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The nature of conflict between human activities and biodiversity conservation at Lets'eng-la-Letsie Nature Reserve in Quthing, Lesotho

By

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Declaration

I declare that this thesis, which is submitted to the National University of Lesotho, is, to the best of my knowledge, my original work and has not been published or submitted to any university before. Other authors' work has been used and appropriately acknowledged.

Researcher Date……..

N. Lone

Supervisor…….. Date…….

Abstract

This study was conducted in Quthing, Mphaki Community Council on five villages focusing on the nature of conflict between human activities and biodiversity conservation at Lets'eng-la-Letsie. The main objectives were to assess the nature of conflict between local communities and biodiversity conservation; assessing the effect of natural resource management policy instruments and strategies; identify areas of collaboration and not- collaboration as well as assessing the effect of conflict on the communities' livelihoods and biodiversity. A mixed method approach was used to conduct this study whereby qualitative data was initially collected through one to one interviews from nine key participants. The results obtained from them were used to structure and obtain quantitative data from seventy-two individuals on five villages.

The findings obtained through thematic analysis revealed that conflict in biodiversity conservation have been negatively affected local communities' livelihoods and biodiversity due to lack of information on policies and laws and the presence of ethnic conflict. The statistical software called Excel was used to determine whether the current biodiversity efforts had generated income for the communities and whether local communities were actively involved in the management decisions. The Cronbach's Alpha test was used to determine the relationship between the nature of conflict and biodiversity conservation. The results obtained showed that there is an association between the nature of conflict and biodiversity conservation.

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List of Abbreviations

BSNT	Borena Sayint National Park
CBFM	Community-based Forest Management
CBNRM	Community- based Natural Resource Management
CMPAs	Co-management of Protected Areas
ECOMOG	Economic Community of Monitoring Group
ECOWAS	Economic Community of West African States
FAO	Food and Agricultural Organisation
KWS	Kenya Wildlife Services
LHWP	Lesotho Highlands Water Project
MDTO	The Maloti- Drakensberg Trans frontier Conservation
NRT	Northern Rangelands Trust
SANParks	South African National Parks
SLF	Sustainable Livelihood Framework
UK	United Kingdom
UNCCD	United Nations Convention to Combat Desertification

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CHAPTER ONE

1.1 Background and introduction

Conflict between human activities and the preservation of biodiversity has been and continues to be a global concern, frequently with significant political, economic, and environmental consequences (Pelicice & Castello, 2021 & Young et al., 2007). Different scholars define conflict in natural resources as a situation when individuals intentionally destroy biodiversity, whether they are aware of the implications of their actions or not, especially when such actions benefit their livelihoods (Dunlap, 2022 & Young et al., 2007) demonstrated that there are various forms of conflict relating to biodiversity conservation, including conflict in nature reserves between people and animals and conflict in nature reserves among people. (Xu et al., 2019 & Su et al., 2020) Conflict may involve miscommunication, disagreement, and conflicting conservation strategies, in addition to the deliberate destruction of natural resources.

Considering the ongoing global concern of biodiversity conservation, the concept of biodiversity conservation and its threat has become an issue in the European and African continents (Chapman et al., 2022; Young et al., 2007; Kumar, 2020). However, it is not denied that there are several methods used to combat the conflict between human activities and biodiversity conservation as well as solutions implemented, such as laws and policies. These include the Common Agricultural Policy, fencing the protected areas, improved labour productivity in agriculture, utilisation of biodiversity, environmental assessment, encouraging local communities to actively participate in decision-making and including them in the conservation of natural resources. Nonetheless, to date, these solutions have failed to be a success, and local communities continue to degrade the land, resulting in the loss of biodiversity (Mutahi et al., 2012; Maze et al., 2003). The concept of biodiversity is the process of safeguarding and preserving ecosystems and natural resources (McCarthy et al., 2021 & Soto-Navarro et al., 2021).

Following the discussion on attempted solutions, historically, Walter Rosen of the National Academy of Science introduced biodiversity conservation in the late 1980s, and this was also the moment when it first physically erupted into the public mind and academic literature. (Verdier, 2021; Rotherham, 2023). However, the concept of biodiversity protection was already in existence by the middle of the 1980s, and at least two previous publications of its application appeared in Bioscience, a journal for which Rosen reviewed books, in the years 1985 and 1986. The first piece of writing was a report to the US Congress by Laura Tangley in

1985 on a plan to protect biodiversity in underdeveloped nations (Sarka, 2023). Sarkar (2023) further stated that the term's meaning and the importance of connected concerns are sometimes misinterpreted, but its basic allusion to the diversity of life and species is obvious.

In the context of Lesotho's biodiversity conservation, efforts to protect the natural resources faced increasing challenges. Biodiversity conservation was first practised in the mid-1980s and 1990s. However, in 2001, there were six nature reserves: Sehlabathebe National Park, Masitise, Bokong, Tsehlanyane, 'Muela, and Liphofung (Bitso & Lana, 2001). Although biodiversity conservation has been a long-standing endeavour, it became more important around 2000, and conservationists have lost the war against human activities like deforestation and extinction (Whitten et al., 2001). This is because of issues like poverty, lack of education, the common agricultural policy, miscommunication between communities and conservationists, and the danger they pose to biodiversity and the environment (Fanana, 2006; Young et al., 2006; Ibisch, 2005).

To address these challenges and foster effective biodiversity conservation, various approaches have been employed, including wildlife management, co-management, and community empowerment (Adetoro, Oyeleye, and Ijeomah, 2011). However, despite these efforts, Khatter et al. (2021) demonstrated that collaboration between local communities and conservationists has been hindered by a low level of understanding, becoming a barrier to efficient conservation education and implementation. The conflict between local communities and biodiversity conservationists have led to severe damage to natural resources, wildlife, and the environment (Merz et al., 2023). Crop damage, habitat disturbance, and habitat destruction have been observed in various regions such as the Bale Mountains National Park in Southeast Ethiopia, where 14 percent of livestock has been overgrazed, 18 percent of forests lost, and 10 percent of grass illegally collected (Mekonen, 2020; Smit & Rensburg, 2021). These negative impacts highlight the urgent need for effective collaboration and communication between conservationists and local communities to ensure the sustainable protection of biodiversity in Lesotho and other regions facing similar challenges.

Building on that, conflicts between human activities and conservationists remain and continue to be a serious issue, particularly in regions regarded as protected areas in Lesotho such as Sehlabathebe National Park, Ts'ehlanyana, Sehlabathebe, Liphofung, Bokong, and Maloti-Drakensberg Park. The Maloti-Drakensberg Transfrontier Conservation and Development Project (MDTP) was established to protect the biodiversity of the Maloti-Drakensberg Park

ecosystem, but the role and functions of the locals within this discourse were very ambiguous (Bram & Julia, 2010). The indigenous population was seen as an intrusion exploiting biodiversity (Hughes, 2002) and continues to destroy the area despite efforts made by the MDTP to persuade them to maintain biodiversity.

Highlighting the need for more research on this topic, different scholars have conducted studies on Lets'eng-la-Letsie from various angles, and almost none have written about how biodiversity conservation promotes conflict. For instance, Rose et al. (2020) deployed a quantitative technique to undertake the study from Lets'eng-la-Letsie on the rate of pollutants entering natural ecosystems through the atmosphere, while Kahlolo et al. (2021) used the Braun-Blanquet approach to conduct the same research in the same field. Aside from that, Lekhanya (2020) employed a quantitative approach when conducting scientific research on how Lets'eng-la-Letsie may be used for generating hydroelectric power. However, none of these scholars have written about conflict in biodiversity conservation and its effects on community livelihoods. Lannas and Turpie (2009) conducted a study from Lets'eng-la-Letsie based on the incomes from wetland resources and the relative dependency of local communities on wetlands using quantitative research. Even so, there was no reference to conflict over biodiversity. In addition, most of these studies were conducted using qualitative research approaches, and there is a lack of rich insight and texture that a quantitative approach could provide. In contrast to past research, the current study has used a mixed-methods approach to attempt and shed light on the nature of conflict in biodiversity conservation among people as well as how biodiversity conservation affects the livelihoods of local communities. Despite the fact that there is literature on the Lets'eng-la-Letsie Nature Reserve in Lesotho, there is little information available on the nature of the conflict between human activity and the preservation of biodiversity.

1.2 Statement of the problem

The effort to preserve biodiversity is becoming more and more difficult. Natural resources are currently under strain from an increasing human population (Barnosky et al., 2011) and have been anticipated to become more significant and severe as a result of the changing environment, which is putting increasing pressure on ecosystem goods and services and the urgency of conserving biodiversity. This normally harms both biodiversity and human well-being. Several approaches have been taken to address the issue of conflict in biodiversity conservation because not everyone agrees with conservation goals. People naturally have a variety of priorities and

interests, some of which may be in direct conflict with conservation goals. These differences can occasionally result in costly and harmful conflicts that are increasingly spreading over the globe and pose significant obstacles to the preservation of biodiversity (MacDonald and Service, 2007). The government of Lesotho has also embraced several strategies and solutions to avoid conflict in biodiversity conservation, but local people still overuse and harm wildlife and natural resources at Lets'eng-la-Letsie, leading to unending conflicts.

1.3 Purpose of the study

This study aims to determine the nature of conflict at Lets'eng-la-Letsie and the degree to which resource-related conflict is prevalent there.

1.4 Research questions

1. What is the nature of conflict at Lets'eng-la-Letsie Nature Reserve?
2. What is the effect of natural resource management policy instruments and strategies on conflict between local communities and conservationists at Lets'eng-la-Letsie?
3. Which are the areas of collaboration and non-collaborations between local communities and conservationists?
4. How does conflict affect community livelihoods and biodiversity at Lets'eng-la-Letsie?

1.5 Research objectives

1. To assess the nature of conflict at Lets'eng-la-Letsie Nature Reserve.
2. To assess the effect of natural resource management policy instruments and strategies on conflict between local communities and conservationists at Lets'eng-la-Letsie?
3. To identify areas of collaboration and not-collaboration between local communities and government conservationists.
4. To assess the effect of conflict on community livelihoods and biodiversity at Lets'eng-la-Letsie.

1.6 Significance of the study

This study will add to the literature on Lesotho's biodiversity conservation conflicts. The research will also fill a knowledge gap on conflict in biodiversity conservation. Additionally, the study is likely to influence policies that should be put into place to guarantee the expansion and sustainability of protected areas and improve people's livelihoods throughout the nation

and perhaps elsewhere. It will also likely to assist the community and the stakeholders in charge of the Ramsar site in figuring out how to cooperate in order to protect the natural resources found in the Lets'eng-la-Letsie nature reserve. Future studies in the same field will benefit from this study's data and analysis, which will allow them to examine additional, alternative approaches and solutions for reducing conflict in biodiversity conservation and the effects of conflict on community livelihoods. It will also help in examining several aspects of how biodiversity protection might support local livelihoods and have a substantial impact on the community. Additionally, the study may also contribute to methodology because the majority of studies are conducted using a quantitative technique, and none of them employed a strategy made up of both qualitative and quantitative components. This research used a mixed-methods approach to carry out the investigation.

1.7 Limitations of the study

Theofanidis & Fountouki (2018) described the study's limitations as potential shortcomings that are typically beyond the researcher's control and directly related to the research design they selected, the statistical models they used, their financing restrictions, or other reasons. The study only looked at communities near protected areas, despite the fact that disputes over biodiversity conservation exist in most protected areas. Some research participants were hesitant to participate out of concern that their problems would be revealed to an outsider, and some of the stakeholders in charge of environmental issues were hesitant to respond to some of the questions out of concern that their inadequacies could be revealed. The study implemented measures like credibility, a pilot study, and transparency to establish a research environment that respects participants' and stakeholders' privacy, encouraged truthful responses, and reduced participant reluctance. The study may also ensure confidentiality and build trust between the researcher and the participants. Some of the questions provoked responses from other participants because they brought up painful recollections. Some respondents asserted that they had no ideas on particular issues, such as what they could suggest about the conflict issue in biodiversity conservation. Since data was collected early in the winter and it was difficult to get herd boys to interview as livestock was at home rather than in '*motebong';* therefore, they were not able to take part in the study. Also, there were limitations in sampling whereby some participants were not available, and therefore the sample size decreased. To improve the recruiting technique for the full study, the researcher therefore ran a pilot survey before the major research and contacted the non-respondents to inquire about their willingness to participate in the future.

1.8 Structure of the dissertation

This dissertation consists of seven chapters

The introduction and background of the study, the problem description, the goal of the investigation, the research questions, the research objectives, the significance of the study, the justification of the study, the technique to be used, and a summary of the chapter are all included in Chapter 1. The literature review is covered in Chapter 2, the research methodology is covered in Chapter 3, the qualitative and quantitative analysis and data presentation are covered in Chapter 4, and the study's conclusion and recommendations are included in Chapter 5.

1.9 Chapter summary

Therefore this chapter examines the identification and settlement of a range of conflicts in diversity ecosystems involving numerous stakeholders at the global and local levels through various case studies and initiatives. These case studies demonstrate how each conflict must be handled differently depending on the species, habitat and people involved. Conflicts typically involve parties who intentionally, if frequently unintentionally, reduce and destroy biodiversity, which can then have a beneficial or negative impact on their way of life.

There has been conflict between local communities and the biodiversity conservationists worldwide and the main issue for such conflict has been discovered by the stakeholders that normally do not communicate with the local communities for national interests and the local councils and chiefs that approve much development which normally harms local communities.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the literature on conflict in biodiversity conservation management, drawing on works from both international and domestic perspectives to show how various academics conceptualise conflict in general and specifically as it applies to nature reserves. The theoretical foundation for this study is first discussed in the chapter, along with its applicability. Secondly, the chapter presents the nature of conflict in natural resource management, starting with various conceptualizations of the concept of conflict from different perspectives. Thirdly, the chapter presents conflict in natural resource management, stating various contributing factors and conflicts arising from policy instruments and strategies. In the next part, the chapter presents areas where local communities and conservationists collaborate, indicating factors they do not collaborate with. The chapter further presents the effects of conflict in biodiversity conservation on the livelihoods of communities. The chapter concludes with a summary that gives a brief overview of the key concepts of conflict in biodiversity conservation discussed in this chapter.

2.2 Theoretical framework

This study was informed by the Sustainable Livelihood Framework (SLF), which provides a useful lens for understanding the nature of conflicts between human activities and biodiversity conservation. As shown in figure 2.1, SLF is an analytical method for understanding the mechanisms of livelihood and how they interact with institutions like the government to produce results for sustainable livelihoods such as higher earnings, enhanced well-being, decreased vulnerability, and increased food security (Natarajan et al., 2022). SLF examines the various dimensions of people's livelihoods and their interactions with natural resources, as well as the ability of local communities to withstand externalities that impact their livelihoods (Shiquan et al., 2022; Samal & Dash, 2023). Thus, when applied to the context of biodiversity, SLF highlights its relevance by highlighting the underlying factors that drive conflict between human activities and biodiversity conservation.

According to the Sustainable Livelihood Framework, there are four outputs that are explained: contexts, situations, and trends; livelihood strategies; institutional processes and organisational structures; and sustainable livelihood results (Natarajan et al., 2022). As Scoone (2009) stated, The natural, physical, financial, human, and social capital are the five main livelihood assets identified by the sustainable livelihood framework. Conflict in biodiversity often emerges

when human activities, such as agriculture, logging, or infrastructure development, come into conflict with natural resources, and these different assets shed light on the causes of conflict.

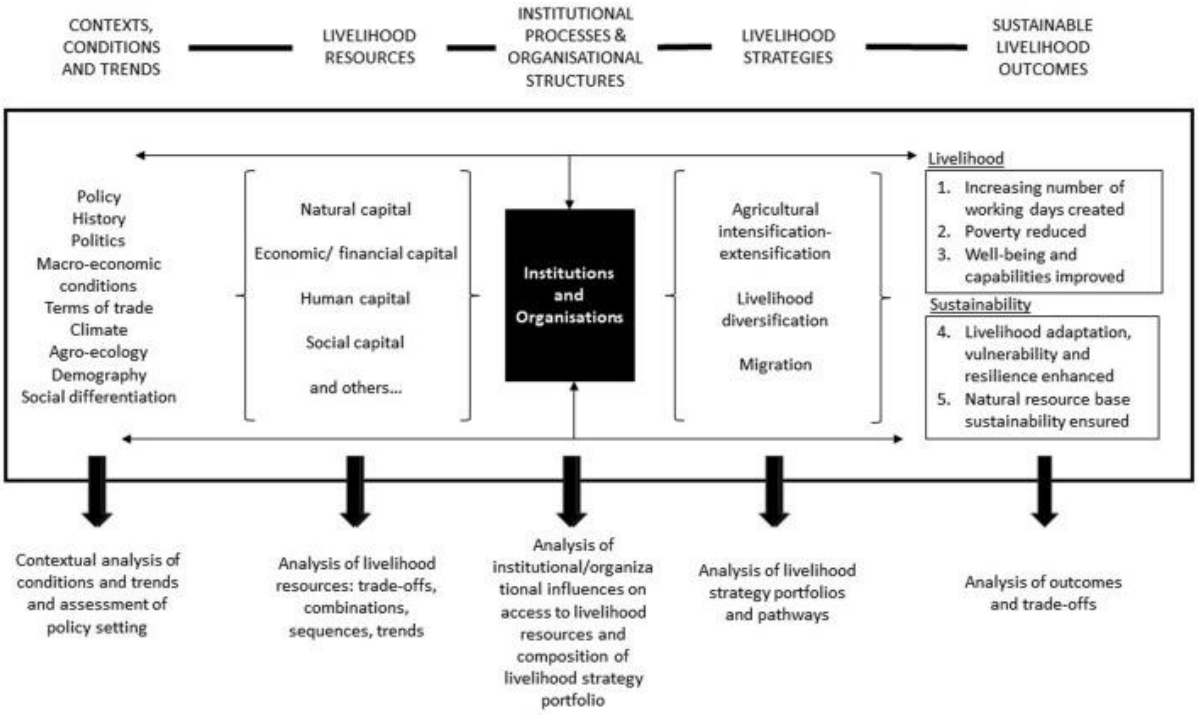
Adger (2006) demonstrates that the sustainable livelihood framework emphasises the vulnerable context within which livelihoods operate. Marginalised communities are dependent on natural resources for their livelihoods and may face limited options and resources (Levers et al., 2021), leading to unsustainable practices that can harm biodiversity. Adger (2006) further demonstrated that, when conservation measures restrict the coping strategies of vulnerable people, conflicts arise. He further stated that conservation interventions are designed to address the root causes of conflict by understanding the context of vulnerability and coping strategies.

The Sustainable Livelihoods Framework highlights the importance of institutions and governance structures in shaping livelihood outcomes and resource access (Serrat, 2017; Natarajan et al., 2022). On the contrary, conflicts in biodiversity conservation often begin with inadequate governance mechanisms, including weak enforcement regulations, unclear property rights, and limited participation of local communities in decision-making processes (Ostrom, 2009; Bang & Khadakkar, 2020; Baynham-Herd et al., 2018). Analysing the role of institutions and governance within the SLF can help identify ways to enhance involvement and address conflicts (Castro-Arce & Vanclay, 2020; George et al., 2020).

Further, Karki (2021) stated that the Sustainable Livelihood Framework emphasises that people adopt diverse livelihood strategies to sustain their well-being. He further stated that conflicts may arise when conservation measures restrict or undermine the livelihood strategies of local communities. Thus, understanding different livelihood strategies, their impacts on biodiversity, and the trade-offs involved can help minimise conflicts.

There are studies that have successfully deployed the Sustainable Livelihood Framework to investigate conflict in natural resource management (Young et al., 2004; Fan et al., 2022; Selemani, 2020; Lowe et al., 2019). They employed a livelihood framework to determine the extent to which human activities because conflict in biodiversity conservation, and their studies revealed that, indeed, human activities cause conflict in biodiversity conservation.

Figure 2.1



Source: (Natarajan et al., 2022)

2.3 Conceptualisation of conflict and its nature

The concept of conflict and its relationship with biodiversity is often misunderstood, as different scholars attach different meanings to these terms. Conflict is conceptualised differently in different contexts, leading to various explanations (Young et al., 2007; Deutsche, 2021; Garranza et al., 2020; Grima and Singh (2019); Buchana (2013; Riesch et al., 2003; Midgley & Lindhult, 2021; Engen et al., 2023 & Tjosvold, 2006). Deutsche (2021) & Tjosvold (2006) defined conflict as incompatible activities that interfere, obstruct, or hinder the actions of others. This definition encompasses both cooperative and competitive contexts and highlights how conflict influences intentions and negotiation processes, thereby affecting the perception of cooperative or competitive goals.

Redpath et al. (2013) define conflict based on a study on conflict management and conservation in the United Kingdom. They describe conflict as a situation where strongly held opinions clash over natural resources, with individuals perceived to prioritise their own interests over others. Young et al. (2007) and Garranza et al. (2022) provide definitions of conflict in studies focused on conflicts between biodiversity conservation and human activities in European and Chilean contexts, respectively. They describe conflict as the deliberate destruction of biodiversity, with or without knowledge of the consequences.

Conflicts between humans and wild animals in the context of natural resource utilisation have a long history, leading to significant costs for both parties involved. Numerous case studies and examples illustrate these conflicts in various nature reserves and conservation areas, such as Kruger National Park and Serengeti National Park (Holmern et al., 2007; Jonhson, 2017; Le and Rskaft, 2004). While some argue that human-animal conflicts arise due to animals' misbehaviour, others contend that local communities unjustly kill wild animals (Martin, 2023). Making protected places available often resulted in the exclusion of livelihood activities for surrounding communities, subsequently leading to poaching and violent conflicts between humans and animals (Peer et al., 2022; Ayivor et al., 2020).

Similar cases of human-animal conflicts are prevalent worldwide. In Zambia, for instance, wildlife damage crops, and lions have been responsible for human deaths (Matanzima & Marowa, 2022; Stoldt et al., 2020 & Wit et al., 2020). In China's Xishuangbanna Nature Reserve, elephants encroach upon crop areas, leading to conflicts with local villagers (Su et al., 2020). The destruction of crops and property by elephants has also affected communities residing near Chitwan National Park in Nepal, Chebra Churchura National Park in Ethiopia, and Rombo National Park in Tanzania (Dangol et al., 2020; Tsegaye et al., 2022). Disagreements arise among those unaffected by elephant conflicts, with some advocating for the killing of elephants in retaliation, leading to internal community conflicts (Groo eta al., 2021; Baynham-Herd, 2020). These conflicts result in strained relations between humans and animals, as highlighted by Angwenyi (2020), Ayivor et al. (2013), and other various studies Himmelfarb, 2006; Hammond, 2017; Liu, Wen & Harich, 2017; Stone, Phalke, Warren & Karishma 2019; Tsegaye et al., 2022; Wilson, Davies, Hazarika & Zimmermann, 2015 & Xu, 2004).

In Ethiopia's Borena Sayint National Park and communities surrounding Chebera-Churchura National Park, crops are damaged, and livestock are attacked by wild animals such as baboons, leopards, lions, and hyenas (Biset et al., 2019). As a result, local communities driven by anger resort to killing these wild animals. Negative perceptions towards conservation efforts arise in Alitash National Park, as local communities experience wildlife damage and economic losses (Ayalew and Melese, 2022). This situation has led to a reduction in crop cultivation by 10% due to wildlife-induced losses (Mekonen, 2020).

When communities heavily rely on natural resources, conflicts often arise among themselves due to competition over those resources. Numerous examples and case studies have highlighted

the occurrence of such conflicts in nature reserves, such as Sikumi National Park and Yancheng Biosphere Reserve (Ma et al., 2009). The local communities residing near these parks have a significant dependence on natural resources, which frequently leads to the eruption of conflicts (Murrey, 2015; Mushonga, 2020; Massie, 2020; & Verweijen, 2020).

Disagreements regarding the exploitation of natural resources intensify tensions within these communities. Some individuals may report those who exploit these resources, while others resort to attacking those who oppose such exploitation (Nduna & Tshona, 2021). This can manifest in destructive acts like burning houses and making threats of witchcraft. Consequently, community mistrust, divisions, and disharmony prevail (Baldoli, 2020; Buscher and Ramotsindela, 2016; Duffy et al., 2019).

Angwenyi (2020) and Ayivor et al. (2013) have voiced similar concerns, emphasising that when wildlife escape from nature reserves, farmers often suffer economic losses and feel compelled to take action, sometimes resorting to killing wild animals. This circumstance exacerbates the already existing tension between wildlife officials and neighbourhood residents, resulting in resentment, distrust, and occasionally even violent altercations (Ayivor et al., 2013).

Himmelfarb (2006) provided an illustrative example from Uganda's Mt. Elgon National Park, where wildlife officials engaged in harassing and threatening local communities. Additionally, they would impound their cattle, commit acts of sexual violence against women, and, in some extreme cases, even resort to killing. These actions have intensified the conflict and further eroded trust between the communities and wildlife authorities.

A significant problem in nature protection is conflict between local residents and administrators of protected areas. These conflicts can end in arrests, legal action, and violent confrontations, which can occasionally result in fatalities. They involve arguments and disputes about who has access to and control over resources. For instance, a border dispute in Kyabobo National Park led to the unfortunate deaths of two wildlife officers (Omolola et al., 2021). The same complaint was made by Ayikovor (2007) and Ayikovir et al. (2013): in Bui National Park, a poacher lost his life for resisting arrest and assaulting a wildlife official. Locals attacked wildlife officers and set one of their campsites on fire. When animals invade farms in Ghana, especially those close to protected areas, local populations and wildlife officials become disgruntled because farmers incur financial losses and run the possibility of facing legal action

if they kill the animals. This led to mistrust, hostility, and occasionally violent clashes between wildlife officers and the local population.

Studies show that wild animals' conservation is not understandable in many communities, and this results in the threat of the wild animals (Berhanu & Teshome, 2018; Marowa & Matanzima, 2023). For example, in Alatish National Park, in northwest Ethiopia, local communities depend on the hunting of rodent species and large mammals such as the Greater Kudu and fishing in and around the park for their livelihoods. However, some communities hunt animals for personal reasons such as pleasure or pride, based on their status in the community, and kill animals such as leopards and lions. Some people also believe that if they kill a lion and wear its mane, they will gain more energy, become known in local circles (Bichel & Hart, 2023). Others believe that, by killing a lion, they become the winners in any debates in court they come across. As a result, this killing of wild animals brought two sides, as other people strongly disagreed that wild animals should be killed, and the rest are in the category of illegal hunting in the park (Katz et al., 2023).

In both the Mole National Park in Ghana and the Tarangire National Park in Tanzania, local communities indicated that conflict in nature reserves and conservation between people and animals resulted from not receiving equitable economic benefits from the parks and not being supportive of livelihoods and community development because they gave out their land for the national parks (Abukari & Mwalyosi, 2020; Ayivor et al., 2020). Thus, this misunderstanding and disagreement between local communities and conservationists influenced people to destroy the parks' fences, force themselves into the park, and access the land illegally despite the restrictions (Smidt, 2022).

2.4 Conflict in natural resource management: policy instruments and strategies

There are various factors contributing to conflicts in natural resource management, particularly such as lack of community participation and involvement (Zoe Wang, 2019; Matseketsa et al., 2019; Clark Bolt & Campbell, 2008; Reed, 2008). Excluding local communities from decision-making and resource management processes can lead to conflicts between them and protected area officials (Hayes, 2006). Governmental entities sometimes violate agreements by allocating land for specific use without consulting local communities, resulting in violent confrontations (Werner, 2001). Digya National Park and Dwesa-Cwebe National Park, China's National Park and Kyabobo National Park are the examples that illustrate lack of community and involvement (Mortson & Kafu, 2022; Ayivor et al., 2019; Tsawu, 2022; Yu et al., 2020). The lack of

community participation may also lead to the continuation of illegal activities within protected areas, further fuelling conflicts.

The example of Pudacuo National Park in Yunnan, China, highlights the problem of insufficient community participation in the planning and management of national parks (Zhou & Grumbine, 2011; Zoe Wang, 2019; Ma et al,. 2023). Although there were attempts to incorporate community participation into the park's plans, the local communities were not given decision-making rights, resulting in negative environmental and social impacts. Similar cases of low community participation and unmet expectations were observed in other protected areas such as Sehlabathebe National Park in Lesotho (Makwindi & Ndlovu, 2021). As a result of insufficient community participation, limited decision-making rights are reported which in some cases, local communities are not granted decision-making authority or meaningful participation in the planning and management processes of national parks (Makwindi & Ndlovu, 2021; Yao, 2020; Zoe Wang, 2019). This lack of inclusion leads to a sense of marginalisation and frustration among the communities.

Further, the government adopted a top-down approach that often, the decision-making processes related to protected areas are driven by centralised authorities, such as government agencies or conservation organisations, without sufficient consultation or involvement of local communities (Peer et al., 2022; Cumming et al., 2023 & Ma et al., 2023). This top-down approach disregards the knowledge, needs, and perspectives of the people who live closest to the protected areas.

Violations of the terms of agreements between local communities and government conservationists also contribute to conflicts. The failure to maintain fences or provide access to resources as promised can lead to confrontations and violence (Williams, 2004; Tia et al., 2021 & Mokhele, 2022). Different government management styles, such as a command-and-control approach, often neglect the socio-economic aspects of local communities and their dependence on natural resources (Wickramasinghe et al., 2014 & (Scherr et al., 2003). This can lead to illegal resource use and lack of cooperation. When governments follow command-and-control strategy in the conservation efforts, local communities resist and ignore the government’s directions and regulations imposed under a command-and-control approach (Song et al., 2022). They continue to access resources and engage in activities that are prohibited by the conservation policies, and non- compliance stems from a perception that their needs and rights are being neglected or infringed upon.

Further, Gverdtsiteli (2023) & Ty et al. (2023) provided that a command-and-control approach often overlooks the socio-economic aspects of local communities and their reliance on natural resources. This has led to a lack of cooperation between the government and local communities and the communities perceive the government's conservation efforts as detrimental to their livelihoods and may resist or avoid collaborating with government agencies (Consorte-McCrea et al., 2022).

Diverse government management styles in natural resources have led to significant conflicts and negative impacts on local communities (Olalekan et al., 2019). Historically, governments have employed a command-and-control approach, without considering the socio-economic aspects of conservation interventions. This has resulted in restrictions on the livelihoods of local communities and a failure to meet expectations in protected areas (Wickramasinghe et al., 2014 & Scherr et al., 2003).

Government interventions often involve the establishment of conservation zones and strict reserves to protect natural resources (Temple, 2023; Wang et al., 2019). However, these measures frequently disregard the socio-economic impacts on local people. Wickramasinghe et al. (2014) and Scherr et al. (2003) highlights that the use of strict protection and regulations in resource management is ineffective, particularly in impoverished areas with limited alternative livelihood options, where local communities heavily rely on natural resources. In such contexts, local people may resist cooperation with government efforts and resort to illegal use of resources. The lack of consideration for the socio-economic well-being of local communities has contributed to the failure of government-managed protected areas to meet their intended objectives (Chauka & Nyangoko, 2023; Ojha et al., 2022).

Some scholars have argued that governments' policy of the designation of protected areas and displacement of local communities can create conflicts, especially when communities are forced to leave their ancestral lands (Jones, Graziano & Dimitrakopoulos, 2020 & Hayes, 2006). This disruption can result in social and economic conflicts between communities and conservationists. The Kruger National Park is one of the examples where numerous communities were forced off their land in order to create the park. Furthermore, inadequate government responsibility and funding for protected areas, as well as the implementation of policies that lead to land degradation and exploitation of resources, can also contribute to conflicts (Silva et al., 2021; Develey, 2021).

The policies that prioritise tourism over environmental considerations can lead to conflicts between stakeholders and conservationists (Silva et al., 2021). For example in Brazil and Nepal, government actions or policies prioritise economic development at the expense of biodiversity conservation, leading to tensions and conflicts (Aryal, Ghimire & Niraula, 2021; Silva et al., 2021).

The emergence of the National Agrarian Policy in the second half of the twentieth century has led to conflicts between local communities and government conservationists due to its impact on natural resource management. This policy, influenced by earlier national policy-making efforts, aimed to promote production and provide land to local communities (Dressler et al., 2013). In the context of Costa Rican conservation, the government allocated land to local communities with the intention of converting forests into pastures and cropland, as well as providing opportunities for low-income farmers to improve their livelihoods in wild areas (Nygre, 1995). However, scholars have stated that this agrarian policy has had unintended consequences, particularly an increase in deforestation rates (LIanes, 2022; Levy et al., 2023). The conversion of forested areas into other land uses resulted in the irreversible loss of species and had detrimental effects on biodiversity conservation. Government authorities advocated the establishment of parks instead of reforestation efforts, as they sought to retain ownership of wild areas (Liu et al., 2022). This conflicting approach had lasting impacts on biodiversity conservation because it limited the ability of local communities to utilise the land for improving their livelihoods. Overall, the National Agrarian Policy, although intended to benefit local communities, has fueled deforestation and hindered biodiversity conservation efforts due to conflicts in objectives between conservationists and community development (Hoffmann, 2022; Souza et al., 2021).

The management of conflict between local communities' activities and natural resource conservation has been a challenging issue in African countries such as Ethiopia & Nigeria (Wassie, 2020; Olalekan, 2019). Conservationists have attempted to address this problem through various strategies. One approach has been to increase the productivity of labour in agriculture, thereby diverting labour away from hunting and reducing the pressure on wildlife (Mogomotsi, 2019). This has been achieved through the adoption of improved labour productivity techniques and the expansion of cultivated land. However, studies have shown that in some cases, such as in the Kruger National Park and Kenyan national parks, these

measures have not effectively reduced natural resource conflicts and, in fact, have sometimes led to an increase in the killing of wild animals (Tanentzap, Lamb, Walker & Farmer, 2015).

Incentive-based policies and legislation have also been implemented to mitigate human-wildlife conflicts and promote biodiversity conservation. Agri-Environmental schemes, for example, have been introduced to provide financial incentives for environmental measures in agriculture (Young et al., 2005 & Meerbeek et al., 2017). Despite these efforts, conflicts persist, and biodiversity remains threatened. Legislation alone has proven insufficient to alleviate conflicts or effectively enforce conservation measures. For instance, Kenya has implemented a policy called the Wildlife Conservation and Management Act, which addresses issues related to wildlife conservation, including the compensation for loss of livestock due to wildlife predation (Drees et al., 2022). Under the Wildlife Conservation and Management Act, communities living in proximity to national parks, reserves, and other wildlife areas are encouraged to avoid killing wild animals. The policy recognises the importance of promoting coexistence between humans and wildlife while minimising conflicts and promoting conservation efforts. According to the Human Wildlife Conflict Compensation Report (2014-2017) (2019), Kenya through Kenya Wildlife Services (KWS) compensated all the affected families financially to prevent the killing of wildlife. However, Mwangi (2022 states that some families did not receive compensation packages due to lack of relevant documentation.

In the long run, involving local communities in the decision-making process and finding solutions that incorporate their perspectives may be more effective and sustainable (Henle et al., 2008; Young et al., 2022). Participatory exercises and dialogue between conservationists and local stakeholders have been shown to help understand different viewpoints and values, but the challenge lies in selecting appropriate participants and representatives who can adequately represent the diverse interests within communities (Redpath et al., 2004).

In the West African context, the Economic Community of West African States (ECOWAS) and its monitoring group (ECOMOG) have aimed to resolve conflicts within the sub region (Mukute et al., 2021). However, conflicts related to natural resource distribution, particularly between groups and national governments, as well as between environmentalists, crop farmers, and pastoralists, have persisted. These conflicts often arise from disagreements over economic land use, which can endanger biodiversity.

2.5 Areas local communities and conservationists collaborate to preserve biodiversity.

Different studies suggest that it is imperative for local communities and conservationists to collaborate for the successful protection of biodiversity (Ullah & Kim, 2020; Armitage et al., 2020) however there are some scholars who argue that conservationists and communities sometimes do not collaborate. For example, (Doley & Barman, 2023; Kopnina et al., 2022) indicates that wildlife management is one of the areas local communities and government conservationists collaborate to influence interactions among and between wildlife, its habitat and people to achieve positive impacts.

Ottolini et al., 2020; Liordos et al., (2020) suggests strategies like hunting and culling as controversial leading to collaboration and disagreement on how it should be practised. In cases where culling may be adopted by the conservationists as a way to preserve biodiversity leading in population control, removal of invasive species as well as disease control among a given population of species, these actions,, can be divisive and could be in opposition to local communities' cultural or spiritual values. For example, Buscher & Fletcher (2019) indicates that in the United States horses are considered very valuable cultural assets therefore incidents of culling them would be considered very offensive to culture and historical beliefs. For instance, in the context of African cultural context, the Maasai tribe in Tanzania and Kenya depend heavily on animals for their livelihoods (Fiore, 2022). Their semi-nomadic lifestyle and rotational grazing practices help maintain ecological balance and prevent overgrazing and their traditional knowledge of the local environment, including medicinal plants, promotes biodiversity conservation by reducing reliance on pharmaceuticals and preserving natural resources (Drees et al., 2022). However, challenges like population growth and changing land use patterns threaten their way of life and the biodiversity they inadvertently protect.

Studies suggest protected areas are also frequently created in order to preserve biodiversity and encourage the wise use of natural resources (Yergeau, 2020; Gordon et al., 2021). On the contrary, these areas may restrict local communities' access to resources and land, even though they may depend on these resources for their livelihoods. Conservationists may have differing ideas on how to manage natural resources, which can lead to disagreements with local communities. For instance, the creation of the Virunga National Park in the Democratic Republic of Congo has come under fire for restricting local communities' access to resources like fishing grounds and firewood, which has resulted in confrontations with local residents (Nelson, 2012).

Co-management of protected areas (CMPAs) has proven to be one of the ways the local communities and the conservationists observe in order to protect biodiversity (Rahman, 2022; Aime & Robinson, 2023). (Brown et al. 2002; Borrini Feyerabend et al. 2004; Kothari 2006) state that co-management of protected areas suggests that different kinds of partners, including local communities and other organisations as well as government conservationists, work together in the management of protected areas. Co-management agreements typically involve institutional structures with clearly defined roles and responsibilities for both local communities and government conservationists (Petursson & Kristofersson, 2021). However, in many nations such as India, Iran & Afghanistan, co-management of protected areas may actually only involve communities in a consultative capacity, with the government conservationists maintaining the decision-making authority, and that is where the issue of conflict between these two partners erupts (Soudeh, 2020; Singh et al., 2016). Equitable authority, responsibility, and benefit distribution are necessary for effective co-management, which should also include conventional knowledge systems and resource management techniques (Kourantidou et al., 2020). Many nations, including France, Canada, and national parks in Bolivia and South Africa, are examples of co-managing for conservation (Kothari, 2013).

Maisonneuve (2023) reiterates that many nations have made significant advancements in the co-management of conservation, but in the majority of them, the traditional model of protected areas, where the government retains primary authority, still predominates. Despite some significantly revised policies aimed at ensuring respect for rights in protected areas, studies reveal that these laws remain unamended and exclusionary models are still predominant (Iddy, 2021).

Co-management of protected areas, good as it is, may also result in conflicts between the local communities and the conservationists (Senghor et al., 2023 & Chen et al., 2022).This may be a result of community members whose lands were taken without their consent when protected areas were first established resulting in conflicts as the local communities end up exploiting the land illegally to extract benefits (Colchester et al., 2009).

Furthermore, the concept of co-management seamlessly transitions into the realm of collaborative management. Collaborative management through institutional arrangements is a key area where local communities and government conservationists work together (Raycraft, 2022 & Rocca & Zielinski, 2022). The institutional structures for collaborative management

come in a variety of shapes, starting with the official acknowledgement of local communities' customary tenure rights, which grant them very limited access to lands with natural resources (Castro & Nielsen, 2001).

Collaborative management is seen as a strategy to effectively, fairly, and sustainably advance conservation and livelihood goals (Nath et al., 2020). However, Colvin et al., (2020) asserts that the process of involving local people and government conservationists has distinct objectives over the utilisation of natural resources as well as various levels of power to influence talks. As a result, government conservationists with the most authority frequently use those resources to advance their own interests

Different studies support the idea of community empowerment for the perfect preservation of biodiversity. Studies indicate that there are different methods different government conservationists use to preserve natural resources and promote community empowerment Stone & Stone (2022) & Shunglu et al., (2022). Syahza & Siregar (2021) & (Muttaqin et al., 2019) affirms that Community-based forest management (CBFM) is one of the methods of community empowerment that can be utilised as a strategy for biodiversity protection. Fang (2020) & Enabulele & Ekhator (2022) proclaim that improving the quality of education systems, spurring economic growth, and providing essential skills for the local community members can result in empowered community members who will in turn be very observant of their interaction with the wildlife and feel obligated to protect it. For instance, there are different countries where community empowerment for biodiversity conservation protection provide insights into the effectiveness of different strategies. In Africa, community-based conservation initiatives have been implemented to promote community empowerment and biodiversity protection. One notable example is the community-based natural resource management (CBNRM) program in Namibia (Aravamudhan et al., 2023). Through this program, local communities have been given the authority to manage and benefit from natural resources, including wildlife. This approach has led to the recovery of wildlife populations, such as elephants, and improved local livelihoods through tourism and other sustainable activities (Child et al., 2009).

In Sub- Saharan Africa, the establishment of community conservancies has demonstrated success in biodiversity conservation and community empowerment (Stone & Stone, 2022). For instance, the Northern Rangelands Trust (NRT) in Kenya has established community conservancies covering vast areas of land (Schetter et al., 2022) These conservancies involve

local communities in conservation efforts, leading to increased wildlife populations, improved ecosystem health, and socio-economic benefits for the communities (Oduor, 2020).

In Lesotho, the empirical example is the Ts'enekeng in Semonkong as mentioned in Rants'o's article, which serves as evidence of how community empowerment through education and local involvement can lead to successful biodiversity protection (Rants'o & Ketsi, 2020). When communities are empowered, they become more observant of their interactions with wildlife and feel a sense of responsibility to safeguard it for future generations (Rants'o & Shale, 2019 & Chatanga & Kose, 2021).

Local communities and government conservationists collaborate through community empowerment. Government conservation initiatives are criticised as ineffective Bitariho et al. (2022) and have failed to improve the livelihoods of local residents living in or around the protected areas. This is one of the most pressing concerns resulting from the rapid growth of tourism in developing countries, which, as a result, causes conflict. One example of a protected government initiative for community empowerment that failed is Kruger National Park. The park's existence had an impact on many local communities, but it was successful in implementing SANParks programmes that aimed to develop, protect, and promote a system of sustainable national parks. Despite the successes and efforts to increase employment, the standard of education, and economic growth, it proved difficult to put community projects outside Kruger's scope into action. They appear to be democratically run but are vulnerable to abuse and manipulation by those in positions of authority, which causes conflict within communities because some people stand to gain more than others (Mabibibi, Dude, and Thwala, 2021; Long et al., 2020; Doubleday, 2020; Mabibibi et al., 20217 Fang et al., 2021).

One critical area of collaboration between local communities and government conservationists in biodiversity protection as studies reveal is policy implementation (Miah et al., 2023 & Bhola et al., 2021). It is indicated by (Raimi et al., (2022) & McNeely, 2020) that policies governing biodiversity promote its protection, protection, conservation as well as sustainable use of diverse biological ecosystems and habitats which will result in the creation of remarkable public benefits as well as contribution to their social wellbeing. On the other hand, studies reveal that these biodiversity protection policies may result in conflicts over access disparities and sudden access restrictions Lunstrum et al, (2021) & Meerbeek et al., (2019). For example, Africa is a notable example of collaboration between local communities and government conservationists in policy implementation is the Community-Based Natural Resource

Management (CBNRM) approach (Heffernan, 2022). CBNRM involves empowering local communities to manage and benefit from natural resources, including biodiversity, in their areas. This approach has been implemented in countries such as Namibia, Botswana, and Zimbabwe, where communities have been granted rights and responsibilities for sustainable resource use. The CBNRM approach has shown positive outcomes in terms of biodiversity conservation and community development (Rampheri & Dube, 2020)

In Sub- Saharan Africa, collaboration in Biodiversity conservation policy implementation can be seen in the establishment of community conservancies (Dittmann & Mahn, 2023). Dittmann & Mahn (2023) states that community conservancies are community-led initiatives aimed at conserving biodiversity while providing livelihood opportunities for local communities. The conservancies have been successful in countries such as Kenya, where they have contributed to wildlife conservation, improved land management, and socio-economic development of local communities (Otianga et al., 2021).

Lesotho is facing a unique challenge in biodiversity conservation due to its geography and socio-economic context (Rants'o & Ketsi (2020) & Chatanga & Seleteng-Kose (2021)). The government of Lesotho has implemented various policies and initiatives to address these challenges. For example, the Lesotho Highlands Water Project (LHWP) aims to harness water resources sustainably while considering the ecological and socio- economic impacts (Chatanga & Kose, 2021; Rants'o & Ketsi, 2020). The project involves collaboration between the government, local communities, and international partners to balance water management with biodiversity conservation in the region (Yang et al., 2022).

2.6 Effects of biodiversity conflict on biodiversity and community livelihoods

Different studies on biodiversity conservation reveal that conflicts on biodiversity conservation are interrelated with community livelihoods as it leads to increased deforestation and habitat destruction as people try to meet their basic needs such as food, shelter, and firewood (Nkembi, Nkengafac & Forghab, 2022; Singh et al., 2022 & Raimi et al., 2022). This results in a loss of biodiversity, resulting in climate change and altering the functioning of the ecosystems which results in their inability to provide the society with the goods and services needed to prosper (Reed et al., 2022).For example, in the Democratic Republic of the Congo, conflict has led to extensive deforestation in protected areas, threatening the survival of endangered species such as gorillas and elephants and depriving local communities of their livelihoods (Nellemann et al., 2016 & Plumptre et al., 2016).

It is further noted that in areas where conflicts are prevalent, poaching and wildlife trafficking increase as armed groups seek to finance their activities causing severe consequences for biodiversity and the communities that depend on it (Dalpane & Baideldinova, 2022). Funk et al., (2022) makes reference to the fact that in Central Africa, illegal trade in ivory and bush meat has increased in areas affected by conflict, threatening the survival of many species and affecting the livelihoods of local communities.

Furthermore, conflicts can lead to the abandonment of farmland and grazing areas, which can result in soil erosion and land degradation (Santarsiero et al., 2023 & Hossini et al., 2022). This can have a significant impact on biodiversity and affect communities' ability to farm and raise livestock. For example, in the Middle East, the conflict in Syria has led to the abandonment of farmland and grazing areas, resulting in severe soil erosion and land degradation that has affected the livelihoods of local communities (UNCCD, 2019).

Loss of land rights for local communities is attributed as one of the causes of conflict that may have adverse impacts on biodiversity preservation. Studies present a number of ways in which land rights can be lost (Keenan, 2023 & Debebe et al., 2023) indicates that this loss may be a result of land being seized for military purposes or when refugees and other displaced people settle in new areas. Further, Dowie, 2009 & Neumann et al., 2016) avers that local communities' engagement in traditional activities such as hunting, fishing, or gathering, may result in conflict with conservation laws and regulations because conservation organisations render these activities as threats to biodiversity and criminalise them, leading to the loss of land rights for local communities. Moreover, Colchester & Lohmann, (2011) reveals that without secure land tenure, communities may be unable to manage natural resources sustainably, and their livelihoods may be undermined resulting in atrocious interaction between the members of the community and the biodiversity which would later result in the loss of land rights loss.

Conflict related to biodiversity conservation can indeed have a negative impact on tourism, which in turn, affect the livelihoods of communities dependent on tourism for income. The perception of insecurity among tourists in conflict-affected areas can lead to a decline in tourism, resulting in decreased income for local communities (Ahmadzai, 2019 & Khatib, 2017). This connection between conflict, biodiversity, and tourism can be observed in various instances, including conflicts between rangers and poachers in protected areas. One notable example is the conflict between rangers and poachers in Kruger National Park in South Africa (Smidt, 2022) Kruger National Park is known for its rich biodiversity, including iconic wildlife

such as elephants, lions, and rhinos. However, (Gogoi & Gogoi (2022) acknowledges that the park faces significant challenges from poaching, particularly of rhinos for their valuable horns. The conflict between rangers, who are tasked with protecting the wildlife, and poachers seeking to profit from illegal activities can create an environment of insecurity.

Further, the presence of such conflicts and the perceived risk to personal safety can deter potential tourists from visiting the park (Lai et al., 2023). Tourists may be hesitant to travel to an area where they perceive a high risk of encountering armed poachers or getting caught in the crossfire between rangers and poachers (Anagnostou et al., 2020). This hesitation and perception of insecurity can lead to a decline in tourism, negatively impacting the local economy and the livelihoods of communities dependent on tourism (Tlali & Musi, 2022) .The decline in tourism resulting from conflicts related to biodiversity can be detrimental to both conservation efforts and local communities.

In their shared ecosystem, human and animal competition for natural resources and space is growing more widespread, leading to a shortage of resources (Wackermagel et al., 2021 7 Long et al., 2020). The local community's way of life has suffered financial losses as a result of these segments, which have also had a negative effect on wildlife protection. Marginal communities are disproportionately negatively impacted by conflict in biodiversity conservation due to loss of access to resources for their livelihoods, such as domestic animals and crops, as well as income loss (Dort, 2023 & West et al., 2006). Additionally, retaliatory killing by humans may have a greater detrimental effect on wildlife.

Another form of conflict on biodiversity as highlighted by Meyer & Börner (2022) is the human-wildlife conflict. Meyer & Börner (2022) make reference to the people living in close proximity to the Borena Sayint National Park (BSNP) in Ethiopia overlap with the needs of wildlife. They indicate that humans utilise the park for grazing and water source grounds, which in turn reduces the foraging opportunities and access to water sources for wildlife species and increases disturbance to wildlife, leading to human-wildlife conflict (Biset et al., 2019).

2.7 Chapter summary

Overall, this chapter provides a comprehensive overview of the theoretical framework underpinning conflict in biodiversity conservation, analyses the nature of conflicts, examines policy implementations and natural resources management conflicts, explores areas of collaboration, discusses conflict management strategies that promote conflict, and highlights the effects of conflict on biodiversity conservation.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research strategy was covered. It contained information about the research methodology, research design, study description, study population, sample, sampling techniques, and data collection methods and tools. Data analysis, reliability and validity in qualitative and quantitative research, ethical concerns, and the study's limitations were also examined.

3.2 Research approach

Three research methodologies are presented by Ishtiaq (2019) & Williams (2007): mixed methods approach, qualitative research, and quantitative research. According to Cresswell (2014) and Daniel (2016), qualitative research is a comprehensive technique that includes discovery, enables the researcher to determine a level of depth through close involvement in the actual experiences, and may be used to cover a significant population collecting numerical data. Quantitative research is a method that entails data collecting in order to quantify information and submit it to statistical analysis in support of opposing knowledge claims (Cresswell, 2003; Leedy & Ormrod, 2005 & Mackenzie & Knipe, 2006). Due to this, Dawai et al. (2021) asserted that mixed methods are pragmatic and include parts of both qualitative and quantitative approaches to support and validate each other, promote rationality, and provide the research with insights and dependability. This is in contrast to qualitative and quantitative research methodologies.

The study used a mixed approach. Initially, the research looked at how human activities and biodiversity conservation interact with local communities, drawing on existing expertise in the field of natural resources in Lesotho. Since conflict in nature reserves and conservation differ, as noted in the literature, a portion of this study used the qualitative features of the mixed methods. Second, the study utilised quantitative methods to supplement the qualitative ones and determine the degree to which protected regions like Lets'eng-la-Letsie have many disputes over the preservation of natural resources. Mixed methods approach had been used successfully in different contexts. According to George (2021) the rationale for using mixed methods is credibility; therefore, if the quantitative and qualitative data are consistent, the validity of the research conclusion will be strengthened. Additionally, according to Cresswell & Cresswell (2018), a mixed methods approach is used to comprehend a research problem more thoroughly. On the other hand, Cresswell & Cresswell (2018) provided that, it is mixed because neither qualitative nor quantitative methods are sufficient to capture the trends and precise details of a

situation on their own, such as the complex issue of the conflict between conservationists and local communities. The strength of one sort of technique frequently balances out the flaws of the other, so when utilised together, they complete each other and permit extensive analysis (Mortson & Kafu, 2022). For instance, research that only uses quantitative data frequently has difficulty incorporating participant experience; therefore, the use of qualitative data helps to clarify and enhance the findings from quantitative studies. In addition, because qualitative research frequently only captures the experiences of the participants, adding quantitative data helped to confirm the conclusions of quantitative research.

The researcher can opt to incorporate a mixed methods approach in a number of different ways. With the use of concurrent, exploratory, and explanatory designs, the researcher can integrate at the design level. According to Fetters et al. (2013), there are three approaches to integrate at the interpretation and reporting levels: (1) through story; (2) through data transformation; and (3) through collaborative presentations. Additionally, the researcher has the option to link data collection and analysis through sampling at the techniques level, interpretation and reporting at the last level, and ultimately the integration level. In order to complement the findings and address other research problems, this study was included in chapter 4 specifically.

3.3 Successful studies that used mixed methods in addressing conflict between human activities and biodiversity conservation

Mixed methods approach has been successfully employed in several studies. Sterling et al. (2017) conducted a study in the UK to evaluate stakeholder involvement in biodiversity conservation, aiming to identify aspects of stakeholder engagement. Balfour et al. (2020) conducted a study in Brington, UK, to explore the potential benefits and drawbacks between human and natural resource needs in the context of agro-ecological farming and nature conservation. They utilised mixed methods to gather perspectives from local communities on the advantages of managing protected areas in-depth.

Similarly, this study employed mixed methodologies to address various research concerns. Notably, in Lesotho, there is a lack of studies that utilise the mixed methods approach to investigate conflicts between human activities and biodiversity conservation. For instance, Rants'o and Shale (2019) utilised a qualitative approach to assess the contribution of the Serumula Development Association's community-based environmental resources conservation program, specifically the Tšenekeng Botanical Garden, to environmental conservation and livelihoods. Additionally, Wittmayer and Büscher (2010) conducted a study analysing the

conflicts arising from discourses of conservation and development between local communities and conservationists. However, there was a dearth of studies employing a mixed methods approach in the realm of conflict and natural resources. Therefore, this study stood out as it utilises a mixed methods approach to investigate conflicts and natural resources, offering a novel perspective on the subject matter.

3.4 Research design

Boru (2018) defined a research design as a comprehensive method adopted to address the issue that should logically combine different study components in order to address the issue systematically. When compared to qualitative and quantitative approaches, the mixed-methods approach utilises a unique study design, collecting quantitative and qualitative data simultaneously and letting one approach feed the other. The researcher's ability to collect data that logically responds to the study's research questions was made possible by the research design. Dawai et al. (2021) suggest that when choosing a mixed-approach research design, it is important to prioritise either qualitative or quantitative data collection and processing. If not, both approaches might be equally useful depending on the research topics for the study.

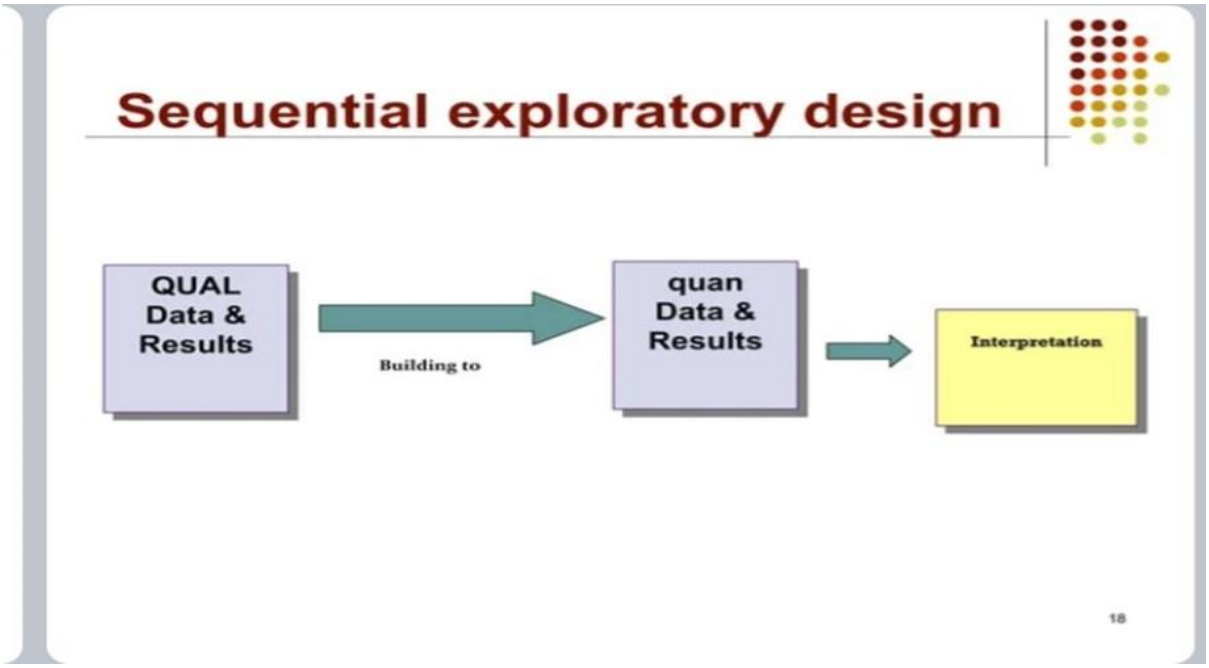
Nonetheless, there are a number of research designs used in mixed methods research, including the explanatory sequential, concurrent or convergent parallel, exploratory sequential, and embedded mixed methods designs (Cresswell, 2014). A researcher uses a single-phase methodology called concurrent parallel design to gather both quantitative and qualitative data, analyse each type separately, and then compare the findings to determine if they support or contradict one another. The researcher collects quantitative data in the first phase of a two-phase explanatory sequential design, examines the results, and then builds on the results in the second, qualitative phase (Sharma et al., 2023 & Sharma et al., 2023). To explain the link in the quantitative phase, an exploratory sequential design first conducts qualitative research, analyses the results, and then builds on the results (Cresswell (2022); Cresswell (2006); Cresswell, 2014 & (Cresswell & Cresswell, 2018).

An exploratory sequential mixed method research design was used in this study since there had not been a lot of investigation into the relationship between human activity and biodiversity conservation in Lesotho. The design is regarded as the beginning of the research process and aids in the development of alternative hypotheses for the phenomenon (Othman et al., 2020). This study's approach helped people better comprehend the tension between conservation and nature reserves. Quantitative and qualitative data were kept apart during data collection and

processing. In Chapter 4, the study started integrating the outcomes and conclusions from the two strands of the mixed-methods technique.

According to Cresswell (2014), there are two phases in an exploratory sequential mixed method design. In the first phase, the researcher will start by initially looking at qualitative data, text data, to explain why there is conflict between local communities and government conservationists despite the fact that some measures have been adopted. Quantitative data was gathered in the second phase to help explain the links in the qualitative data and give a basic picture of the study challenge as shown in **Figure 3.0**. Also, this type of design was employed, in accordance with Cresswell (2014), to enhance measurements with specific population samples and to assess the generalizability of results from small samples of the community.

Fig 3.0



Source: (Mahmood, 2013)

3.5 Description of the study area

The study area for this research encompassed several communities within the Quthing district of Lesotho. Specifically, it focuses on Lets'eng-la-Letsie. This area falls under the jurisdiction of the Mphaki Community Council. According to the Lesotho Population Census of 2017, the population of Mphaki Community Council was 20,288 in 2006. Quthing is one of the eleven districts in Lesotho and is the eighth most populous.

Lets'eng-la-Letsie, also known as Lake Letsie, is a protected area where conflicts arise. It is situated at the source of the Quthing River, one of the tributaries that contribute to the great Senqu River. Located in the Mphaki Community Council of the Quthing district, Lets'eng-la-Letsie is approximately 200 kilometres southeast of Maseru, near the South African border crossing at Ongeluksnek (Fanana, 2016; Motanga, 2006 & Malope, 2014).

Sediment cores indicate that a natural lake has existed at the Lets'eng-la-Letsie site since the mid-1800s (Kestrel, 2021). However, in 1968, the Mohlakeng River was dammed, resulting in the enlargement of the small lake and the creation of a freshwater reserve named after King Letsie II. The catchment area was designated as a Protected Area in 2001 and as a Catchment of International Importance in 2004. As shown in Appendix D, Lets'eng-la-Letsie is part of the Maloti-Drakensberg system, renowned for its high biodiversity, with over 30% endemism. It consists of a lake that was artificially created on the Mohlakeng River, a significant tributary of the Quthing River (Fanana, 2016).

As Appendix E shows, currently, Lets'eng-la-Letsie is primarily used for grazing and plays a vital role in providing resources such as grass for thatching, medicinal herbs, timber, and fishing opportunities (Maloti Drakensberg Transfrontier Conservation and Development Area, 2006). However, due to unrestricted access, the area is facing challenges such as overstocking, overgrazing, erosion, and overexploitation of its natural resources. Despite being designated as a protected area, Lets'eng-la-Letsie is experiencing degradation, resulting in the loss of valuable natural resources (Kahlolo et al., 2021; Lannas and Turpie, 2010; Lekhanya, 2020 & Rose et al., 2020).

3.6 Population

The population under consideration for this study consisted of the communities located near Lets'eng-la-Letsie and other communities that are far away from Lets'eng but utilise the area for grazing purposes. According to the Bureau of Statistics in 2016, the area Lets'eng-la-Letsie and its nearby communities' population were 1135 individuals.

3.7 Sample and sampling technique (Qualitative Phase)

A sample is a portion of a population that reflects the features of the full study population, from which the researcher would infer conclusions (Bhardwaj (2019) & McCombes (2019); Shokat & Parveen (2017). A sampling, according to Taherdoost (2016), is the process of selecting a subset from the selected representative of the population. For the qualitative phase of the study,

key informants, including the chiefs, councillors, ministry of agriculture, and ministry of tourism, environment and culture, police officer, ministry of range, a sample was purposefully selected, and the participants were presumptively knowledgeable about the Lets'eng-la-Letsie Ramsar Site. In this study of a qualitative approach, sample size was determined by the point of saturation. Purposive sampling, sometimes referred to as judgemental, selective, or subjective sampling (Taherdoost, 2016). In order to choose the units to be examined, such as individuals, cases, organisations, events, and pieces of data, the researcher must use judgement (Parveen and Shokat, 2017). Purposive sampling was used by the researcher since it will enable deliberate selection of study participants.

For a qualitative phase, non-probability sampling was used. Nikolopoulou (2022) claimed that non-probability enables the selection of a case based on a specific context and a sample that corresponds to the study's findings. Due to their extensive understanding of the topic under study, key informants supplied the pertinent information. As a result, these informants were given the study first-hand data. Non-probability sampling, especially for large populations, is effective, time-saving, and accurate (McCombes, 2022). The non-probability sampling methodology, in contrast to the probability sampling method, draws the sample using non-random techniques (Parveen & Shokat, 2017).

3.8 Sample and Sampling techniques (Quantitative phase)

A group of respondents was recruited using simple random sampling under proportional sampling, in which a researcher interviewed a population of 72 participants using one-to-one interview. However, some participants did not answer and therefore the researcher used a valid percentage as the only people who participated. The study was carried out on five communities at Lets'eng-la-Letsie as the target group for a quantitative sample. The target group, according to Bhatia et al. (2020), is the particular community or demography that the study intends to analyse or acquire information from. To ensure that each unit in the study had an equal chance of being selected to take part in the investigation, a straightforward random sampling method was adopted. A simple random sampling gave each participant an equal chance of being picked for the sample. In contrast to non-probability sampling, probability sampling uses a random method to select a sample, giving every element in the population and every potential combination of elements an equal chance of being picked as a member of the sample (Illiyasu & Etikan, 2021). The researcher randomly selected some of the households to include for the interviews because some of the households appeared to be small and dispersed throughout a

number of villages. This was done to assure representativeness of the total population and prevent bias. For the study's collection of quantitative and qualitative data, both closed- and open-ended questions were used. The researcher made sure the one-on-one interviews were conducted consistently to get the participants' perspectives on the study's research problem.

3.9 Data collection in a qualitative phase

3.9.1 Interview

There are three basic styles of interviews, namely organised, semi-structured, and unstructured (Naz et al., 2022). However, semi-structured interviews were performed in this study to collect first-hand information from key informants. According to Ruslin et al. (2022), semi-structured interviews have essential questions that assist outline the topics to be investigated but also provide the researcher the freedom to go off course to study a particular idea in greater depth. Depending on the researcher's preference, data were gathered in both Xhosa and Sotho and their responses were recorded and transcribed at a later stage.

The researcher was able to get a good image of the respondents' experiences by using this technique to gauge their feelings and attitudes. After developing a connection and feeling of trust with the participants, the researcher gathered thorough and excellent data from freely conversing respondents. The researcher detected any hearsay while speaking with the respondents and asked them to confirm, deny, defend, or elaborate on it (Legard et al., 2003).

3.10 Data collection in a quantitative phase

3.10.2 Close-ended questionnaire

During one-on-one interviews, closed-ended questions were employed. The 30 research questionnaires, which includes a list of questions addressed to the participants in a specific order, was created to avoid bias and guarantee that every participant is asked the same questions. Kabir (2016) underlined that getting high-quality raw data is the main goal of data collection because this information may be transformed into rich data analysis, which enables the development of solid arguments for research issues. Throughout the process, a conductive regulated verbal discussion was maintained, enabling the responders to fully express themselves (Lang et al., 2023). According to Rudnick & Munz (2022), it is crucial that the researcher establishes consistency in the manner they ask questions throughout the individual interview so that the researcher discloses like a regular talk and a question-and-answer session.

Due to the more structured nature of questions in quantitative data, oral questionnaires are used instead, and researchers only ask the standardised set of questions (Ahmad, 2019).

3.11 Methods of data analysis

3.11.1 Qualitative research approach

Thematic analysis, which identifies patterns across the raw data and organises the data into useful themes, is a method that was employed in this study and is becoming more and more popular for analysing qualitative data in the social sciences (Braun et al., 2019; Campbell et al., 2021 & Thomson, 2022). Perhaps the phrase "thematic analysis “acts as an umbrella term for a number of, occasionally quite varied, patterns-finding techniques for qualitative data (Braun et al., 2019 & Lester et al., 2020).

According to Braun et al. (2020), thematic analysis is a method for precisely identifying, categorising, and illuminating recurring patterns of meaning (themes) in a dataset. By concentrating on meaning across a dataset, the researcher can see and comprehend communal or shared meanings and experiences. Therefore, this method assisted the researcher in identifying and interpreting commonalities in the way a subject is talked or written about.

Thematic analysis has been widely used in a variety of fields due to its broad and flexible nature, including psychology (Frith & Gleeson, 2004), medicine (Cassol et al., 2018), health services, tourism (Costa et al., 2016), HRD (Human Resource Development) (Israel et al., 2017; Perkins, 2018; Tsai, 2016), and education (Halverson et al., 2014). According to Michael (2018), data patterns were analysed, reported on, and found using thematic analysis. As this analysis is adaptable, it was useful in this study to learn about people's perspectives on the conflict between local communities and government conservationists as well as their experiences with it.

According to Thomson (2022), there are seven (6) phases that researchers can take to comprehend the thematic analysis: transcription of the data, familiarisation with the data, generating the initial code, development of the themes, review of the themes, definition and naming of the themes, and finally, presentation of the findings. Using this approach of analysis, the researcher frequently listened to the audio recordings made throughout the data gathering process before transcribing the audio into text. Based on the research questions for the study, preliminary codes and categories were organised and created using the Atlas.ti 23 edition.

3.11.2 Quantitative research approach

Ali (2021) defines quantitative analysis as a systematic procedure for gathering and analysing measurable and verifiable facts. Analysing quantitative research has the goal of putting a hypothetical situation into numbers (Cowles, 2005). In a quantitative analysis, a researcher systematically categorises, summarises, and depicts observations by taking a quantitative approach to a phenomenon (Ali, 2021 & James and Simister, 2020). Secondly, it allows a researcher to comprehend and make judgments regarding a phenomenon that is studied in a specific, limited group (Levitt, 2021).

Descriptive statistics and inferential statistics are two different methods of quantitative data analysis (James & Smister, 2020). Both descriptive statistics and inferential statistics were employed in this study to characterise and summarise data presented as percentages, means, modes, or medians and make estimation of the population and test hypothesis (Ajah et al., 2022 & Bhandari, 2020). The use of this kind of data analysis was warranted since it aids in data visualisation and makes it possible to show data in a meaningful and understandable way, facilitating a simpler interpretation of the data. For variables, external validity was tested for the consistency using the Cronbach's Alpha test and the results showed that there is a relationship between the variables (nature of conflict and biodiversity conservation) with a value of 0.9 alpha level.

To quickly transform data and explain the meaning of the statistics, Excel, a statistical programme, was used as the analytical tool. This software supported all numerical values and provided reports and graphs as examples. An analysis of the Lets'eng-la-Letsie villages' demographics and the conflict between local residents and government conservationists was done using the chi-square test.

3.12 Validity and reliability (qualitative phase)

Qualitative reliability shows that the researcher's methodology is consistent across multiple researchers and projects, whereas qualitative validity denotes that the researcher verifies the validity of the findings by using specific techniques (Hendren et al., 2023). Data blinding and including several sampling groups in the study are two methods that were used to determine the validity of this investigation. The study included both adults and young adults in order to increase diversity and eliminate prejudice for reliable outcomes. To prevent the research from being biased by the respondents' preconceived beliefs, the researchers also used the restriction of the quantity of information supplied with the respondents. These actions contributed to

proving the reliability of the findings and the accuracy of the research. Also, the researcher analysed the questionnaire to determine the validity of the instrument and eliminated any items that do not pertain to the study's topic.

3.12.1 Confidentiality

Confidentiality verifies whether the research findings represent probable information acquired from the participants' original data and whether they are an accurate interpretation of the participants' original viewpoints to provide reliable and credible results (Kyngäs et al, 2019). The researcher ensured credibility through triangulation, with multiple data sources that were used and collected at different times using different data collection methods. In this study, the data was collected at different times because key participants were interviewed first, while the other population in the quantitative phase were conducted later using a one-to-one interview after a cursory analysis of the data from the key participants (Ghafouri et al. 2016). The participants were interviewed at different places.

3.12.2 Transferability

This is referred to by Consultores (2020) the extent to which findings from qualitative research can be applied to different settings or situations with different respondents. By giving a thorough account of descriptive information about the resea rch environment, setting, sample, sample size, sample procedure, demographics, participant characteristics, and inclusion and exclusion criteria, transferability was ensured. Further, the researcher purposely selected diverse participants and contexts to ensure the potential transferability of the findings (Nyirenda et al., 2020)

3.12.3 Dependability

Dependability is referred to by Rivka (2021) as the stability and consistency of the qualitative findings, which evaluates whether the outcomes would be consistent if the study were repeated under comparable circumstances. The researcher employed methodological transparency, which explicitly outlined the research design, data sources, and data collection techniques, to ensure dependability in this study (Johnson et al., 2020). This makes the researcher's findings understandable.

3.12.4 Trustworthiness

The study used a variety of strategies to ensure trustworthiness. First, the researchers built trust by actively participating in and being immersed in the research environment, which helped fully comprehend the participants' experiences. In the data gathering process, this strategy increased authenticity and trust (Rose & Johnson, 2020 & Manfreda et al., 2023). Second, triangulation was utilised to increase the reliability of the research by using several data sources, research methodologies, and researchers investigating the same topic. The study's reliability was boosted by validating data from various angles (Lemon & Hayes, 2020 & Aguilar-Solano, 2020). In order to validate and support the findings, the researchers also used a wide range of data sources, such as questionnaires and interviews. The credibility of the study was further enhanced by the inclusion of comprehensive descriptions of the research setting and findings (Kekeya, 2021).

3.12.5 Confirmability

When data are examined and rechecked during data collection and processing to verify that conclusions are probably replicable by others, conformability in qualitative data was assured (Williams, 2021 & Mehrpour & LaToza, 2023). This was documented by a clear coding that identifies the codes and patterns identified in analysis. The researcher ensured credibility using confirmability to confirm both qualitative and quantitative data.

3.13 Validity and reliability (Quantitative phase)

In the quantitative phase, there are various types of validity, including internal and external validity. To test validity and reliability in a quantitative study, the researcher can use various statistical techniques such as Cronbach's alpha for assessing internal consistency, multicollinearity analysis to check for collinearity among variables, and linearity tests to examine the relationship between variables. Initially focusing on internal and external validity, internal validity is a metric indicating how well a study was conducted and how accurately the results reflect the population under examination (Danese, 2020). External validity is the degree to which the results are applicable to the real world. (Ahmed & Ishtiaq, 2021). Therefore, using these two concepts enabled the researcher to assess the validity and significance of a research study's findings. In order to ensure the internal validity of a study, the researcher takes into account a number of aspects of the research design that would raise the likelihood that the researcher can reject alternative hypotheses (Viglia et al., 2021). Nonetheless, the researcher

did it in a number of different ways to ensure internal validity. Many elements, such as blinding, experimental manipulation, random selection, and strict study protocols, can enhance internal validity in research (James & Andrew, 2022). Binding is a technique used to reduce bias in research results since the researcher was not able to know which people are the actual conflict suspects or receiving the proper help, therefore the researcher was less likely to unintentionally give little clues that could affect the research's findings (Chetty & Thaku, 2020). Drawing a random sample from the population at large represented random selection, which will reduce the likelihood of bias (Chetty & Thaku, 2020). Last but not least, adhere strictly to the study protocol by carrying out the steps in the right order throughout the experiment to avoid introducing any unwanted consequences. For instance, treat one set of study participants differently from the other.

3.13.1 External and internal validity in Quantitative phase

External validity

The application of findings to comparable individuals, environments, and circumstances is the essence of external validity. However there are other ways to improve external validity, including doing a pilot study which is a study outside before undertaking the real study, in a natural context, in order for the researcher to demonstrate validity in the study and the multi-side places to provide a more diverse sample and identify potential contextual variations. Setting criteria for who can participate in the study so that the population being examined is precisely defined is known as inclusive and exclusive criteria (Cuncic, 2022 & Bhandari, 2021).

External validity, as defined by Egami & Hartman (2022), pertains to the extent to which research results can be used generally beyond the specific sample and setting where the research took place. To assess external validity in the context of their investigation on the relationship between the nature of conflict and biodiversity conservation, the researcher employed cross-cultural studies, which allow for the examination of whether relationships between variables hold true across different cultural contexts (Meuleman et al., 2022). Conducting studies in diverse cultural settings and regions worldwide, such as Sehlabathebe National Park, Bokong Nature Reserve, and Lets’eng-la-Letsie Nature Reserve, the researcher sought to replicate the original study's design and methods and observed that, nature of conflict and biodiversity conservation relate. Consistent patterns and significant relationships emerged

across these varied settings and strengthened the external validity of the findings, suggesting broader applicability of the observed associations across different cultures (Wu et al., 2022).

Internal validity

In order to boost internal validity and minimise bias, the researcher randomly assigned individuals to a comparison group and a control group (Barker et al., 2023). Pre-experimental and experimental research used in the form of a pilot study. Typically, seventy-two people whose lives were affected by the conservation of biodiversity at Lets'eng-la-Letsie were questioned, and a Cronbach's alpha was utilised, which is a gauge of the internal coherence or dependability of a group of items or scales inside research questionnaires (Nawi et al., 2020 & Olaniyi, 2019). In this study, Cronbach's alpha was used to measure the internal consistency or reliability of a set of items or scales within the research questionnaires. Emerson (2019) explained that Cronbach's alpha values range between 0 and 1, with higher values indicating greater internal consistency. This means that the items in the scale are closely related and reliably measure the same construct. To calculate Cronbach's alpha, several steps were followed using the data collected and entered into the statistical software, Excel: A) the number of items in the questionnaire was identified. B) The sum of the item variance per question was computed. C) The variance of the total scores was determined. Cronbach's alpha was then calculated based on the correlations between the items and the overall variance of the scale. Upon performing the calculations, the study found that Cronbach's alpha value for the relationship between the variables ‘nature of conflict’ and ‘biodiversity conservation’ was 0.979066. This high alpha value indicates a strong internal consistency within the scale, suggesting that the items in the questionnaire are closely related and reliably measure the intended construct, i.e., the association between all variables used in the study (demographic characteristics and nature of conflict.

3.14 Ethical considerations

This study complied with all applicable ethical criteria, including those relating to informed consent, anonymity, confidentiality, and the potential for harm. All participants were informed of their freedom to choose whether or not to participate in the study and that they might leave at any time without facing any repercussions. All participants gave their informed consent after receiving and understanding all the information they needed to decide whether or not to participate. This contained information on the benefits, risks, funding, and institutional support for the study. After reading a piece, participants were asked whether they had any additional

questions. If they agree to participate, they can sign the consent form. However, because data was gathered from people with limited literacy, they were given a verbal explanation of the consent form before they agreed to take part (Bhandari, 2021; Cacciattolo, 2015 & Zegwaard & Fleming, 2018)**.**

3.14.1 Anonymity

Anonymity means that the researcher does not know who the participants are and the researcher cannot link any individual participant to their data (Braun et al., 2020). The only way to ensure anonymity is to avoid gathering any data that could be used to identify a specific person, such as names, phone numbers, email addresses, IP addresses, physical traits, photographs, and videos. To truly anonymised data collecting, however, may sometimes be difficult. For instance, data gathered over the phone or in person cannot be entirely regarded as anonymous because certain personal identifiers (such as phone numbers or demographic data) cannot be hidden. As a result, a random one-digit number was assigned to each participant. The participant numbers and individually identifying information was kept separate from the survey data by the researcher. Only the participant numbers were used to link the data to personally identifying information (Sapiezynski et al., 2019 & Williams et al., 2021).

3.14.2 Potential for harm

The researcher took into account all potential sources of participant injury. There are many different ways that harm can manifest. Psychological harm caused by delicate inquiries or chores that could arouse unfavourable feelings like guilt or fear. Social risks, public embarrassment, or stigma can all result from participating in social harm activities. Physical harm, including pain or injury, may be caused by the study's methods. Legal harm, which might include disclosing sensitive information that poses a danger of legal trouble or a violation of privacy. Therefore, the researcher considered every possible source of harm as well as realistic methods to reduce it throughout the study. The researcher discussed harm reduction tactics and how to make sure participants are aware of any possible risks of harm before the study even starts (Goldman et al., 2019). In the event that participants were in danger of harm, the researcher stood ready to provide them with resources, counselling, or medical services (Kaplan et al. 2021).

3.15 Chapter summary

The chapter provided an overview of the techniques employed in this study's data gathering as well as the steps used to achieve the findings. Additionally, it was made clear that both the qualitative and quantitative elements of the study involved one-on-one interviews and that the study will use a mixed method approach. The study was carried out at Lets'eng-la-Letsie and other communities outside the area but those are using the Lets'eng-la-Letsie Ramsar site for livestock purposes in the Quthing district.

CHAPTER FOUR: QUALITATIVE AND QUANTITAVE DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter provides analysis of information gathered through interviews with nine significant participants who were located in Lets'eng-la-Letsie and adjacent communities in the Quthing District. The socio- demographic details of the participants are shown in the first section. A framework that summarises the themes and categories that came out of the data analysis is presented thereafter. Each theme is presented, analysed, and interpreted in detail in the following sections utilising the categories and codes created during the study. Long and short quotes from many study participants are utilised to show how a wide range of individuals contributed to the categories and themes.

4.2 Qualitative data presentation and analysis

4.2.1 Participants

There were nine key participants for this study who held different positions and they were labelled P1, P2, P3, P4, P5, P6, P7, P8 and P9 for their confidentiality. They were deemed to have inside information concerning the nature of conflict at Lets'eng la Letsie and how it affects biodiversity conservation and local communities' livelihoods. Table 1.0 shows the demographic profile of the informants namely; the four chiefs, two community councillors, Ministry of tourism, environment and culture, Ministry of Range and police officers.

Table 1.0: A profile of key participants of the study

Participants	Position	Age	Sex	Marital status	Highest level of Education
P1	Chief 1	50-59	M	Married	Primary
P2	Chief 2	50-59	M	Married	Primary
P3	Chief 3	30-49	M	Married	C.OS.C
P4	Chief 4	30-49	M	Married	Primary
P5	Councillor 1	50-59	M	Married	C.O.S.C
P6	Councillor 2	30-49	M	Married	J.C
P7	Range officer	30-49	M	Divorced	First Degree
P8	Police	30-49	M	Married	C.O.S.C

	officer				
P9	Environment, Culture and Tourism officer	30-49	M	Married	First Degree

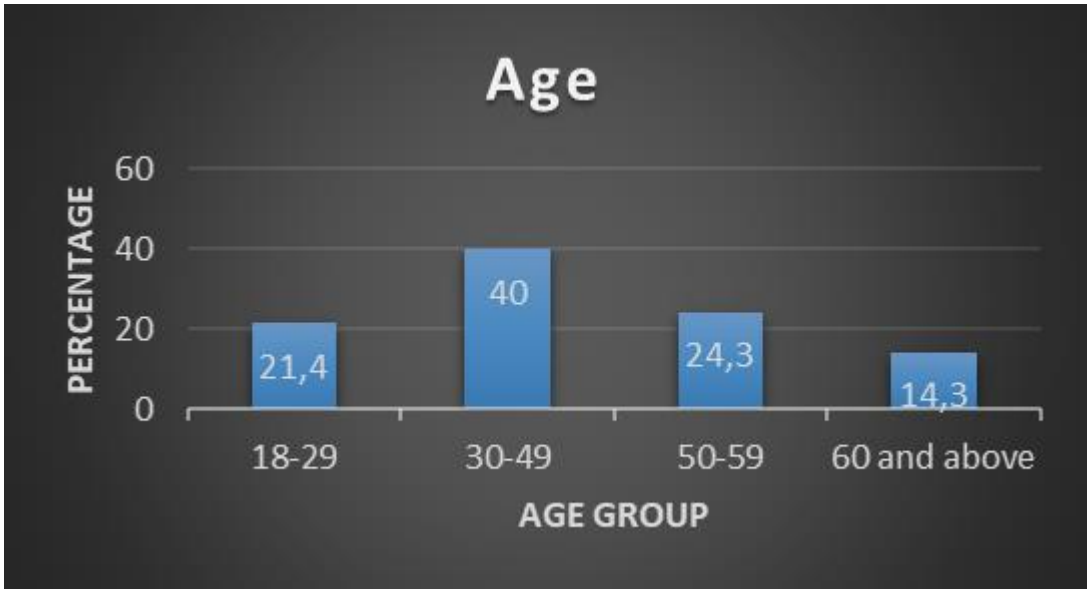
Source: Interview data 2023

In this study, men made up the whole participant population. Their ages ranged from 35 to 60, and they occupied a variety of responsibilities within the community, such as chiefs, community council members, district environmental and tourist officers, range officers, Chiefs, and Police officers. The participants' highest level of education was a first degree, while the majority only completed their primary schooling while earning their J.C. and C.O.S.C. A few of them are children, but the majority are adults.

4.3 Quantitative data presentation and analysis

Participants' age group

Table 4.1



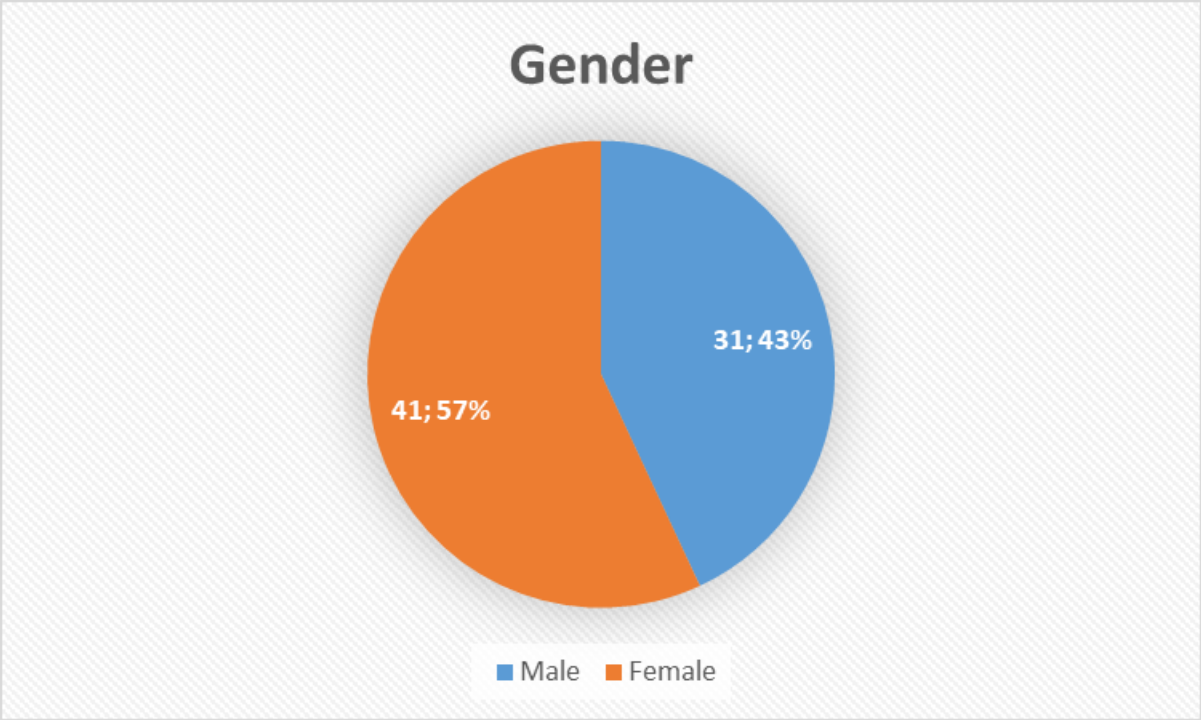
Source: May 2023 Field Data

Based on this analysis, the largest age group displayed in the bar chart above in the sample was individuals aged 30-49, representing 40% of the total. The 50-59 age group was the second largest, comprising 24.3% of the sample. The 18-29 age group was the third largest, accounting

for 21.4% of the sample. The smallest age group is individuals aged 60 and above, representing 14, 3% of the sample. These findings denote that the quantitative analysis supported or aligned with the qualitative analysis indicating a significant increase in age group between 30 and 49.

Figure 4.2

Participants' gender



Source: May 2023 Field Data

Based on the data provided, the total number of 72 participants were randomly selected for interviews from five different villages at Lets'eng-la-Letsie. The data showed that the gender distribution was not evenly split and from this data, out of the total population of 72 individuals, 56.9% were female, and 43.1% were male. There were more males than females among the responses found through the qualitative data analysis. However, among the surveyed population, there were more females than males. This indicated that the survey captured a higher number of female respondents.

Figure 4.3

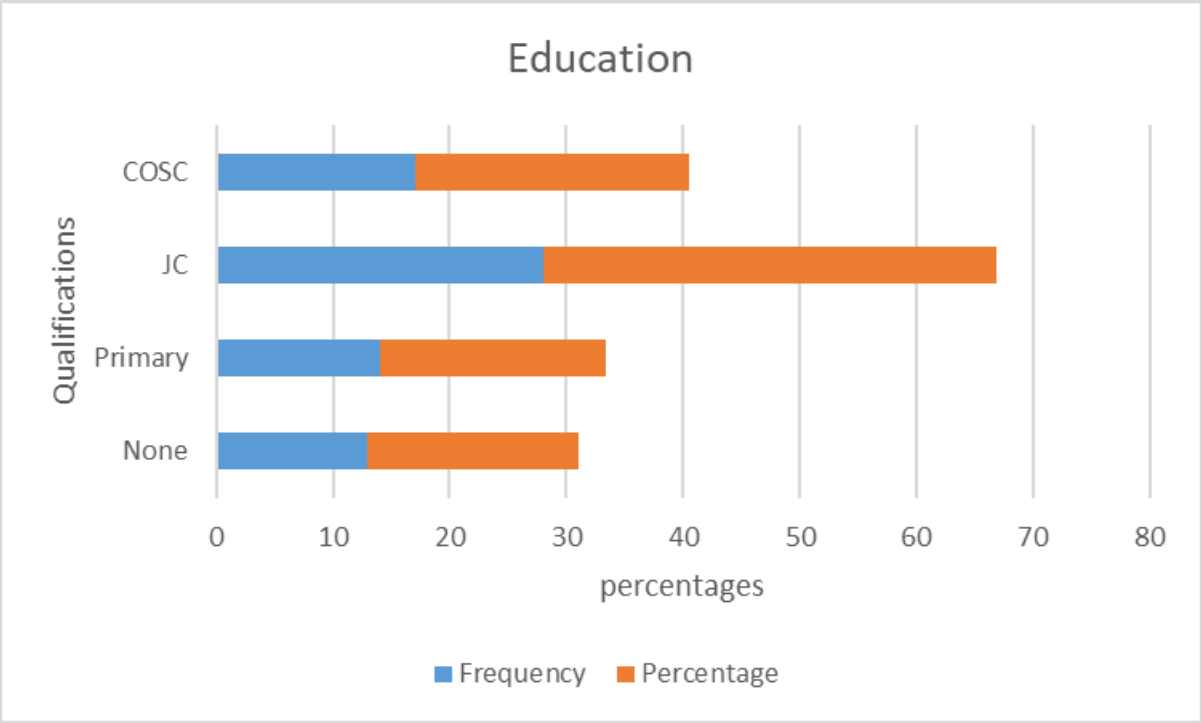
Marital status	**Frequency**	**Percentage**

Single	23	32
Married	42	58,3
Divorced	7	9,7
TOTAL	**72**	**100**

Source: May 2023 Field Data

From the above analysis, the majority of the individuals depicted in the table in the sample were married, with 58.3% falling into this category. Singles made up the second largest group at 32%, and the smallest group was the divorced individuals at 9.7%. Therefore, the number of married respondents was higher than the both single and divorced respondents combined, indicating a significant difference in marital status distribution. These findings align with the conclusions drawn from the qualitative data analysis, where it was discovered that the majority of the research participants were married.

Figure 4.4



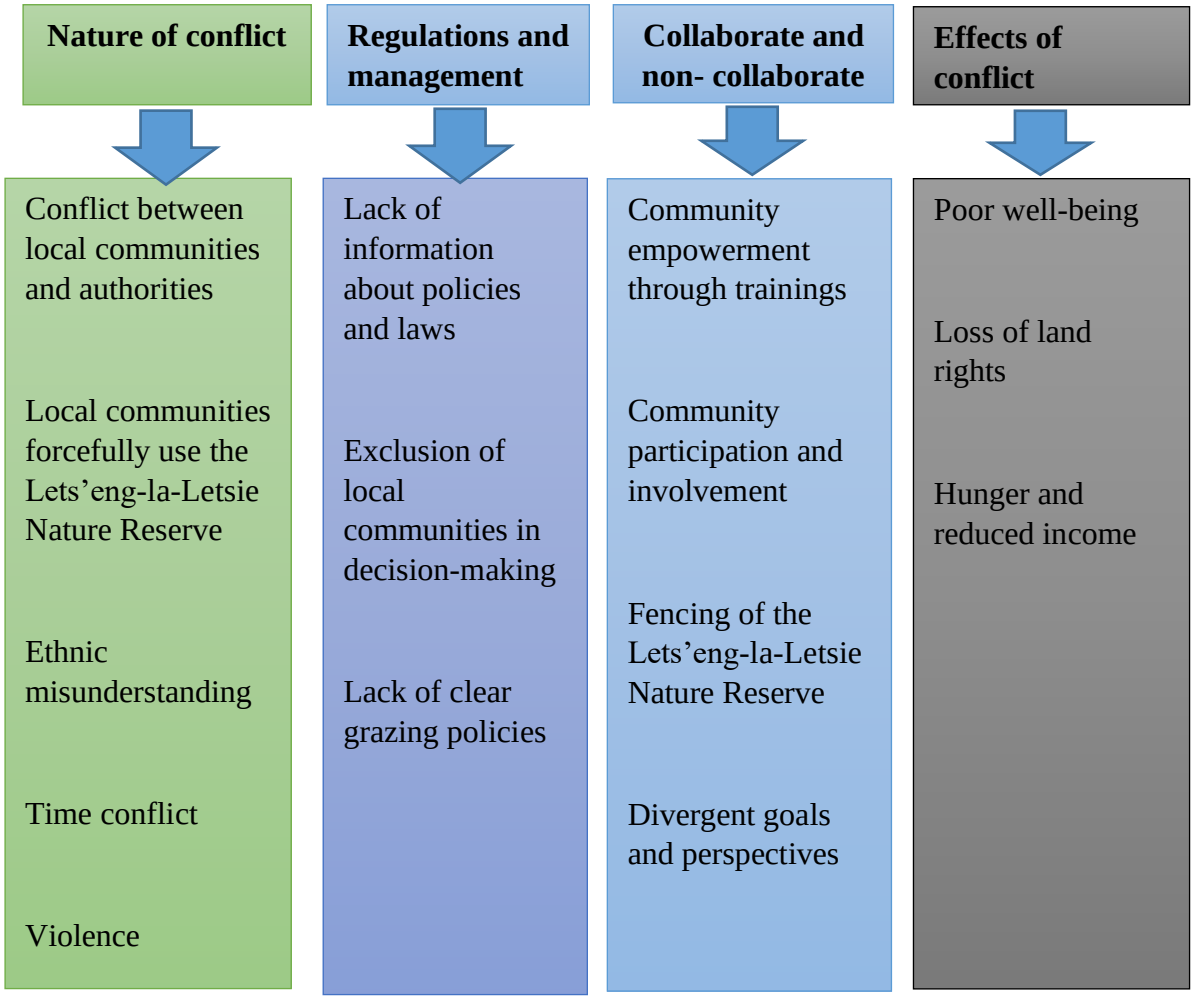
Source: May 2023 Field Data

The data depicted in the above bar chart showed four education levels: None, Primary, JC (Junior Certificate), and C.O.S.C (). The data indicated that the majority of the population falls into two categories: Junior Certificate and Cambridge Oversea Secondary Certificate, with 38.9% and 23.6% respectively. Unlike qualitative data, most participants fell under Primary level and COSC. On the other hand, none and Primary categories comprised 18.1% and 19.4% respectively.

4.4 Themes and categories

When the data were analysed, each theme was subsumed by a number of codes and categories. The themes and the categories they fall under are summarised in Figure 4.1, and each theme is then given a thorough examination and debate.

Table 1.2 Themes and categories



Source: Own construction 2023

4.5 Nature of conflict in biodiversity conservation

4.5.1 Conflict between communities and authorities

Scholars have shown that conflict can manifest itself in different ways, including violence, conflict between animals and communities, and conflict among people (Ayivor et al., 2020; Ghanaweb, 2006; Murrey, 2015; Mushonga, 2020; Peer et al., 2022). In the same manner, the data showed that the nature of the conflict at Lets'eng-la-Letsie manifested itself in different but related ways. Several respondents (P1, P5, and P7) indicated that there was conflict between the authorities and the local communities, confirming what the literature has shown: that in many nature reserves there is always conflict between authorities and local communities, in which communities suffer monetary losses imposed by the authorities. One of the respondents explained this situation in this way:

> Livestock owners suffered profound monetary losses from fines imposed by the site management once communities' herds grazed closer to the enclave area, and this made us have a lot of anger towards the authorities. (P5).

Most respondents further emphasised that conflict between authorities and local communities emanated from the fencing of the dam area, as the community argued that the government should fence only the area surrounding the water body of the dam, saying, *'The conflict that exists is between the people in charge and the local communities because the communities wanted only the water body to be fenced except for other parts of the dam because it takes part allocated for pastures'. (P1)*

Another participant sharing the same sentiments asserted that there was misunderstanding between authorities and local communities refusing to leave the Lake area, and they wanted to be in charge of making decisions for the area. Participant 9 indicated that the communities at Lets'eng desired to have decision-making authority over the region. They emphasised the importance of being included in all decision-making processes, particularly those related to projects aimed at preserving natural resources.

The respondents further mentioned that the contractors hired by the authorities refused to pay the local communities who were hired, and that left them with anger towards government conservationists, leading one participant to say:

> The contractor refused to pay the people who worked for him, and now the government wants to tell us how to use our own land—our own land, for that matter. **Uyazi abapolotiki bayadelela mntakwethu, futhi banendliziyo ezinde (You know politicians are disrespectful and they are greedy)'** (P5 P1).

4.5.2 Local communities forcefully use the Lets'eng-la-Letsie Nature Reserve

Conflict at Lets'eng-la-Letsie involved the use of force as communities resorted to it, refusing to move out of the reserved area. This was confirmed by P9, who stated that local communities are reluctant to relocate their livestock from the area due to their desire to exploit and derive benefits from the available resources within that particular area.

4.5.3 Ethnic misunderstanding

Besides authority-community conflict at Lets'eng la Letsie, it emerged from the data that conflict presented itself through ethnicity between the Xhosa and Sotho speaking groups, fuelled by several causes like hatred, competition over pastures, and exclusion in community decision-making. P2 identified hatred in his rural town, illustrating that over time, the conflict between the Xhosa and Sotho communities evolved since the time of their great-grandfathers, resulting in deep-seated animosity between them. Presently, Xhosa people predominantly reside in certain areas, while there is an absence of Sotho individuals in those areas.

The respondents further stated that Xhosas were accused of consuming a lot of grazing area, and the language used is Sesotho, leading to misunderstandings due to the exclusion of the Xhosa group. Thus, they both had their own grazing areas. However, the Sotho group complained that Xhosa groups are cruel and self-loathing and do not want to share their resources with the Sotho group.

4.5.4 Time conflict

The characteristic of conflict at Lets'eng is time-bound, as it reached a peak during the summer. The participants explained that during the summer, competition for the natural resources, especially grass, was high at this time, following the grazing system in Lesotho, in which

animals from faraway places move to the mountain areas in the summer to move to the foothills and lowlands in the winter.

4.5.5 Violence

As it happens in other countries like South Africa, Brazil, and Kenya (Jong & Butt, 2023; Rodrigues et al., 2022), some participants explained that conflict at Lets'eng manifested itself through violence. Participant 3 emphasised this observation, stating that when their livestock were found near the area or found grazing around the Lets'eng area, their livestock were taken by the police and soldiers, resulting in the beating of the herd boys and owners who may be found near the animals. This was confirmed by another participant (P1) sharing the same sentiments: *'If local communities, along with their livestock, were discovered near the Lake area, they were pursued and physically assaulted by the soldiers who were responsible for patrolling the region.'*

Further, some participants acknowledged that verbal abuse played a significant role in the nature of conflict, as insults were exchanged between shepherds and authorities during the impoundment of animals from the reserve area.

According to the literature (Matanzima & Marowa, 2022; Stoldt et al., 2020; Wit et al., 2020), conflict between animals and humans is commonly observed in various parts of the world. However, most participants in the study area of Lets'eng reported that such conflicts were non-existent. They explained that there are no big animals that could cause damage to community properties, with the exception of antelopes, which are rare. The only animals mentioned as being present in the area were vultures, ducks, and fish. (P8)

Further, the quantitative data revealed a clear consensus among the respondents on several key issues, as they were expressed in the qualitative data. Firstly, an overwhelming majority (82.9%) agreed that local communities forcefully used the Lets'eng-la-Letsie area; 38% recognised the existence of ethnic misunderstanding; 85% agreed that conflict at Lets'eng was time-bound because it was prevalent during the summer season; and the majority of the respondents (87%) agreed that conflict at Lets'eng manifested itself through violence.

Contrary to existing literature, the study findings suggest that conflicts between animals and humans, particularly in terms of property damage, were relatively non- existent in the Lets'eng area. The participants reported that the only animals of concern were antelopes, which were

rare, along with vultures, ducks, and fish. This contrasts with other regions, where conflicts between larger animals and humans are more prevalent. These findings imply that the nature of conflict in the Lets'eng area is not heavily influenced by animal-human interactions.

The study findings confirmed previous literature that highlights the presence of conflict between authorities and local communities in nature reserves (Ma et al., 2009; Ghanaweb, 2006; Ayivor et al., 2013). The conflict was often centred around monetary losses imposed by the authorities on communities. This could be seen in the case of fines imposed on livestock owners for grazing in prohibited areas. The respondents expressed anger and frustration towards the authorities due to these financial penalties. Furthermore, the fencing of the dam area became a source of contention, as communities argued that only the water body should be fenced while leaving other parts of the dam for pasture use.

The study findings indicated the presence of conflict between the Xhosa and Sotho-speaking ethnic groups in the Lets'eng area. This ethnic conflict had been fuelled by factors such as historical animosity, competition over pastures, and exclusion from decision-making processes. The participants mentioned that the Xhosa and Sotho communities resided in separate areas, leading to a lack of integration and social interaction. The Sotho group accused the Xhosa group of consuming a significant amount of grazing land and being unwilling to share resources. Language differences, with the Xhosa group predominantly using Sesotho, contributed to misunderstandings and tensions.

4.5 Conflict and natural resource management policy instruments and strategies

4.5.1 Lack of information about policies and laws

Scholars have shown that conflict in natural resource management emerges from a lack of proper communication, education, and collaboration between government officials and local communities, resulting in the failure of management policy instruments and strategies (Lai & Nepal, 2006; Mabibi, Dude, & Thwala, 2021; Long et al., 2020; Fang et al., 2021). The data for this study revealed almost the same thing in the case of Lets'eng-la-Letsie, and it was evident that there were several challenges related to the implementation of policies and regulations for the management and conservation of natural resources, as some respondents (P1, P2, and P3) stated that local communities, including chiefs and councillors, lacked knowledge about the policies and objectives governing the use and conservation of natural resources in the Lets'eng area. They mentioned that there was no written documentation, only

verbal communication, making it difficult for them to comprehend and follow the rules. Hence, for many respondents, this led to a communication breakdown, leading to perpetual conflicts related to natural resource management. *"The local communities are unaware of the policies and objectives regarding the dam. They have not been informed about the purpose of the dam or how it can benefit their livelihoods.' (P1)*

Another participant sharing the same sentiments added that *the purpose and benefits of the dam are unknown to the communities. There is a lack of information regarding policy implementation.' (P2)*

While some training had been provided to councillors and chiefs, it appeared that the information had not been effectively disseminated to the broader local community. Some respondents mentioned hearing about policies or plans being discussed in meetings, but there was a lack of clarity on whether these policies were already implemented or not. This uncertainty contributed to the challenges faced by local communities in complying with conservation efforts. This was confirmed by P6, who stated, *the details of the policy are not remembered clearly. The issue of policy implementation is still being discussed.'*

4.5.2 Exclusion of local communities in decision-making

As the literature reveals, excluding local communities from decision-making and resource management processes leads to conflict (Hayes, 2006). Similarly, the data revealed that local communities were excluded from decision-making processes related to the management of natural resources. They expressed frustration at not being included in discussions and decisions that affect their livelihoods and access to the Lets'eng area. Respondents argued that the exclusion led to communication breakdowns and disputes.

4.5.3 Lack of clear grazing policies

Some participants (P6) stated that the absence of written laws and clear policies made it difficult to take legal action against individuals or groups who were not following conservation guidelines. This led to conflicts between government officials, communities, and farmers, as there were no established rules to enforce the protection of natural resources. The findings resonate with what happens in some countries: Kenya, Brazil, the Democratic Republic of the Congo, and Indonesia (African Wildlife Foundation, 2017; Mongabay, 2019; The Guardian, 2017; The Guardian, 2020).

In addition to the qualitative insights, the quantitative data indicated that there was a general agreement among respondents regarding the limited information about policies and laws, with the majority of respondents (84.5%) agreeing or strongly agreeing with the limited information about policies and laws. A substantial majority of respondents (88.9%) highlighted the absence of a clear grazing policy, leading to conflicts between local communities. The weighted average of the survey results (83.1%) indicated an overall agreement with inadequate enforcement of natural resource management. The majority of respondents expressed concerns about the current state of affairs.

As the literature revealed, involving local communities in the decision-making process and finding solutions that incorporate their perspectives may be effective and sustainable. However, as P9 stated, local communities expressed their desire to be involved in decision-making processes and have a say in the management of the Lets'eng area. They felt that their input and involvement were crucial for successful conservation efforts.

4.6 Areas local communities and conservationists collaborate

4.6.1 Community empowerment through training programmes

The study showed that there were mixed feelings about collaboration and non-collaboration between the communities and conservationists on the government side in several aspects. Local communities collaborate through community empowerment through training programmes that aim to provide necessary skills for livelihoods, with participant 9 stating: *'Local communities and conservationists collaborate on Community Empowerment through training that will provide necessary skills needed for their livelihoods'*.

4.6.2 Community participation and involvement

Moreover, most respondents highlighted a significant level of collaboration between local communities and the government, with a strong emphasis on community participation. Notably, some participants, such as P5, revealed that the government did not restrict livestock from grazing in the dam area, which suggested a certain degree of accommodation for the local communities' needs. This accommodation, however, was complemented by the government's establishment of guidelines and expectations for the communities to adhere to, ensuring the protection of the dam area. Moreover, the government actively involved the communities in the management of the area, granting them a voice in decision-making and the implementation

of measures. This cooperative approach underscored a mutually beneficial partnership where both the government and the communities assumed crucial roles in safeguarding the dam and its surroundings.

4.6.3 Fencing of the area around Lets'eng-la-Letsie Nature Reserve

On the other hand, there were also some areas where some respondents held a different view, arguing that there was no collaboration, especially from the government side, which instilled a sense of exclusion and discontent among the communities. Conservationists believed that fencing off the area was essential to safeguarding nature. However, this decision faced strong opposition from the local communities, revealing conflicting interests and goals.

Moreover, some respondents stated that local communities did not collaborate through exclusion from decision-making. P1 confirmed that the responsible department lacked collaboration with the local communities. The community felt excluded from decision-making processes, indicating a lack of involvement and consultation in important matters that affected them. Correspondingly, P2 reinforced the lack of collaboration by mentioning the community's primary request for the government to only fence the area directly around the dam without encroaching on a larger area that would further limit their grazing space, acknowledging:

'*Farmers' disagreements with the department started with the department's fencing of the dam and other nearby locations, which consumed their grazing space.* However, as seen in Appendix C, this suggested that the government did not consider the community's input or concerns when making decisions about the fencing as this resulted in the fence being destroyed by local communities.

4.6.4 Divergent goals and perspectives

On another note, some respondents sharing the same sentiments highlighted that there was no collaboration or understanding between local communities and the government, particularly regarding the management and use of natural resources in the Lets'eng-la-Letsie area. The local communities desired immediate benefits from the conservation efforts, while the government focused on protecting the area and ensuring the sustainability of natural resources, stating:

> Local communities want to manage the natural resources at Lets'eng-la-Letsie in their own way and the government in their own way according to how it will suit their

> benefits... The community wants it to be clear how the territory will be used in a way that would benefit everyone; however, the government's problem is that they want to remove farmers at Lets'eng in the name of keeping the area safe (P4).

The quantitative results aligned with the qualitative findings, highlighting a lack of inclusiveness among local communities in decision-making for biodiversity conservation. About 90.2% of respondents expressed agreement with this issue, while a substantial majority (90.1%) perceived conflict in biodiversity conservation due to differing goals and perspectives. The data further revealed that a significant number of respondents (90.2%) believed such conflicts hindered effective conservation efforts.

The findings suggest that the framework of sustainable livelihoods rests on various assets, such as natural, physical, financial, human, and social capital (Li et al., 2020; Nasrnia, 2021; & Scoone, 2009). Collaboration or non-collaboration between local communities and government departments can significantly impact the sustainable livelihoods of the communities involved.

In this study, lack of collaboration between the local communities and the responsible government department has negative consequences for the sustainable livelihoods of the communities. As the literature shows, the exclusion of the community from decision-making processes and the inadequate government approach create a sense of discontent and exclusion (Li et al., 2020).

4.7 Effects of conflict on the livelihoods and biodiversity

4.7.1 Poor well-being

In this study, conflicts surrounding the Lets'eng-la-Letsie Nature Reserve have had a negative impact on both the community's livelihoods and biodiversity. During the dam's construction, local communities were hired, but some were not paid for their work, and others claimed they were never hired at all. Additionally, the fencing of the nature reserve has led to financial hardships for some individuals (P1, P5). These findings contradict the suggestion made by the SLA (Natarajan et al., 2022) that improved livelihoods and increased income would result from the project.

Apart from the unsatisfactory employment opportunities, the participants reported that the nature reserve was not fenced, allowing domestic livestock to illegally graze in the reserve,

with consequent heavy fines imposed on the farmers. As participant 1 stated, *"Our livestock is impounded once they are found in the reserve, causing significant monetary loss and loss of livestock."*

4.7.2 Loss of land rights

Furthermore, restricted access to resources in the reserve was a critical factor that negatively affected the livelihoods of the local communities. As the literature states, local communities are displaced by authorities to settle in new areas without secure land rights, and this loss of land rights affects local communities negatively, especially when communities were depending more on the land for livelihood purposes, making it more difficult to survive in new areas (Colchester & Lohmann, 2011; Neumann et al., 2016). In the same manner, most respondents explained that at Lets'eng-la-Letsie, the establishment of the nature reserve had limited access to resources for the local communities. Medicinal herbs and fishing grounds had become off-limits due to restrictions enforced by soldiers and police. This had disrupted traditional practises and affected livelihoods (P1). Further, some respondents (P3 and P5) stated that some communities migrated to the neighbouring villages for their livestock pastures and for safety because they were forced out of the area for tourists, and now they lost good pastures for their livestock.

Scholars revealed that in countries like Uganda, Kenya, India, and Thailand, local communities were forced to leave their ancestral lands (Brockington & Igoe, 2006; The Guardian, 2018; Survival International, 2019; and Human Rights Watch, 2020). This eviction resulted in a significant loss of traditional knowledge about the environment and the natural resources that these communities relied on for their livelihoods. Similarly, at Lets'eng-la-Letsie Nature Reserve, participants, including P4, mentioned that traditional activities such as grazing, hunting, and collecting medicinal herbs had been severely affected. As a result, the community suffered negative impacts on their cultural practises and overall well-being. The loss of access to these vital resources had been particularly challenging for them.

4.7.3 Hunger and reduced income

Besides environmental damage, some participants reported that there was hunger and reduced income, which resulted in the loss of grazing areas and insufficient food for livestock in the local communities. Livestock, such as sheep and goats, were unable to provide wool and mohair, leading to financial struggles for the community. This was confirmed by P1

highlighting, *We lost the good pastures for our livestock, and that made livestock go hungry, and so when livestock do not eat well, there will be no wool and mohair, and money is reduced, and we all suffer from hunger.'*

The qualitative data indicated that biodiversity conservation did not generate income for local communities. However, the quantitative data revealed a prevailing scepticism (90%) about the economic benefits of conservation efforts while showing positive support (85.5%) for responsible resource utilisation. Participants did not believe that conservation contributed to increased food production (94.3%) or overall well-being (85.2%). These attitudes were influenced by concerns about environmental sustainability and other factors shaping their viewpoints.

As the literature states, local communities are displaced by authorities to settle in new areas without secure land rights, and this loss of land rights affects local communities negatively, especially when communities were depending more on the land for livelihood purposes, making it more difficult to survive in new areas. Colchester & Lohmann, 2011; Neumann et al., 2016). In the same manner, most respondents explained that at Lets'eng-la-Letsie, the establishment of the nature reserve had limited access to resources for the local communities. Medicinal herbs and fishing grounds had become off-limits due to restrictions enforced by soldiers and police. This had disrupted traditional practises and affected communities' livelihoods, especially those that were depending on those resources (P1). Further, some respondents (P3 and P5) stated that some people migrated to the neighbouring villages for their livestock pastures and for safety because they were forced out of the area for tourists, and now they lost good pastures for their livestock.

Scholars have shown that during the construction of the dam for the protection of natural resources, there was a decline in fish populations, which negatively impacted the livelihoods of local communities that rely on fishing as a source of income and food security (Njoroge et al., 2018; Vincent, 2010; Knuth, 2012). Similarly, at Lets'eng-la-Letsie, the dam had been filled with mud due to the destruction caused by the herdsmen grazing near the dam area, leading to the death of fish and damage to the ecosystem. The destruction caused by animals had further impacted the area's natural state (P3, P4).

Further, countries like Uganda, Kenya, India, and Thailand were evicted from their ancestral lands, and this led to the loss of traditional knowledge about the environment and the natural

resources that sustain their livelihoods (Brockington & Igoe, 2006; The Guardian, 2018; Survival International, 2019; Human Rights Watch, 2020). In the same manner, some participants, such as P4, acknowledged that traditional activities such as grazing, hunting, and medicinal herbs had been severely affected at Lets'eng-la-Letsie Nature Reserve, and the loss of access to these resources negatively impacted the community's cultural practises and well-being.

Besides disruption of traditional practises and displacement, some participants reported that there was hunger and reduced income, which resulted in the loss of grazing areas and insufficient food for livestock for the local communities. Livestock, such as sheep and goats, were unable to provide wool and mohair, leading to financial struggles for the community.

4.8 Chapter summary

This chapter covers both qualitative and quantitative data analysis that was gathered at Lets'eng-la-Letsie Nature Reserve as well as those communities that are far away but use the area for various purposes. Four themes that surfaced during the qualitative analysis have helped provide answers to the study's research questions. The results demonstrated how communities' livelihoods and biodiversity are severely impacted by biodiversity protection. The respondents' demographic information has been provided. The results of the quantitative analysis and the qualitative analysis have also been compared in this chapter. There is a relationship between the variables (type of conflict and biodiversity protection), according to the results obtained from the Cronbach's Alpha test.

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the major findings, recommendations based on the findings of the study, which were described in chapter one and included the following objectives:

- Assess the nature of conflict at Lets'eng-la-Letsie Nature Reserve.
- assess the effect of natural resource management policy instruments and strategies
- Identify areas of collaboration and not-collaboration between local communities and government conservationists.
- Assess the effect of conflict on community livelihoods and biodiversity

5.2 Summary of key findings

Findings from this study conducted in the Lets'eng area demonstrate that conflicts between animals and humans resulting in property damage were relatively rare compared to conflicts between local communities and authorities. The latter revolved around monetary losses due to fines imposed on communities for grazing in prohibited areas. Moreover, the research unveiled the presence of ethnic conflict between the Xhosa and Sotho-speaking ethnic groups, fuelled by historical animosity, competition over pastures, and exclusion from decision-making processes. These conflicts often manifested through violence and were found to be seasonal in nature. The study emphasised the need for involving local communities in decision-making processes to achieve sustainable solutions and effective conservation outcomes. Additionally, it revealed that current biodiversity conservation efforts in the Lets'eng area had not generated income for local communities nor contributed to increased food production. Local communities were adversely affected by displacement, leading to loss of secure land rights, disruptions to traditional practices, and limited access to vital resources such as medicinal herbs and fishing grounds. Some individuals were forced to migrate to neighbouring villages for livestock pastures and safety due to tourist-related restrictions, highlighting the importance of addressing the negative impacts of conservation on local communities' well-being and resource access. Overall, integrating local perspectives and active involvement in management decisions is crucial for successful conservation efforts in the Lets'eng area.

5.3 Conclusion

In conclusion, the research conducted in the Lets'eng area sheds light on important problems relating to conflict, resource management, and conservation initiatives. The frequent disputes between local communities and authorities, which typically fuel financial losses and racial tensions, draw attention. In order to promote sustainable solutions and successful conservation outcomes, decision-making processes must be improved through collaboration and inclusivity. The study also showed that existing efforts to conserve biodiversity in the Lets'eng region have not had a positive effect on local residents' means of subsistence or food production. Displacement and limited access to resources negatively impacted the well-being of the communities, requiring a more thorough strategy that takes their needs into account and provides support.

Several suggestions have been provided for pertinent parties in order to address these issues and promote effective conservation. The government and conservationists are asked to interact with local communities in an open and accountable manner, involving them in decision-making procedures and taking into account their demands for a living. Clear policy guidelines should govern the management of natural resources to ensure their sustainability over time.

Additionally, it is crucial for local communities to work together on conservation initiatives, avoiding ownership disputes, and working with authorities to protect the area's priceless natural resources. The study emphasises how crucial it is for the Lets'eng-la-Letsie Nature Reserve to be managed in a way that is both efficient and sustainable for local communities, the government, and conservationists. All stakeholders' interests and viewpoints should be taken into consideration as they strive towards a future where biodiversity and community livelihoods coexist.

5.4 Recommendations

Recommendations for this study are categorised in accordance with relevant stakeholders in Lets'eng-la-Letsie Nature Reserve and community livelihoods and biodiversity. Recommendations for the government, NGOs in Lesotho and local communities are presented below:

- The Lake area should be fenced to ensure that local communities do not interfere with the natural resources and wildlife found around the area.

- The management in charge of the Lake area should corporate with the local communities by including local communities in the decision-making
- Government conservationists should be honest and faithful to their agreement between them and local communities.
- Government conservationists should also take into consideration local communities' livelihoods so that they can benefit from the dam area.
- The government should implement clear policy documents for the management of the Lake area to avoid natural resources being destroyed and sustain for a longer period of time.
- Local communities should comply with the government to conserve natural resources found in Lets'eng and avoid owning the area as theirs.

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Appendices

Appendix A: Atlas.ti Report

Report created by Nombeko Lone on 17-June-23

Code Report

All (7) codes

○ **Nature of conflict**

12 Quotations:

1:2 ¶ 2 in Chief (Ha Peete)

The contractors refused to pay the people who worked for him. And now the government wants to tell us how to use our own land, I mean our own land for that matter. ‘Oa tseba bapolotiki ba tella khaitseli ebile ba pelo li telele. Therefore, that influences us to forcefully use that area. We are losing some of our valuable grazing areas because of the so-called conservation of natural resources.

Again, during the summer, when livestock returns to "metebong," there is a conflict between farmers due to competition over natural resources such as good pastures.

6:1 ¶ 2 in Councillor (Ha Peete)

There is a lot of misunderstanding between other local communities and people speaking the language of Xhosa and those speaking Sotho mainly in the matter concerning the pastures. They claim that we as Xhosa speaking are strangers and therefore we do not have the right to use the Lake area for grazing purposes because we consume more than others. Also, many meetings are held in Sotho and we do not understand the language clearly on what is being said and so we are lagging behind. Even though village committees are appointed for pastures and natural resources, we as Xhosa speakers are not included. We last participated when the village councillor was a Xhosa ethnic misunderstandings - Xhosa accused of consuming more, language used is Sesotho leading to misunderstandings, exclusion of Xhosa speaking group.

6:3 ¶ 3 in Councillor (Ha Peete)

During the construction phase of the dam, local communities were hired, however, they have not been paid for their work and that left them with anger towards government conservationists and they have been demanding their money. Therefore they have known no benefits such as employment benefits. They suffered profound monetary loss from fines imposed by the site management once the community’s herds graze closer to the enclaved area

7:1 ¶ 2 in Ministry of Environment and Tourism

Yes there seems to be a lot of misunderstanding especially between communities and the management of the Lake though I do not have the exact details of why they are fighting because I have just worked here not too long

7:4 ¶ 3 in Ministry of Environment and Tourism

You know my mother, I wouldn't say it's necessarily a misunderstanding. But anyway Xhosa and Sotho have come a long way since our great grandfathers, there has been hatred among them. For example, in this village there are Xhosa people living here.

7:10 ¶ 12 in Ministry of Environment and Tourism

The conflict is between authorities and the communities. The communities want to be in charge of making decisions for the place of Lets'eng. They want them to be included in every decision taken, especially when there are some projects to be carried out that could help in preservation of natural resources found at Lets'eng

7:14 ¶ 17 in Ministry of Environment and Tourism

The conflict that exists is between the people in charge and the local communities because the communities wanted only the dam to be fenced and not in other parts because that would take away their part of the pasture.

8:2 ¶ 2 in Chief (Khalo la Likhang)

. As herd boys, they were lured for high fines if their animals were found near the dam and sometimes they took their animals and were beaten by the police and soldiers

Chief (Ha Tsepane)

There is a lot of misunderstanding here between livestock owners and the management of the dam and also between communities itself. This conflict is mostly happening a lot during summer times because that is where livestock migrate to 'metebong'.

Therefore local communities in this area fight those that come far away and claim that this area belongs to them.

Chief (Makhalong)

Yes, but among local communities and the department in charge. Mostly during the summer that is where there is more conflict.

Apart from that, there is fight over pastures and animal theft and these are the main sources of conflict, while verbal fighting between shepherds is brought on when local authorities remove their livestock and bring them to the chief. Except for the recent

past, there are fewer severe conflicts today except those that involve animal thefts and conflict among conservationists and local communities.

Councillor (Makhalong)

Yes, but the conflict is between farmers and the management of the Lets'eng area

Ministry of Range

At Lets'eng-la-Letsie, there are no big animals that might harm the properties of nearby communities. Although they are currently available, the only animals discovered at this location are vultures, antelopes, ducks, and fish. So the only conflict that is there mostly is the conflict among local communities and conflict between the management and the communities

Appendix B: Questionnaire

Likert scale question for nature of conflict at Lets'eng-la-Letsie

1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

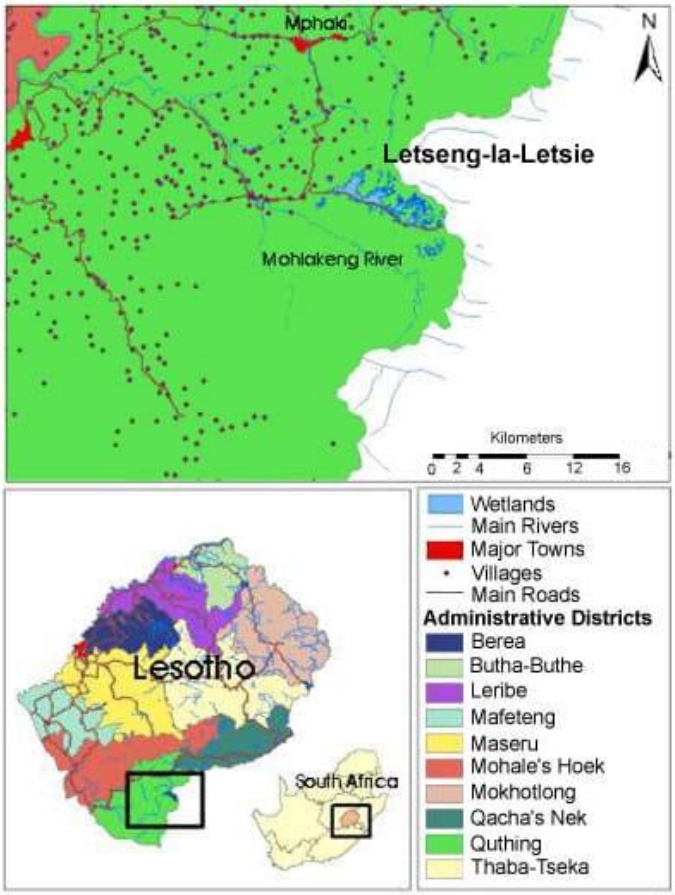
Age: Sex: Marital status: Educational qualification:

Statement	1	2	3	4	5
1. Nature of conflict					
Community forcefully use of Lets'eng area lead to conflict					
Ethnic misunderstanding is the source of conflict					
Fragmented power leads to conflict.					
Summer season is the time of most conflict					
Physical violence is high					
Conflict between authorities and communities					
2. Management policy and strategies					
There is limited information about policies and laws					
Insufficient community engagement in decision-making					
A clear grazing policy for optimal timing of grazing activities.					
Inadequate natural resource management enforcement					
Empowering sustainable resource use for local communities.					

3. Collaboration and non-collaboration:					
Inclusive decision-making in biodiversity conservation					
Conflict arises from divergent goals and perspectives					
Natural resource conflicts hinder effective conservation efforts.					
4. Conflict and livelihoods					
Lets'eng nature reserve has helped communities to: generate income					
Generate income					
Use resources wisely					
Produce more food					
Contributes positively to overall well-being.					

Appendix C: Fence destroyed by local communities

Appendix D: Side map of Lets'eng-la-Letsie Nature Reserve



Appendix E: Lets'eng as used for grazing purposes