agriculture and fishing is a realistic approach to managing the economic uncertainties as a result of seasonal changes and conservation-related restrictions.

Mzee Sharif (pseudonym) represents how older fishers perceive the impact of KMMPA. He focuses on fishers realities before establishment of KMMPA and discusses the Mkwiro community's historical resistance to the KMMPA. His narrative includes a critical view of the management practices and the lack of community involvement in decision-making processes, which he believes could mitigate the adverse effects of the KMMPA on local fishers. Mzee Bakari, another veteran fisher echoes similar sentiments. He laments the drastic increase in the number of basket traps that are now needed to maintain sustainable catches, in the old days he would use few traps and caught more fish now he must use many traps and still catch less fish. He also criticizes the unilateral decisions that have favoured conservation at the expense of local livelihoods. His story underscores the need for a management approach that respects the traditional knowledge and practices of the community.

Hadija female fisher, from her perspective as a female fisher, highlights the gender-specific challenges and the indirect benefits of the KMMPA. While not directly affected by fishing restrictions, she faces difficulties due to the decline in octopus populations and increased regulation. Her involvement in sustainable octopus fishing and seaweed cultivation points to a gendered dimension in the adaptive strategies where women exploit niche areas less impacted by heavy regulation.

Nearly all fishers interviewed discussed the broader implications of KMMPA expansion, including increased operational costs and the shift to tourism, farming, and trading as a complementary source of income. Their experience reflects a community coping with the need to find new ways to sustain their livelihoods in the face of the growing pressures from conservation and tourism. This exploration of adaptive strategies and alternative livelihoods stresses the diverse ways in which the Shimoni and Mkwiro fishing communities are navigating the socio-economic impacts of conservation measures reflecting the resilience of artisanal fishers in the face of environmental and regulatory changes.

CHAPTER FIVE: ANALYSIS OF EMERGING THEMES.

5. Introduction

This chapter focuses into the interpretation and discussion of the thematic patterns that have emerged from the empirical findings collected through field research within the Kisite Mpunguti Marine Protected Area (KMMPA). It aims to bridge the empirical findings with the literature review and theoretical conceptions discussed in previous chapters, notably integrating concepts from political ecology and participatory development approaches. The primary focus of this analysis is to dissect the complex interaction between marine conservation policies and their socio-economic impacts on artisanal fishers in Shimoni and Mkwiro Island. The themes identified not only reflect the challenges imposed by the KMMPA but also the coping mechanisms and adaptive strategies developed by the local fishing communities in response to these challenges. Each theme is analysed in the context of broader socio-political, economic and environmental dynamics showing how local conditions and ecological policies converge to shape the livelihoods of these communities.

This analysis critically engages with the empirical findings to provide a comprehensive understanding of how access restrictions, conflicts with conservation authorities, and community involvement in MPA management affect the socio-economic conditions of artisanal fishing communities. And how these local communities adapt and respond in the face of challenges and opportunities by provided by KMMPA. By unpacking these themes, the study aligns empirical findings with literature review and theoretical frameworks offering detailed perspectives that could inform more inclusive and effective conservation practices. Through this analysis the chapter contributes to the overarching goal of the thesis which is to show the delicate balance required between marine conservation efforts and the socio-economic well-being of dependent local communities.

5.1. Impact of Access Restrictions

Access restriction within MPAs like KMMPA have significant implication on the livelihoods of artisanal fishers. The restriction is imposed with the aim conserving biodiversity and to provide

ecosystem services such as fishing and tourism. But the often cause unintended socioeconomic consequences on the local communities whose livelihood are heavily dependant on these marine resources. The results of the field work conducted in KMMPA indicates that the imposition of access restriction to the traditional fishing grounds have reshaped the fishing practices, economic stability and socio-cultural practices of the local fishers. This theme will explore how the empirical findings related to access restrictions relates with theoretical perspectives from political ecology and participatory development approaches.

The unilaterally expanded boundaries of the KMMPA have increasingly pushed fishers away from their traditional fishing grounds, forcing them to travel further into the deep waters and invest in more modern and superior vessels that many of them can not afford and thereby escalating their operational costs for those of them that can afford or hire. Fishers like Hassan expressed frustration over the continual expansion of KMMPA boundaries by KWS without community involvement. The fishers fault the continued expansion as leading to reduction in daily fish catch and increased economic strain on their livelihoods. Women like Hadija are particularly affected as they face competition and unsustainable destructive fishing practices from men pushed out of their traditional fishing areas.

Political ecology provides a useful lens to examine how the imposition of access restrictions in MPAs affects local communities. According to Robbin (2012) political ecology considers the effects of power structures on environmental policies and practices. In the context of KMMPA, the enforcement of access restrictions reflects a power dynamic where state and global conservation interests override local and traditional practices of artisanal fisher around the MPA. These restrictions are usually justified by ecological benefits such as increased biodiversity and biomass conservation as noted by Strain et al. (2018) and Edgar et al. (2014) whose studies emphasize the ecological successes of well-managed MPAs. Whereas the local socio-economic consequences such as displacement, disempowerment and economic decline indicates a critical oversight in these conservation outcomes (Diop & Scholte 2016)

The political ecology approach emphasizes the importance of considering multiple scales of power and the historical and socio-economic contexts that shape resource management policies. This is particularly important in MPAs where external pressures, such as international conservation goals

and local socio - economic needs, must be balanced. Robbin (2012) further analysis suggests that the interaction between economic forces, state policies, and local traditions can often redistribute control over communal resources, sometimes to the detriment of local communities. As empirical findings indicate that the unilateral continuous expansion of the KMMPA without locals artisanal fishers involvement has shifted the control over local resources such as traditional fishing grounds to government through KWS and global conservation regimes. This aligns with Robbins (2012) observation on how state policies and global conservation targets can redistribute resource control often at the expense local community livelihoods. This dynamic calls for a political ecology approach that addresses both ecological management but also integrates the socio-economic dimensions and power structures influencing resource governance. This approach supports crafting rules that are both ecologically sound and socially just, ensuring that MPAs do not just conserve biodiversity but also supports the social and economic well-being of the local communities they impact (Robbin, 2012)

The empirical findings support the theory by indicating that without the active involvement of local communities in the decision-making process conservation measures can lead to adverse socioeconomic outcomes on local communities. For instance, the unilateral and continuous decisions to expand KMMPA boundaries reflect a top-down approach in conservation, which participatory development approaches and political ecology critique as ineffectual and potentially harmful to local livelihoods. Studies conducted by Gillingham (2001) and Adams (2001) both advocates for the importance of involving local communities in environmental governance, which is also echoed in my findings. The empirical data suggest that the lack of participatory mechanisms in KMMPA management has led to dissatisfaction and perceived injustices among local artisanal fishers. By integrating these perspectives from the field with participatory development theories, it becomes more evident that inclusive governance models could lessen some of the adverse conservation outcomes experienced by these local communities. This approach would in turn improve compliance with sustainability of conservation efforts and support the socio-economic well-being of the affected communities.

The implications of these restrictions extend beyond economic impacts, they also affect the social structure and cultural practices of the fishing communities. Interviews with local fishers revealed

that the traditional knowledge and fishing techniques passed down through generations are becoming less effective or even obsolete as fishers are forced out of their traditional fishing grounds to venture into unfamiliar and deeper waters. This endangers their lives, particularly fishermen who can not afford more advanced and suited boat and are forced to venture in deep waters using canoes and outrigger. It also disrupts the transmission of indigenous fishing knowledge, which has historically been part to the community's identity and survival. This aligns with studies that critique of conservation initiatives that prioritize environmental objectives over socio-economic considerations, often leading to the disempowerment, displacement, and erosion social cultural structures of local communities (Noe & Kangalawe, 2015; Adams & Hutton, 2007; ICSF, 2013; ICSF, 2014).

Within the lens of participatory development approaches Adams (2001) highlights the importance of recognizing and valuing individual and local perspectives in the pursuit of sustainable development. In the specific case of KMMPA’s the utilization of indigenous knowledge passed down through generations is very critical. This knowledge includes information about seasonal variations, sustainable fishing gears, migratory patterns, and the behaviour of marine species. Integrating this knowledge with scientific research can enhance the effectiveness of conservation outcomes making MPAs not just parks and reserves but active sites of cultural and ecological synthesis (Peer et al., 2022). Briggs (2005) further emphasizes that indigenous knowledge is inherently dynamic, continuously evolving in response to environmental and community changes. This adaptability is important for the management of MPAs where ecological and social conditions are frequently experiencing changes. Indigenous knowledge systems ability to adapt shows a deep understanding of local ecosystems which in turn enables communities to respond to ecological changes effectively. These changes include shifts in fish populations, changes in water quality, or climatic variations (Briggs, 2005)

The challenges articulated by the artisanal fishers in relation to existence of KMMPA such as displacement, increased travel and costs, and reduced fish catches proves that there exist critical gaps in current MPA governance structures. These findings suggest that MPAs need to be managed not only for ecological contribution but also as socio-economic features that require balanced and inclusive governance approaches. The findings challenge the 'Tragedy of the Commons' narrative

by showing that communal resource management when inclusive and participatory can be successful (Robbins, 2012).

In conclusion, the analysis of the impact of access restrictions within the KMMPA through framework of political ecology reveals a complex relationship between conservation goals and socio-economic outcomes. While MPAs support ecological functions, their success should also be measured by their impact on human communities. The empirical findings from KMMPA shows that a more balanced approach that does not prioritize ecological benefits at the expense of local livelihoods is needed. When local experiences and knowledge is integrated into MPA management then conservation efforts can achieve both ecological integrity and socio-economic justice, leading to more sustainable and equitable outcomes.

5.2. Conflict with Conservation Authorities

This theme addresses the tense interactions between artisanal fishers and the conservation authorities in this case the KWS within the KMMPA. In MPAs the enforcement of conservation regulation can sometimes result in unintended conflicts between conservation authorities and local communities. This analysis explores how regulatory and enforcement actions employed at KMMPA such as fines, gear confiscation, and arrest, contribute to and exacerbate conflicts possibly undermining the conservation goals they aim to achieve.

These conflicts within KMMPA as reported, arise because of regulations that fishers sometimes violate unintentionally due to poorly marked or newly expanded boundaries of the MPA. For example, a local fisherman recounted a distressing encounter with KWS guards when his canoe accidentally drifted into the protected area due to strong winds leading to his arrest, confiscation of his fishing vessel, burning of his fishing gears and taking away his days catch, leaving him without his day's catch and a means of livelihood. Another fisher Bakari shared a similar experience, he recounted "I was arrested and fined heavily last year for accidentally drifting into a restricted zone. My fishing gear was confiscated, and I spent a night in jail. The boundaries are not always clear, especially at sea, and the buoys are too far apart to be noticeable all the time." Another fisher Omar also shared similar encounters emphasizing on the absence of clear boundary markers and the harsh penalties mated for minor violations. These encounters illustrate the

profound impact on these enforcement action on the livelihood and perception of fairness and justice within the conservation efforts of KMMPA.

Applying the political ecology framework reveals that these conflicts are not merely operational failures on part of the government through KWS but are indicative of deeper issues related to governance and power dynamics. Robbins (2012) describes on how environmental management and conservation efforts can unintentionally lead to conflicts and exacerbate social inequalities. The argument is when state authorities, private firms, or social elites take control of natural resources through enclosure by restricting access or by appropriation it can lead to scarcity of these resources for others like local communities. The scarcity caused by resource enclosure often leads to increased competition among different social groups in areas outside the enclosure and this accelerate conflicts with enforcement authorities or different social groups. The "socialization" of environmental problems occurs when dominant groups such as government and global conservation regimes leverage conservation measures to secure greater control over resources often at the expense of marginalized communities. This often done in a way that serves the interests of dominant groups potentially at the expense of smaller local groups. This control is "socialized" in that it becomes part of the social structure thereby embedding inequalities in the access to resources (Robbins, 2012 pg. 22)

Literature on community involvement in MPA management points out to the importance of incorporating local voices in conservation efforts (Jones et al., 2013; Gutiérrez et al., 2011). Studies suggest that where local communities are engaged there is a higher level of compliance and conservation outcomes tend to be more successful. Conversely, exclusion of local communities from MPA conservation process leads to resistance and non-compliance, as seen in the KMMPA (Magotra et al., 2020; Ban et al., 2019). Governance in MPAs is not merely about regulatory and enforcement frameworks but also includes the mechanisms by which local communities, stakeholders, and authorities interact to manage and conserve marine resources. These interactions have proven important for collective management and conservation of marine resources (Jones et al., 2013). Top-down governance models often face challenges in enforcement due to a lack of local involvement which can be mitigated in community-led models that utilize local networks for more effective enforcement mechanisms (Christie et al., 2017). The top-down

enforcement approaches observed in KMMPA have led to significant community pushback and hindered conservation goals.

The conflicts have profound socio-economic impacts on the artisanal fishers. The punitive nature of enforcement leads to immediate financial losses from confiscated fishing vessel, burnt fishing gears and fines further jeopardizing the livelihoods of this already vulnerable and marginalized communities. The punitive measures enforced further creates a climate of fear and resentment towards conservation authority undermining the possibilities of cooperative conservation efforts. The empirical findings suggest that the frequent conflicts and the nature of enforcement actions are indicators of governance failures which political ecology would suggest need to be addressed through more inclusive and equitable conservation strategy. This analysis suggests that involving local communities in the decision-making processes and recognizing their traditional rights and knowledge could mitigate conflicts. This approach could transform conservation practices into more cooperative and less adversarial systems supporting both ecological and social outcomes.

In conclusion this analysis combines the empirical findings with theoretical contribution to argue that effective conservation cannot be achieved through enforcement alone but requires the integration of social justice and equity into conservation practices. The conflicts described not only hinder conservation goals but also perpetuate social inequalities hence the need for a shift towards more participatory governance models that recognize and address the underlying socio-economic dynamics. Adopting a more empathetic and inclusive approach to conservation enforcement can help bridge the gap between conservation goals and local fishing community needs resulting to more effective and equitable outcomes.

5.3. Community Involvement in MPA Management

Local community involvement is an important component for implementing successful conservation outcomes within MPAs. By engaging local stakeholders, conservation authorities can harness traditional knowledge as this will foster a sense of ownership from the local community, which leads to more sustainable practices and improved relations between communities and conservation authorities. Community concerns often arise when authorities make unilateral decisions without sufficient consultation from local communities who are often affected by this

very decision creating desires for co-management or resulting in noncompliance with regulations among local populations.

In the KMMPA, local fishers have expressed concerns about their involvement or lack of it in its management. They assert that effective management must include input from those directly impacted. For instance, Daud, an experienced fisherman, advocates for a co-management model that advocates greater community participation and calls for a return to sustainable indigenous fishing practices. In his narrative he also highlights community needs that are overlooked, such as access to fresh drinking water instead of building social hall a project that was undertaken without due consideration of the local community actual needs. Juma, a fisherman and hotel owner also criticize the KWS for their top-down approach and the lack of inclusive public participation. He noted that KWS meetings often involve only a few familiar faces excluding broader community representation including women.

Many fishers reported a loss of trust and support for the KMMPA citing unaddressed grievances such as KMMPA boundary expansions and lack of compensation for human-wildlife conflicts. They argued that these issues impact their livelihoods by restricting access to traditional fishing grounds. Lali, a seasoned fisherman, pointed out that including local fishing communities in decision-making could even prevent illegal fishing and enhance conservation efforts. These narratives of exclusion contribute to a sense of marginalization among local fishers who feel their voices and concerns are not adequately considered in decision-making processes related to the KMMPA.

The political ecology perspective indicates that the management of natural resources like those within KMMPA directly impacts local artisanal communities' rights and livelihoods. Robbin (2012) criticizes conventional management approaches that ignore the complex socio-economic dynamics and power structures inherent in resource governance. Conservation efforts are often influenced by and reproduce existing power inequalities thereby affecting marginalized communities disproportionately. The conflicts between fishers and conservation authorities highlighted in the findings are manifestations of broader power struggles within resource management and these struggles often stem from top-down governance approaches that fail to adequately involve or consider the needs of local communities (Robin, 2012)

Building on political ecology, participatory development approaches emphasize the importance of integrating local community perspectives in conservation efforts. This approach is supported by the literature, which suggests that MPAs managed with active community participation not only achieve better ecological outcomes but also support the resilience and economic stability of local communities (Gutiérrez et al., 2011; Ban et al., 2017). Studies have shown that community-led governance models in MPAs foster greater compliance and stewardship, leading to more successful conservation outcomes. This aligns with the empirical findings where fishers expressed a desire for more significant involvement in MPA management (Ban et al., 2017; Gutiérrez et al., 2011).

Despite its advantages the implementation of participatory development approaches is not without challenges. As noted by Gillingham (2001) community heterogeneity and the risk of mismatched organizational structures can complicate participatory processes. Communities are often diverse with varied interests and power dynamics making it difficult to reach consensus, as various groups within the community may have conflicting goals or expectations about how resources should be managed. Furthermore, imposing external management frameworks without aligning them with existing social structures within the community can lead to non-compliance and conflict. To handle these challenges, it is important to have a flexible approach to conservation management. This means creating rules and structures that are adaptable and can be adjusted to fit the local community social and cultural context. It involves respecting and incorporating local leadership and customs into the management plans to ensure that the community feels valued and engaged in the conservation process (Gillingham, 2001)

The inclusion of participatory development approaches in MPA management is advocated to ensure that conservation efforts are culturally sensitive and ecologically effective. These approaches encourage the use of indigenous knowledge which includes detailed information about local ecosystems, sustainable fishing gears, and migratory patterns of marine species. Such indigenous knowledge when combined with scientific research improves the effectiveness of conservation outcomes, making MPAs not just parks and reserves but active sites of cultural and ecological blend (Peer et al., 2022). While the inclusion of indigenous knowledge in MPA management is advocated to ensure culturally sensitive and ecologically effective conservation outcomes, Briggs (2005) warns of challenges that should be addressed. On such challenge is

romanticization of indigenous practices, where such knowledge is idealized without critical evaluation of its applicability or effectiveness in contemporary contexts. Many fishers advocated in KMMPA for the use of traditional basket traps used by their forefather as it does not catch small fishes. But it also evident that the raw material for making this basket is no longer available due to environmental degradation and deforestation. Besides, many fishermen reported to losing their baskets since the lack the use of GPS technology to mark the location of the traps, and the floaters they use as markers are often cut by vessels sailing in these very waters.

In conclusion, the success of MPAs like the KMMPA depends on the effective integration of community involvement in every aspect of their management and implementation. By promoting a participatory approach conservation effort can successfully meet both ecological goals and socio-economic needs, leading to sustainable outcomes that benefit both the environment and the local communities. This approach not only makes conservation efforts more widely accepted and legitimate but also makes the marine ecosystems resilient and more sustainable.

5.4. Adaptive Strategies and Alternative Livelihood

In the KMMPA artisanal fishers have found themselves in the crossroads of livelihood and conservation practices. This theme will highlight the adaptive strategies and coping strategies developed by the local community to respond and thrive in the face of constraints and opportunities provided by the KMMPA. Understanding these adaptations is vital for reasons such as assessing the socio-economic impacts of the KMMPA, fostering sustainable community-driven conservation practices and to understand how these adaptations sustain the livelihoods of the locals and also how they impact the local ecosystem. These adaptive strategies and alternative livelihoods highlight the resilience of local communities and their capacity to navigate the socio-economic impacts of conservation policies. It is evident from the empirical findings that these communities are not just passive recipients of conservation policies but active participants in shaping their livelihoods amidst these changes. The findings bring to light the individual cases such as those of Hassan, Juma, and Mohamed, each highlighting distinct approaches to adaptation as well as community-wide strategies that reflect communal trends and collective efforts.

Hassan, an experienced fisherman has shifted toward more sustainable fishing methods such as using long lines and basket traps which are designed to catch larger fish while sparing juveniles, thus promoting sustainable fish populations. This strategic shift underscores his commitment to ecological sustainability within the constraints of KMMPA regulations. Beyond his personal adaptations, Hassan is a strong advocate for collaborative management approaches between the government and local fishing communities. He believes that cooperation could lead to more equitable and effective conservation outcomes arguing that integrating indigenous knowledge and needs of local fishers with regulatory frameworks can enhance both compliance and conservation success. Juma another part time fisher has diversified his livelihood option by combining his fishing activities with tourism by running a small hotel for visitors to the KMMPA. This adaptation reflects an emerging trend pivoting to tourism, which provides a complementary income stream while still maintaining ties to his fishing roots.

A case of significant livelihood transition is that of Mohamed has moved from traditional fishing to becoming a tour guide and boat operator, a shift he said was driven by the increasing restrictions and what he perceives as over-regulation by the authorities overseeing KMMPA. His new role allows him to benefit indirectly from the conservation measures that once threatened his fishing livelihood. This transition highlights the broader community implications of these regulatory changes, illustrating a trend where community members who are able to seek alternative livelihoods that align more closely with the new regulatory environment.

Across the community strategies such as night fishing and the occasional use of illegal methods have emerged as responses to the harsh enforcement of conservation regulations. These measures while not ideal shows the desperate conditions under which some community members operate. Empirical findings also show involvement some fishers in local conservation projects, such as the Shimoni Slave Cave Project and mangrove restoration efforts provides both environmental benefits and alternative sources of income. Another notable coping strategy is the integration of fishing with agriculture as seen in families who leverage communal land to cultivate crops thus providing a supplementary income during low fishing yields. But this is only applicable to community members who own land or have access to farmlands particularly those in Shimoni.

The adaptive strategies employed by artisanal fishers within the KMMPA are shaped by the complex interaction of governance structures, socio-economic factors, and local community dynamics at play. Through the lens of political ecology these adaptations and coping strategies used by local communities are not just responses to KMMPA regulations but also in response to the power structures and rules that determine who gets to use and control natural resources. Essentially, this perspective helps to understand how decisions and policies about resource use affect local communities and their environment (Robbins, 2012). Political ecology offers a way to understand how the power relation and governance structures within a community affect how people act and adapt. In the context of KMMPA, the move towards sustainable fishing as employed by Hassan and diversifying income sources as done by Juma and Mohamed reflects how people are adapting to the rules set by conservation efforts. Political ecology shows that these changes are influenced not just by conservation policies but also by the socio - economic environments and political conditions that shape how resources are distributed and controlled (Robbins, 2012)

Robbin (2012) introduces the concept of common property theory to explain how resources can be effectively managed by communities collectively emphasizing both the challenges and opportunities of communal ownership and access. This theory contrasts sharply with the traditional "Tragedy of the Commons," which argues that common resources are often overused and degraded due to individual users acting independently without accountability, often leading to centralized or privatized control as solutions. However, Robbin (2012) challenges the idea that communal resources are always mismanaged and depleted. He points out that there is empirical evidence showing many community-managed resources are not only well-maintained but also thrive. Proving that communal management as opposed to private ownership or strict government control can be successful and sustainable (Robbin, 2012)

In the context of the KMMPA, integrating common property theory with observed adaptive strategies reveals how community management of marine resources can help mitigate some of the restrictive effects of KMMPA regulations. Projects like the mangrove restoration initiatives in Wasini Island and the Shimoni Slave Cave Project a tourist attraction site in Shimoni serve as exemplary models of this approach. These initiatives not only generate economic benefits but also foster a strong sense of stewardship and responsibility among the community members towards their natural resources. These collective efforts and localized governance models highlight the

capabilities of community management to improve resource sustainability and strengthen community resilience. This challenges the traditional view that strict, top-down regulatory controls are the sole approach to effectively manage and conserve marine resources. Largely, these community-led projects demonstrate how collective management can align with ecological sustainability and empower communities thus providing a practical implementation of common property theory (Robbin, 2012)

In conclusion, the various strategies developed by artisanal fishers in the KMMPA show how resilient and proactive these communities are in facing tough harsh and stringent regulations imposed in KMMPA. These strategies include adopting sustainable fishing techniques, engaging in tourism, and combining farming with fishing. The successful implementation of these strategies relies on effective local community engagement and participatory governance, as illustrated by political ecology and common property theory. These theoretical perspectives gives an understanding of how local adaptations are not merely reactive to KMMPA regulations but are responses to the complex dynamics of power, governance, and socio-economic factors. By promoting community-driven conservation practices KMMPA can become a leading example of how integrating conservation goals with community livelihood support leads sustainable and equitable management of natural resources. This approach not only addresses the economic effects of conservation but also gives communities a significant role in making decisions that impact their environment and future.

CHAPTER SIX: CONCLUSION

6. Introduction

This chapter summarizes the research conducted, emphasizing the main findings and outcomes. It reflects on the implications of these findings and offers suggestions for further research on understanding of the socio-economic impacts of MPA on artisanal fishing communities livelihoods and how they perceive and respond to those impacts. Here, I condense the main takeaways, highlight study limitations, recommend policy changes, and identify areas that require further examination.

6.1. Overview of Empirical Findings.

The establishment of Kisite Mpunguti Marine Protected Area, (KMMPA) boundaries has significantly affected local fishers in Shimoni and Mkwiro areas by limiting their access to traditional fishing grounds, thus reshaping their economic stability and cultural practices. Initially intended to protect marine life, the KMMPA boundaries have expanded over time forcing fishers to venture further to access deeper waters. This shift requires more robust vessels and increasing operational costs beyond many artisanal fishers economic reach. The expansion has also led to a decreased fish catch in nearshore areas due over crowding and overexploitation, pushing the fish further into protected zones and further complicating fishing efforts due to unclear boundary markings.

The enforcement of KMMPA regulations has often led to distressing interactions between fishers and the Kenya Wildlife Service (KWS) characterized by arrests, fines, and gear confiscation. Fishers report a lack of clarity in boundary demarcations often leading to accidental trespasses. These punitive measures orchestrated by KWS exacerbate the economic difficulties of the artisanal fishers fostering resentment and perceptions of unfair treatment compared to larger commercial operators who are believed to evade these regulations by paying bribe or obtaining licences.

Beyond the direct impacts of KMMPA artisanal fishers face many other socio-economic and environmental challenges that affect their livelihoods. Economic instability, environmental degradation, and overfishing deplete fish populations and affect their traditional fishing practices.

The changing climate further disrupts fish behaviours thus impacting fishing yields. Additionally, the presence of larger commercial fisheries intensifies competition for dwindling resources adding to the local artisanal fishers plight.

Fishers have further expressed concerns regarding their exclusion from the decision-making processes of KMMPA management. They advocate for greater involvement KMMPA management believing that effective management should incorporate the knowledge and needs of those directly impacted by the MPA. The perceived top-down approach of conservation efforts which often overlook the input of local communities continue to contribute to a lack of trust and support for KMMPA among the artisanal fishers. Despite the challenges reported there are reports of perceived benefits of KMMPA, primarily related to ecological conservation and indirect economic opportunities through tourism. However, the restrictions on access to traditional fishing grounds and the socio-economic impacts of these restrictions dominate the fishers perceptions. They articulate a need for a balanced approach that considers both conservation goals and the livelihoods of local communities concurrently.

In response to the challenges posed by KMMPA the artisanal fishers have adopted various coping strategies and alternative livelihoods. These include diversifying income sources to include tourism-related activities, returning to traditional and sustainable fishing methods, and engaging in small-scale agriculture. Such adaptations are crucial for sustaining their livelihoods amidst the regulatory and environmental pressures imposed by the KMMPA.

6.2. Overview of the Analysis.

From the findings the following four themes emerged: impacts of access restriction, conflict with conservation authorities, community involvement in MPA management and lastly adaptive strategies and alternative livelihoods. These themes emerged from a detailed thematic analysis of the socio-economic impacts of the Kisite-Mpunguti Marine Protected Area (KMMPA) on local artisanal fishers, connecting empirical findings with literature review and theoretical perspectives from political ecology and participatory development. The analysis uncovers the complex interaction between conservation policies and the livelihoods of fishers in Shimoni mainland areas and Mkwiro Island, showing the unintended consequences of access restrictions and the power

dynamics at play. By applying a political ecology framework, the analysis highlights how state and global conservation interests often override local needs and practices thereby causing socio-economic disruptions without sufficient local input in decision-making processes.

The primary argument in this thesis is that while KMMPA conservation goals are aimed at ecological preservation and biodiversity support, they inadvertently impose significant challenges on the local artisanal fishers livelihoods and cultural practices. These challenges are manifested through increased operational costs, reduced access to traditional fishing grounds, and escalated conflicts with conservation authorities (KWS). I call for a re-evaluation of conservation strategies of KMMPA through the lens of political ecology, which recognizes the influence of power structures and advocates for integrating local community voices into the governance of protected areas. This approach not only addresses the ecological objectives of the KMMPA but also prioritizes the socio-economic wellbeing of the communities it impacts.

The study illustrates that a shift towards more participatory and inclusive governance models could mitigate the negative impacts experienced in KMMPA. It underscores the importance of community involvement in decision-making processes which can lead to more effective and sustainable conservation outcomes. By aligning conservation efforts with the needs and practices of local communities the KMMPA can achieve a balance between biodiversity conservation and the socio-economic considderations of artisanal fishers. This approach ensures that marine protected areas serve both ecological and human communities effectively.

6.3. Recommendations.

To mitigate the socio-economic challenges faced by artisanal fishers in the KMMPA while still achieving marine conservation goals several policy recommendation and adjustments are proposed. Firstly, the research clearly indicates that one of the primary concerns among artisanal fishers is the lack of involvement in the decision-making processes related to the management of KMMPA. To address this, it is critical to establish formal platforms where fishers along government and conservationist can contribute to and influence conservation policies and practices. This could be done by creating KMMPA Local Fishers Advisory Councils**,** this councils can include representatives from the fishing communities of Shimoni, Mkwiro Island, and affected

fishing communities who would participate in regular consultations with conservation authorities. To ensure genuine representation the KMMPA Fisher Advisory Councils be established independently of the formal Beach Management Units (BMU), which are co-managed by the government. Instead, the representatives for these councils should be nominated directly by the fishers from each fishing area. This approach bypasses the existing BMU structure where chairmen, although elected by the fishers, receive compensation from the government through the State Department of Fisheries. Such a nomination process will empower the fishers, ensuring that their representatives are truly accountable to them and not influenced by governmental salary.

Secondly, one of the practical issues raised by artisanal fishers during the study was the difficulty in identifying the boundaries of the KMMPA especially at night or during rough sea conditions. To address this problem and prevent unintentional boundary violations it is crucial to enhance the visibility and clarity of boundary markers. This could be achieved by installing advanced buoy systems equipped with solar-powered lights, ensuring they are visible under poor weather conditions and at night. These buoys should be durable enough to withstand rough sea conditions and spaced at regular intervals to clearly demarcate KMMPA boundaries. Additionally, providing subsidized or government-funded GPS devices to fishers which are programmed with the exact coordinates of the MPA boundaries may help them navigate more accurately and reduce the risk of accidentally crossing into restricted zones. Regular maintenance and monitoring of the buoy systems by KWS are essential to ensure they remain in optimal condition and correctly positioned. Implementing these measures would significantly reduce boundary-related conflicts and enhance the ability of fishers to operate within legal limits confidently and safely thus supporting their livelihoods and aiding in compliance with conservation goals.

Thirdly, the expansion of KMMPA boundaries has significantly restricted access to traditional fishing grounds, adversely affecting the livelihoods of the local artisanal fishers. To alleviate this hardship the government needs to establish a direct compensation program for fishers who can demonstrate losses due to conservation measures. This would provide immediate relief and reduce economic pressures on artisanal fishers. Further to that the government of Kenya should formulate a revenue sharing model where a portion of the revenue generated from tourism within the

KMMPA is distributed to the affected fishing communities. This could help ensure that the benefits of conservation are more equitably shared.

Fourthly, as fishing opportunities diminish due to conservation efforts in KMMPA, supporting alternative livelihoods becomes crucial in reducing reliance on traditional fishing practices. There is need to establish skill development training programs that enhance the non-fishing skills of the community members, such as in areas of eco-tourism, craft making, boat operators, or aquaculture, leveraging the natural resources without exploiting already marginalized fishers. Government to further provide entrepreneurial support through microfinance, business training, and market access to encourage entrepreneurial initiatives among fishers and their families. This could help diversify income sources and increase economic resilience.

Lastly, recognizing and incorporating indigenous marine ecological knowledge of the local fishers into the management practices of KMMPA. This approach not only respects the cultural heritage of the communities but also enhances the ecological management of the area. This approach leverages their deep understanding of the marine environment, cultivated over generations. Local fishers possess experiential knowledge into seasonal cycles, fish behaviours, breeding patterns, and ecological indicators which can be integrated with conventional scientific knowledge. By integrating this indigenous knowledge, the KMMPA management can improve the accuracy and effectiveness of ecological assessments and conservation measures. This inclusion further nurtures a sense of ownership and responsibility among the local artisanal fishing communities boosting their commitment to KMMPA conservation goals.

6.4. Limitation of the Study

Some of the limitations of this research are firstly, the study is confined to the KMMPA in Kwale County, which may not represent all MPAs in Kenya or globally. This geographic specificity means the findings may not be applicable or transferable to other MPAs with different socio-economic and ecological contexts. Secondly, the research focuses predominantly on the perspectives of artisanal fishers, excluding other relevant stakeholders like tourism operators, conservation NGOs, and government agencies involved in marine conservation. This focus narrows the scope of the study thus potentially overlooking broader impacts and interactions that

might affect the overall understanding of KMMPA implications. Thirdly, the findings reflect the situation as observed during the fieldwork in February 2024 and do not account for past or future changes in the MPAs or fishing communities. This temporal limitation means the research may not capture the full dynamics of change over time in marine conservation practices and artisanal fishing. Lastly, constraints related to time, funding, and other resources might have limited the scope of the study thereby affecting the depth and breadth of the research. For example, more extensive observational periods or a larger number of interview sessions might have provided richer and more robust empirical data.

6.5. Future Research Direction and Closing Reflection.

This research contributes to our understanding of the socio-economic impacts of MPA on artisanal fishing communities livelihoods and how they perceive and respond to those impacts. Future research should explore the application of these findings in other MPAs, both within Kenya and globally, to test the applicability of the suggested policy recommendations and also to compare and contract socio-economic impacts more broadly. Quantitative approaches could also be employed to measure the impact of policy changes on the livelihoods of fishers, providing a complementary perspective to the qualitative insights provided here.

In conclusion, this research illustrates the delicate balance required between conserving natural resources and supporting the livelihoods of those who depend on them. It calls for a rethinking of conservation strategies to incorporate socio-economic considerations thus ensuring that MPAs do not just preserve biodiversity but also enhance the lives of local communities. The path forward as informed by this study is one where conservation efforts are both ecologically sound and socio-economically just, leading to truly sustainable environmental stewardship.

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APPENDICES

Appendix: 1. Informed Consent Form

Are you interested in taking part in the research project:

"BALANCING CONSERVATION AND LIVELIHOODS: ARTISANAL FISHERS' PERSPECTIVES ON THE KISITE-MPUNGUTI MARINE PROTECTED AREA, KWALE COUNTY, KENYA**"**

Purpose of the project

You are invited to take part in a Master Thesis research project aiming to understand the challenges/experiences faced by artisanal fishers in Kwale County, Kenya, specifically around the Kisite-Mpunguti Marine Protected Area (KMMPA). We want to learn from your experiences to help shape policies that balance marine conservation and the livelihoods of artisanal fishing communities

Briefly outline the project's objectives/research questions

The primary objectives are to explore:

1. **General Challenges:** Understand the overall challenges faced by artisanal fishers in Kwale County.
2. **KMMPA-specific Challenges:** Examine how the KMMPA affects artisanal fishers in the region.
3. **Perceptions:** Learn how artisanal fishers see the impact of KMMPA on their lives.
4. **Coping Strategies:** Explore the strategies used by artisanal fishers to address challenges, especially those from the KMMPA.

The research aims to answer the following questions.

v. What are the general livelihood challenges faced by artisanal fishers in Kwale County, Kenya?

vi. What specific challenges have the establishment of the Kisite-Mpunguti Marine Protected Area (KMMPA) introduced for artisanal fishers in the region?

vii. How do artisanal fishers, both men and women perceive the impacts of the KMMPA on their livelihoods?

viii. What coping strategies, both individual and at the household level, do artisanal fishers employ in response to these specific challenges?

Which institution is responsible for the research project?

The University of Agder is responsible for the project (data controller).

Why are you being asked to participate?

You have been chosen based on your active participation in artisanal fishing near KMMPA, your residence in towns and villages neighboring the KMMPA, and your direct exposure to the

impacts of the KMMPA. Your inclusion ensures a diverse and representative group, essential for capturing the varied perspectives within the artisanal fishing community.

How Were You Contacted?

Key participants were identified with help from Beach Management Unit (BMU) offices. Some of these key participants have also helped establish contact with others within their social networks. Your contact details, if used, may have been obtained with BMU Managers' approval. No information has been sent on behalf of another person, and any contact information provided will be used solely for the purpose of this research.

What does participation involve for you?

By choosing to participate in this research, you agree to a face-to-face interview that will last between 45 and 60 minutes. The interview includes questions about some personal data in the form of background information such as gender, age, locations of villages, socioeconomic status, information about the artisanal fisher's experience, engagement in fishing activities, and their community. The length of time the participant has been engaged in artisanal fishing. Questions about the participant's experience as an artisanal fisherman, the fishing practices used, and the importance of fishing for their livelihood involve background information. If this information can be combined to identify specific individuals, it falls under indirect personal data. This information will be recorded by note-taking on paper.

At the same time, you might be asked if you agree to participant observation, where the researcher immerses for a day in your activities. The objective is to observe and take notes of conduct in different possible settings to better understand daily activities, interactions, and contextual details within the KMMPA. No photographic, video, or audio recordings will occur during the participant observation.

If you choose to participate in this research, you agree to a face-to-face interview but are not obliged to agree to participant observation. If you choose to participate in this research, you agree to a face-to-face interview but are not obliged to agree to participant observation. The information offered during the interviews will be recorded (sound recording), and notes will also be taken during the interview and, if applicable, participant observation. When the interview ends, the recording will be immediately saved on the University of Agder’s own password-protected servers and deleted from the recording device (password-protected recorder). Your privacy and the confidentiality of your information will be strictly maintained.

Participation is voluntary
Participation in the project is voluntary. If you choose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you choose not to participate or later decide to withdraw. Your well-being and autonomy in your current situation are respected, and your choice regarding participation is entirely at your discretion.

Your personal privacy – how we will store and use your personal data.
We will only use your personal data for the purpose(s) specified here and we will process your personal data in accordance with data protection legislation (the GDPR).

- Only my supervisor at the University of Agder will have access to your personal data. Your name will be replaced with a pseudonym, and contact details will be coded for further confidentiality.
- All data, including personal information, will be transcribed and analyzed by me directly on the University of Agder's server.
- The list of names, contact details, and respective codes will be stored separately from the rest of the collected data. Data will be stored securely, following the University of Agder guidelines, on a research server. Access to this server will only be granted after presenting two separate pieces of evidence to verify my identity (e.g., password + code sent by email).
- While personal data will be processed outside the European Union, it will be stored and managed directly on the University of Agder's server, ensuring compliance with EU data protection standards.

Participants will not be recognizable in any publications arising from this research. Your privacy is a top priority, and measures are in place to ensure that your identity remains confidential throughout the research process and in any subsequent publications..

What will happen to your personal data at the end of the research project?
The planned end date of the project is March 31, 2024. The data will then be anonymized, and any personal data and digital recordings will be deleted at the end of the project.

Your rights
So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you.
- request that your personal data is deleted.
- request that incorrect personal data about you is corrected/rectified.
- receive a copy of your personal data (data portability), and
- send a complaint to the Norwegian Data Protection Authority regarding the processing of your personal data**.**

What gives us the right to process your personal data?
We will process your personal data based on your consent.

Based on an agreement with the University of Agder, The Data Protection Services of Sikt – Norwegian Agency for Shared Services in Education and Research has assessed that the processing of personal data in this project meets requirements in data protection legislation.

Where can I find out more?
If you have questions about the project or want to exercise your rights, contact:

- University of Agder via James Edgar Otieno, jameseo@uia.no or telephone +254715251778
- University of Agder via Professor Vito Laterza, vito.laterza@uia.no
- Our Data Protection Officer: Trond Hauso, personvernombud@uia.no

If you have questions about how data protection has been assessed in this project by Sikt, contact:

- email: (personverntjenester@sikt.no) or by telephone: +47 73 98 40 40.

Yours sincerely,

Project Leader Student

(Researcher/supervisor)

Vito Laterza James Edgar Otieno

Consent form
I have received and understood information about the project "Balancing Conservation and Livelihoods: Artisanal Fishers' Perspectives on the Kisite-Mpunguti Marine Protected Area, Kwale County, Kenya" and have been given the opportunity to ask questions. I give consent:

- ☐ to participate in an interview
- ☐ to be part of participant observation for a day
- ☐ for information about me to be published in a way that I can be recognized indirectly (if holding a public position).

I give consent for my personal data to be processed until the end of the project.

(Signed by participant, date)

Appendix 2: Interview Guide

Introduction:

- I thank the participants for their willingness to participate in my research project interview.
- I explain that the interview aims to explore the specific livelihood challenges faced by artisanal fishermen in Shimoni, Wasini, and Mkwiro areas due to the establishment of the Kisite-Mpunguti Marine Protected Area, KMMPA.
- Emphasize the importance of their insights and contribution in informing sustainable resource management and conservation efforts of marine ecosystems.
- I explain that the interview will be anonymous, and no personal identifying information will be recorded or shared.
- I dully inform them that the interview will take approximately 45 to 60 minutes and that I will be taking notes during and after the interview.

Section 1: Background Information

- Can you briefly describe your experience as an artisanal fisherman around KMMPA?
- How many years of experience do you have in artisanal fishing, and what motivated you to pursue this livelihood?
- Can you provide an overview of the fishing practices and techniques that you use and are commonly used in these waters around KMMPA?
- What is the importance of fishing for your livelihood and the livelihoods of others in your community?

Section 2: What dynamic livelihood challenges are they facing.

- Can you share some of the day-to-day challenges you encounter as an artisanal fisher in Kwale County?
- How has the nature of artisanal fishing in Kwale County changed over the years, and what impact has this had on your livelihood?
- In your opinion, what are the specific benefits, challenges or disruptions you have encountered as an artisanal fisher following the establishment of the Kisite-Mpunguti Marine Protected Area?

- How has the establishment of the KMMPA affected your access to fishing grounds or resources?
- Have you observed any changes in fish stocks or the overall marine ecosystem since the establishment of the marine protected area? If yes, how has this impacted your livelihood?
- Are there any specific restrictions or regulations imposed by the Kenya Wildlife Service, KWS, which manages KMMPA that have posed challenges for your fishing activities?
- Have you experienced any your income, livelihood, or the overall economic implications because of the establishment of the KMMPA? If so, can you elaborate on those impacts?

Section 3: Their perceptions and any other suggestions

- Do you feel that the concerns and needs of artisanal fishermen have been adequately considered?
- In your opinion, how have government authorities and conservationists influenced the management of the KMMPA?
- Do you feel that there is a balance between ecological conservation and the socio-economic needs of the local community in the management of the KMMPA?
- How involved as artisanal fisher do you feel in the decision-making processes related to the KMMPA?
- From your perspective, how could the involvement of local communities be improved in the management of MPAs?
- In your opinion, what improvements or changes could be made to the marine protected area management to better support the livelihoods of artisanal fishermen?
- How do you perceive the value of indigenous knowledge in the sustainable development of marine resources?
- How can the challenges faced by artisanal fishers within and around MPAs be addressed for sustainable livelihoods?
- Is there gender-specific impacts that you've observed or experienced regarding the KMMPA's effects on livelihoods?

Section 4: How they are coping and adapting

- How have you adapted your fishing practices or livelihood strategies to cope with the challenges posed by the KMMPA?
- Have you explored alternative income-generating activities or diversified your livelihood beyond fishing? If yes, please share your experiences.
- Are there community-level or household-level initiatives that artisanal fishers have undertaken to cope with the changes brought about by the KMMPA?
- Are there any support programs or initiatives provided to artisanal fishermen in response to the establishment of the KMMPA? How effective have these been in addressing the challenges faced?

Closing:

- Are there any other insights or perspectives you would like to share regarding the establishment of the KMMPA and its impacts on artisanal fishing communities in Kwale County**?**
- I thank the participant for their valuable contribution and time.
- I reiterate the confidentiality and anonymity of their responses.
- I offer the opportunity for participants to ask any additional questions or provide further comments.
- I express gratitude for their contribution to my research project.