



THE CONTRIBUTION OF CLIMATE FINANCE ON LIVELIHOODS OF AGRO-
PASTORALISTS IN THE SEBAPALA SUB-CATCHMENT.

BY

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Certification

This is to certify that this dissertation has been read and approved as having met the requirements of the Department Development Studies, Faculty of Humanities, National University of Lesotho for the award of Master of Arts in Development Studies.

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Dedication

I dedicate this dissertation to my parents, Ntate Malefetsane (my late father) and 'M'e Lieketseng who generously sponsored my studies despite their lack of familiarity with academia. They have been inspirational in my life and gave me the courage and determination to come this far.

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List of Abbreviations and Acronyms

AF	Adaptation Fund
CBDR	Common but Differentiated Responsibility
CIF	Climate Investment Fund
CPI	Climate Policy Initiative
GCF	Green Climate Fund
GOL	Government of Lesotho
IACOV	Improving Adaptive Capacity of the Vulnerable in Lesotho
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IWM	Integrated Watershed Management
LMS	Lesotho Meteorological Services
NAPA	National Adaptation Programme of Action
NDC	Nationally Determined Contributions
NSDP	National Strategic Development Plan
OECD	Organisation of Economic Cooperation and Development
PAR	Disaster Pressure and Release model
PSR	Pressure State Release framework
RSA	Republic of South Africa
SDG	Sustainable Development Goals
SSA	Sub-Saharan Africa
SPSS	Statistical Package for the Social Sciences
UN	United Nations

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organisation

Abstract

Climatic change and variability is a developmental issue facing the world, particularly the developing countries that sustain livelihoods through the environment. Climate change is an issue in Africa, with many agro-pastoralists dealing with its different facets from desertification, drought, land degradation and extreme weather events such as unpredictable rainfall and unforeseen temperatures. Many developing countries have benefited from climate finance initiatives to enhance development and livelihoods. Lesotho, like other developing countries, receives climate finance to enforce the development of livelihoods. However, no study has been conducted to determine the impact of climate finance on the livelihoods of the agro-pastoralists in the Seapala sub-catchment, in Tsatsane villages, within the Tosing Community Council.

The main objective of this study was to determine the impact of climate finance on the livelihoods of the agro-pastoralists in the Seapala sub-catchment within the Tosing Community Council, Tsatsane. It has identified the kind of livelihoods that existed in the council before the inception of the project. The study further determines the impact of climate finance on agro-pastoral livelihoods and assesses the participation of agro-pastoral farmers in projects. The researcher used a mixed method case study research design to address the problem: whether the impact of climate finance on agro-pastoral livelihoods has led to a partial contribution to the socio-economic development of the community. The study reveals that agro-pastoral livelihoods, including those in Lesotho, have been dominant production systems. For instance, in sub-Saharan Africa, agro-pastoralist farmers engage in crop and livestock farming as well as non-farm activities to sustain their livelihoods. There are some challenges which the study also unpacks. These include land degradation, drought and encroachment of rangelands. They may lead to the demise of the agro-pastoral production systems.

The study is intended to contribute to policy development. That is, it may inform processes of policy formulation and enactment of laws on issues of disaster management and livelihoods. Notably, the study is intended to contribute to the Seapala Integrated Watershed Management (IWM) project considering that no evaluation has been conducted since project implementation.

Chapter One: Introduction and Background to the Study

1.1. Introduction

Climate change poses significant challenges to people's livelihoods worldwide. In particular, it affects communities that rely on the environment to earn a living. The consequences of climate change include land degradation, drought, desertification and extreme weather events such as floods, too-high or too-low temperatures and heavy or low rainfall periods. Despite contributing less to global warming, developing countries encounter the brunt of its impact. In order to address these climate change events that pose vulnerability, the United Nations Framework Convention on Climate Change (UNFCCC) has established the climate finance mechanism. Through this mechanism, the Global North funds initiatives and policies that assist developing nations mitigate and adapting to climate change. Lesotho, like many other developing countries, benefits from climate financing interventions for development. The study assesses the effectiveness of this intervention in improving the livelihoods of agro-pastoralists in the Seapala sub-catchment within the Tosing community council, Tsatsane. Agro-pastoralists are individuals who engage in both crop cultivation and livestock rearing, producing a variety of agricultural and livestock products to sustain their livelihoods.

1.2. Background to the Study

Climate change is a global development issue that threatens the lives and livelihoods of the majority of already vulnerable groups (IMF, 2023). A study by Steinbach et al. (2022) asserts that marginalized communities, whose livelihoods depend on agriculture and natural resources, are vulnerable to the adverse impacts of climate change. These impacts include rising temperatures, unpredictable rainfall patterns and extreme weather events such as floods, droughts and increased heat waves (Bosch et al., 2021).

Drought caused by climate change primarily promotes desertification and reduces crop and livestock productivity for farmers and herders (IPCC, 2019). Despite these effects, a large portion of the world's vulnerable population rely on agro-pastoralism as the means to sustain livelihoods in rangelands and drylands. Though agro-pastoralism provides a foundation for livelihoods, it is a risky agricultural technique for minority populations due to issues of gender and indigenusness. This is probably due to climatic change, the marginalization of agro-pastoralism in development

endeavours and socio-economic contribution. Despite these flaws, agro-pastoralists, while unsustainable, have the means to adapt to climate change and mitigate its consequences on livelihoods (Jenet et al., 2017).

In the context of climate change, agro-pastoralists implement both adaptation and mitigation measures. However, a broader commitment is needed from developed countries to tackle climate change financially. Climate finance, as highlighted by Lombo et al. (2016), is a mechanism through which domestic and international, private and public, bilateral and multilateral entities provide support for climate change projects in economically disadvantaged nations. Nonetheless, climate finance remains a dynamic and ambiguous concept. Since the 1992 Rio Conference on Environment and Development, climate finance has been part of the UNFCCC climate discussions. However, it is often mistaken for official development assistance (ODA). The International Monetary Fund (IMF, 2023) emphasizes that climate finance may risk declines in ODA. Skovgaard (2021) highlights that climate finance consists of financial flows from developed and developing countries intended to reduce greenhouse gas emissions and initiate climate resilience.

Climate finance is important for the development of poor nations which contribute less to climate change but endure most of its consequences (IMF, 2023). This climate finance programme is designed to increase the climate resilience of the beneficiary countries. However, most developing countries are not climate finance ready. Lombo et al. (2016) assumed the slow rise in climate change programmes is a result of the inability of the beneficiary countries to employ climate finance to adapt their livelihoods to climate change disasters. Furthermore, Caetano & Kerim-Dikeni (2019) confirm that relying on donors for climate finance is ultimately unsustainable. That is, even when funds are available, most beneficiary governments lack the capacity to facilitate feasible projects.

Despite the existence of climate change policies, both Ethiopia and Kenya fail to enhance agro-pastoralist livelihoods through climate finance initiatives (Jenet et al., 2017). In contrast, South Africa and Zimbabwe have climate change policies that include agro-pastoralist livelihoods in development activities. However, adequate deployment of climate funding is a development challenge (Jenet et al., 2017; Boffa et al., 2019). This is probably due to the misuse of climate funds by the governments, lack of monitoring and sponsoring unsustainable or non-existent

climate change projects (Lombo et al., 2016; Adelabu et al., 2020). Furthermore, Malephane, (2022) reiterates that most Sub-Saharan African (SSA) countries find it costly to integrate climate change into their livelihoods. This is largely because only a few SSA nations have the fiscal capacity to mitigate and adapt to the effects of climate change without international aid (IMF, 2023).

The countries that are vulnerable to climate change normally lack public finance to adapt to climate change on their own. They among others include Somaliland and Zambia which, due to prolonged drought, require climate finance to cope with climate change (Villa, 2021). Furthermore, Linege & Struder (2019) highlight the impact of climate change on livelihoods in Sub-Saharan Africa. Land degradation and desertification pose damage in countries such as Senegal, South Sudan and Botswana. Despite neglect of agro-pastoralism, Sub-Saharan Africa feeds 55 percent of Africa's cattle and provides income to 268 million agro-pastoralists (Linege & Struder, 2019). However, climate change disrupts the livelihoods of agro-pastoralists; it impedes the food supply chains. The discourse is perpetuated by falling crop and animal productivity (IPCC, 2019). In South Africa, where the poor have limited resources to cope with, climate change disrupts livelihood patterns. The disaster events such as drought, floods and fires lead to the vulnerable fleeing their homes and becoming climate refugees (Oxfam, 2009). To reiterate, Uganda encounters livestock losses due droughts, while locust invasions in South Sudan, and bad rainfall in Niger lead to productivity declines (UNDP, 2020).

Lesotho grapples with the impact of climate change. In order to address this challenge, the government and donors channel their funds to assist communities in adapting their livelihoods to climate change vulnerabilities (Adelabu et al., 2020). However, climate change exacerbates unemployment and poverty, impeding the country's ability to carry out other social protection efforts. The National Strategic Development Plan (NSDP) 2021-2022 and the National Adaptation Programme of Action (NAPA) 2007 are two initiatives put in place to support the vulnerable in Lesotho. The strategies aim to halt land degradation and improve long-term crop and livestock livelihoods (LMS, 2017). Despite these initiatives, approximately two-thirds of Basotho are unaware of climate change. Those who are knowledgeable expect government action to mitigate its effects (Malephane, 2022). The southern part of Lesotho has been facing environmental

degradation, leaving agro-pastoralists with limited livestock holdings and on the verge of destitution (Bosch et al., 2021).

Previous generations developed coping techniques to address climate change and established programmes to combat desertification. Since its independence in 1966, Lesotho has engaged in soil conservation and management efforts. Notably, the Tebetebeng pilot project (1953-60) whose aim was to manage erosion of dongas through terracing faced challenges due to inadequate management amongst the chiefs (Darkoh, 1984). Similarly, the Thaba Phatšoa project in Leribe (1963-77) sought to improve soil conservation but there were different interests between the Ministry of Agriculture and the local community regarding the grazing practices. These interests hindered its success (Darkoh, 1984). The Liphiring project in Mohales Hoek (1971-77) which aimed to enhance farming practices and soil-water conservation, encountered poor wheat yields and alienated local participation (Darkoh, 1984).

Despite the grassroots climate adaptation initiatives, Lesotho's local communities remain vulnerable due to poverty and the challenges posed by the scattered rural areas, thus limiting access to social protection during disaster events (Bosch et al., 2021). Dove (2021) emphasizes that climate vulnerability and coping strategies rely on socioeconomic status, cultural norms, resource access and poverty. In the semi-arid areas of Lesotho, climatic and socio-economic conditions challenge food security, livelihood sustainability and agro-ecological stability, leading to crop failures and unproductive rangelands (Dove, 2021).

Limited research has been conducted to determine the effects of climate finance on agro-pastoral livelihoods in Lesotho. The only data come from donor groups and the media and may be biased. The study aims to assess the impact of climate finance on agro-pastoral livelihoods as well as to document the context of livelihoods of the agro-pastoralists.

1.3. Statement of the Problem

The agro-pastoralism livelihood system confronts widespread discredit because of climate change as well as neglect due to gender and climate financing readiness. Because of climate change, male farmers and herders in Quthing migrate to the Republic of South Africa (RSA) in search of better-paying jobs or join illegal mining activities. This gives women and youth authority over agriculture and livestock production. However, due to Lesotho's patriarchy, women are given limited credit

for sustaining livelihoods through agro-pastoralism. Within the climate change initiatives, the introduction of climate finance to fund projects that rehabilitate rangelands and pastures is expected to help the socio-economic growth of agro-pastoralists. The literature is silent on climate financing contributions to agro-pastoral livelihoods in the Seapala sub-catchment, Lesotho.

Furthermore, most information about climate finance is available on social media, newspapers, and funding agency websites. However, climate finance information is contradictory as there is no clear definition of what comprises climate finance programmes. Most people are familiar with climate finance through the recent green climate fund (GCF) which focuses on clean energy. With little research on the phenomena of climate finance on the focal area of land degradation and agro-pastoral livelihoods, academic studies are necessary to shed light on how local stakeholders' engagement in climate finance initiatives opens out, particularly by engaging the most vulnerable members of the community such as women and youth.

The Global Environmental Facility (GEF) is an international organisation that offers climate financing to developing countries for the implementation of climate change mitigation, adaptation policies and initiatives. In this regard, no studies have been found that relate GEF climate fund projects to agro-pastoral livelihoods in Lesotho. Hence the need for this study on the climate-financing project in the Seapala sub-catchment, within the Tosing community council, Tsatsane.

1.4. Purpose of the Study

The study aims to determine how climate finance has impacted livelihoods of the agro-pastoralists in the Seapala sub-catchment within the Tosing community council, Tsatsane.

1.5. Objectives of the Study

- ❖ To assess whether reasons for implementing the Seapala IWM are related to improving agro-pastoralist livelihoods as mentioned in the literature.
- ❖ To identify the types of livelihoods that existed in the Tosing community before the climate finance introduction.
- ❖ To determine the extent to which climate finance has impacted agro-pastoral livelihoods in the Seapala sub-catchment, Tosing community.
- ❖ To assess the participation of agro-pastoral farmers in climate finance projects in the council.

1.6. Research Questions

- ❖ How are reasons for implementing the Sebapala IWM project related to improving agro-pastoralist livelihoods?
- ❖ What type of livelihoods existed in the Tosing community before the introduction of climate finance?
- ❖ What is the extent to which climate finance has impacted agro-pastoral livelihoods in the Sebapala sub-catchment, Tosing community?
- ❖ How is participation of agro-pastoral farmers in the climate finance projects within the council?

1.7. Significance of the Study

The study may be significant in expanding the body of knowledge on the topic because not much is known or published about climate finance in Lesotho. The motivations underlying the development of climate financing initiatives in Lesotho are not well understood, despite the existence of organisations that have been active in the subject for a long time. The findings may contribute to a better understanding among academics as well as policy makers of the rationale for the allocation of climate funding to agro-pastoralists in particular. The research study may clarify the reasoning for the adoption of climate finance programmes. It may also demonstrate the need to examine ingrained practices that, due to patriarchy, disregard the contribution that women make to socio-economic advancement.

The research study may assist organisations to understand the criterion of stakeholders' participation in climate finance projects. Furthermore, it may shed light on the ways in which local climate finance institutions, host communities and stakeholders benefit from climate finance. This situation may demonstrate how climate finance helps to improve both the national and the agro-pastoralists' standard of living.

The study may enhance the efforts to adopt climate policy and its consequences. It may primarily assist the organisations in charge of climate finance in assessing the readiness of the nation for climate change. It may be useful in proving how well the current climate finance initiatives develop the livelihoods of agro-pastoralists. Its uniqueness lies in its emphasis on the contradiction between

tackling environmental problems related to climate change and using climate financing as an economic matter.

1.8. Study Organisation

The study comprises the following six chapters:

Chapter 1: Introduction

This chapter introduces the study and outlines the background and statement of the problem, both of which inform the aim of the study. The chapter further outlines the objectives and significance of this research study. The chapter presents the scope of the study and explains the organisation of the dissertation.

Chapter 2: Literature Review

This chapter first discusses the purpose of literature and outlines the definition of the key terms and concepts that underpin this research study. It further outlines the theoretical framework adopted to guide the research study.

Chapter 3: Research Methodology

The chapter covers the design of the study, the population, the sampling techniques, the sample size, the data collection methods and data analysis techniques. It further presents the ethical considerations, which guide the research study as well as the study limitations.

Chapter 4: Background of Agro-pastoral Livelihoods in Lesotho Prior to Climate Finance

This chapter gives a background to the livelihoods in Lesotho. The focus is specifically on the agro-pastoralist community. The chapter sheds light on the context of livelihoods of the agro-pastoralists before the introduction of the climate finance project in the Sebapala sub-catchment.

Chapter 5: Data Presentation, Analysis and Discussions of the Findings

This chapter presents the data collected from the field. It also discusses the findings in relation to the objectives of the study, the literature and theory. It makes an analysis with regards to the aim of the study.

Chapter 6: Conclusions and Recommendations

This chapter presents the conclusions drawn from the findings and makes some recommendations.

Chapter Two: Literature Review

2.1. Introduction

This chapter presents and discusses the literature on climate finance and agro-pastoral livelihoods. It is divided into two sections, conceptual and theoretical frameworks as well as the literature review. The first section outlines the operational meaning of terms as used in the study. The second section provides an overview of the relevant theories of climate finance and agro-pastoral livelihoods. The last section discusses the livelihoods of agro-pastoralists prior to climate finance. It further discusses the impact of climate finance on agro-pastoral livelihoods, as well as participation of agro-pastoral farmers in climate finance projects.

2.2. Conceptual Framework

2.2.1. Livelihoods

The concept “livelihoods” refers to the ways of making life possible. Livelihoods are a set of activities, assets and capabilities required to obtain the means of living (Chambers & Conway, 1992; Ellis & Mdoe, 2003). According to Scoones (2009), livelihoods are a combination of resources and a diversity of ways in which people sustain themselves. In rural communities, individuals live on more than one livelihood activity including agriculture, wage employment, labour and small-scale enterprises. Notably, Olsson et al. (2014) describe livelihoods as dynamic processes through which people adopt internal and external stressors, both indirect and direct in order to transform their assets into income, dignity and agency. In the context of climate variability and change, the livelihood discourse clarifies the extent of vulnerabilities and the responses that communities take (Badjeck et al., 2010).

The common understanding is that livelihoods are universal. However, the stressors are different amongst the poor and the rich, as well as between the rural and the urban dwellers. According to Mphande (2016), achieving livelihoods aligns with the capacity of the individual and that of the household. At an individual level, livelihoods are conceptualized as the person’s ability to obtain survival needs, including food, shelter and clothing. At the household level, livelihoods are activities essential for finding necessities for survival. Somorin (2010) highlights that “livelihoods” are assets and goods for consumption, capabilities and agencies. Livelihoods depend

on tangible and intangible assets that communities own (Scoones, 2009) or have the ability to access such resources (Ellis & Mdoe, 2003).

2.2.2. Sustainable Livelihoods

The concept of sustainable livelihoods is perceived differently by different scholars. According to Mphande (2016), livelihoods are regarded as sustainable if they can help communities cope with and recover from the stressors. Sustainable livelihoods ought to have the strength to provide opportunities for future generations and to provide long and short-term benefits at the local and global levels. For livelihoods to be considered sustainable, they ought to provide a safety net for the communities that depend on them. Sustainable livelihoods do not only sustain life for the next generation but they also empower decision-making, reduce vulnerabilities and assist people to recover from the diversity of shocks that threaten life. For example, South Africa, like other countries, has partially contributed to sustainable livelihoods likely due to the shift in economic streams, a decline in agriculture and a failure to understand local contexts (Hajdu et al., 2020). With decreases in labour, communities receive social welfare to sustain livelihoods as well as to prevent poverty and insecurities. The focus of this research study is to examine the livelihoods of agro-pastoralists in the Tosing community council and to assess the climate finance impact thereof on this community.

2.2.3. Agro-pastoral Livelihoods

Agro-pastoral livelihoods encompass a combination of agricultural and pastoral activities. Agro-pastoralists engage in both crop and livestock farming to sustain their way of life. The agro-pastoral community often relies on a combination of agriculture and livestock rearing to attain income and food security (Fre & Tsegay, 2013). The pastoral mode of living follows communal ownership of rangeland resources. Pastoralism is a livelihood system based on grazing animals in a way that supports communities on land subjected to land extremes (Nyariki et al., 2009; Arijumend, 2018). This resource management method provides pastoralists with sustainability, sovereignty, and flexibility. Pastoralism is the main rural livelihood in the world's rangelands and drylands but mostly neglected (Jenet et al., 2017). Agro-pastoral livelihoods incorporate pastoral livelihoods but they are not agro-pastoral livelihoods (Beyene, 2012).

Agro-pastoral livelihoods have been practised for a long time in sub-Saharan Africa (SSA). They have been understudied, according to Valdivia et al. (2013) who suggest that both the pastoral and agro-pastoral systems adapt to climate change based on altitude to accommodate crop and livestock production. Nonetheless, Kongnso et al. (2021) contradict the statements that the livelihoods of agro-pastoralists are dependent on altitude. Instead, they argue that the livelihoods of agro-pastoralists are dependent on land, availability of water as well as climatic conditions. It is with this annotation that the livelihoods of agro-pastoralists are completely seasonal (Fre, 2018). In many aspects, agro-pastoral livelihoods resemble those of the nomads; the only change is that countries no longer live in the Stone Age. Though agro-pastoral livelihoods are vulnerable, their capacity to produce livestock acts as a source of income for farmers in cases of crop failure (Richardson et al., 2022; Silvestri et al., 2012).

2.2.4. Pastoral Livelihoods

The concept is about making a living from herding and ownership of livestock. Pastoral livelihoods entail the grazing of livestock. In South America, pastoralists herd llamas and alpacas in rangelands (Valdivia et al., 2013). Valdivia et al. (2013) emphasise that in pastoral communities, production systems are less diverse but families depend on income from non-farm activities of other members. Supposedly, individuals can seek work and afterwards send remittances home as an engine for income. However, there are challenges with this production system. Bisson et al. (2021) claim that pastoralists are victims of stigmatization and abuse, as their camps have been subjected to attacks. This integration is a process that is supported by transhumance movements that facilitate the movement of animals and information. Furthermore, pastoral livelihoods lack the capacity to strengthen the chain of production from aspects of processing, transportation and commercialisation. Market dynamics channel livelihoods of the agro-pastoralists into vulnerable positions.

The emphasis is that pastoral livelihoods are sustained through herds. Fre (2018) states that pastoralism is a livelihood system with a reliance on livestock production. A study conducted in Burkina Faso by Hamsphire & Randall (2000) found that pastoralist livelihood activities entailed ownership of cattle, sheep and goats. However, since the 1970s, drought has increased and herd size has been reduced due to the challenges in search of water and pastures. Similarly, Kongnso et al. (2021) purport that soils that suffix pastoral livelihoods may be degraded because of

overgrazing and invasion of land by poisonous plants. Nkuba et al. (2019) report that pastoralists in Uganda practise transhumance as an adaptation to climate change as well as to reduce conflicts between neighbouring communities over grazing land.

2.2.5. Climate Vulnerability

The aspects of vulnerability are of diverse dimensions. However, this study delves into those dimensions that are relative to climate change. Climate vulnerability refers to the extent to which individuals and communities are at risk of being exposed to climatic shocks and with no position to cope (Ayatunde et al., 2015). It is the capacity to be wounded by climate change impacts (Sewando et al., 2016). The empirical literature posits that vulnerability implies weak adaptive capacity to climate variability and change. In addition, Watts & Hans (1993) emphasise that vulnerability is a multidimensional aspect brewed by the political and economic structures that derive people's capabilities. Ayatunde et al. (2015) purport that the vulnerabilities of pastoral and agro-pastoralists in the Sahelian are influenced by a lack of access to resources and the changing rainfall patterns. Nonetheless, Wisner et al. (2004) confirm that vulnerability extends beyond exposure as it includes probability for damage, ill-being and injury due to a disaster. Primarily, Watts and Hans (1993) indicate that exposure to risks may render individuals, households and communities defenseless and hinder their recovery.

In the economics literature, vulnerability is defined as a loss relatively in monetary value (Alwang et al., 2001). However, the economic perspective on vulnerability is critiqued for its bias as vulnerability encapsulates risks as well as structural and transitional vulnerabilities (Chaudhury & Hasnain, 2021). Relatively, climatic shocks exacerbate vulnerability in agriculture and food supply chains. For instance, increasing temperatures and declining precipitation patterns lead to poor production as well as crop failures (Chaudhary et al., 2017). Furthermore, Awal (2015) asserts that climate vulnerability is influenced by lack of access to political power, decision-making, environmental degradation and ineffective disaster reduction strategies. In contrast, Davies et al. (2009) insinuate that climate vulnerability is rather a result of climate sensitive structures of production like agriculture. The vulnerability discourse originates from the Latin word "vulnerare" which means, "to wound" (Biswas & Anwaruzzaman, 2019). The concept of vulnerability is conceptualised as being susceptible to attack with the incapacity to survive otherwise. Nonetheless, the argument is that shocks do not lead to vulnerability if there is a capacity to cushion it.

2.2.6. Climate Finance

Climate finance is inspired by the Climate Policy Initiative (CPI). It is an investment from the public and private; most international sources aim at the mitigation of greenhouse gas emissions and development of agriculture; that is they are resilient to climate change and variability. Climate finance incorporates international and domestic sources as climate interventions (Naran et al., 2020). Similarly, Lipper et al. (2021) also specify that public and private, domestic and international agencies may be the sources of climate finance. They purport that sources of climate financing may also be bilateral and multilateral entities. In the agriculture sector, climate finance is for purposes of improving agriculture-dependent livelihoods. Furthermore, Colenbrander et al. (2018) confirm the ambiguity of the climate finance definition. Climate finance may refer to the new and additional climate initiatives from developed to developing countries to enhance resilience. The ratification is that any expenditure established for climate mitigation and adaptation is referred to as climate finance.

The concept of climate finance, stems from the United Nations Framework Convention on Climate Change (UNFCCC) policy. The policy outlines the allocation of financial resources for climate change mitigation and adaptation initiatives. This policy aims to mobilize financing to achieve climate change adaptation and mitigate gas emissions (Bhandary et al., 2021). Specifically, climate finance fulfils the sustainable development goals (SDG 13) for contributing towards urgent action on climate change and its impacts. The global north distributes an estimated US\$100 billion yearly to the global south to help with climate resilience as well as to cut down on climate variabilities (Lipper et al., 2022). Scholars argue that developing countries contribute minimally to the gas emissions but are the ones that get the most hit by climate variability and change (Kolawole et al., 2016).

Climate finance was developed to challenge climate injustices and to maintain what (Lipper et al., 2022) coined “the polluter pays principle”. This means that the global north is responsible for the gas emissions. This is why they contribute to climate finance to help those without the fiscal means to counteract climate change. According to Chocodhury et al. (2023), climate finance is relative to official development aid (ODA). However, they admit that with climate finance, developed countries fund developing countries to deal with climate change mitigation and adaptation. The

Paris Agreement regulations on climate finance indicate that funds must be transferred from the countries with the most wealth and which have the responsibility for climate change (International Federation of Red Cross & Red Crescent Societies, 2022). Thus, the climate financing beneficiaries are those countries with neither the fiscal capacity to cope with nor the responsibility for climate change.

Giglio et al. (2021) note that many aspects of climate change are financially related so is the establishment of climate finance. These stem from pricing and the hedging of climate change impacts. According to the International Federation of Red Cross & Red Crescent Societies (2022), climate change economics have received less attention in the literature until recently through climate finance. This is probably due to a lack of a common definition of what constitutes climate finance (Midley et al., 2016). The authors submit that climate funds can be classified into the categories of dedicated climate finance, climate-specific finance and climate-related finance.

2.2.6.1. Dedicated Climate Finance

This component relates to activities listed by dedicated climate funds that are established specifically for the purpose of funding climate mitigation and adaptation interventions. These include, for example, the World Bank Climate Investment Fund (CIF), the Adaptation Fund (AF), and the Green Climate Fund (GCF).

2.2.6.2. Climate-Specific Finance

This component relates to the activities funded within multi-purpose programmes or vehicles by donors such as the banks that are not necessarily linked to climate objectives. Projects were considered climate-specific if they clearly labeled climate activities in the project documentation. Renewable energy projects, for example, were included if the project description referred climate change mitigation and adaptation as well as if the objective is to reduce emissions. In addition, projects were included into the climate-specific discourse if they were labeled by donors as such.

2.2.6.3. Climate-Related Finance

This component categorizes climate finance on the basis of projects that are likely to benefit climate change agendas that do not specify a link to mitigation or adaptation. For example, these agendas include renewable energy, waste treatment and land management activities without

explicit climate objectives. In this component climate finance initiatives are difficult to categorize because of ambiguity and double-counting.

2.2.7. Climate Justice

The interpretation of climate justice is that climate change has been brought about by developed nations. It was from this deliberation that the notion of climate justice was coined. Mercer et al. (2012) posit that climate justice stems from the fact that climate change has been led principally by the burning of fuels in the global north although the consequences of climate change are experienced by the global south. Colon (2022) deliberates that climate justice entails linking human rights with development together with climate initiatives. This concept means that climate resilience interventions ought to be bound within the growth of the local communities. The emphasis is that climate justice advocates for the representation, inclusion and protection of the vulnerable. Colon (2022) repeats that the solutions directed towards climate resilience have to ensure equity in access to resources. Nevertheless, the emphasis of this study is that climate justice means that not everyone has led to climate change. That is to say that while all the countries must address climate change, the burden should not be felt only by the developing countries because it concerns combating the social, gender, economic, intergenerational and environmental injustices. The climate crisis dilemma stems from the annotation that systems profit at the expense of pursuing sustainable development. Therefore, the climate justice notion hopes for a transformative perspective in alleviating unequal burden in communities that make a living through the environment.

2.2.8. Climate Adaptation and Mitigation

The agro-pastoral community has its own practices of adapting to climate change and mitigating its effects. Climate change adaptation and mitigation refers to the measures taken to reduce vulnerability of natural and human systems against the actual and expected effects of climate change (Silvestri et al., 2012). The concept refers to the adjustment of the systems against climate change effects. A study conducted by Silvestri et al. (2012) documented climate adaptation and mitigation initiatives in Kenya. The initiatives included the production of crops and livestock, livestock destocking, diversifying animal breeds and moving the animals to other sites for grazing. Silvestri et al. (2012) emphasise that there is an increase of vulnerability amongst the poor who

depend on livestock but are vulnerable to climatic and market disparities and livestock disease shocks.

The empirical research literature presents climate adaptation as a strategic route to coping shocks. Similarly, Sarker et al. (2022) posit that climate adaptation is a strategy which farmers use to cope with climate change. This strategy can be assessed through climate service interventions, behavioral change and impacts at the local level. Nonetheless, International Federation of Red Cross & Red Crescent Societies (2022) purport that climate adaptation saves lives and prevents suffering. The emphasis is that the strategy saves money compared to a late action when the disaster event has occurred. Climate adaptation is about reducing the risks posed by climate change on the livelihoods (Davies et al., 2009). This is why this study was intended to focus only on agro-pastoral livelihoods. The word adaptation is about the ability to respond to the potential impacts of climate change in a way that moderates harm or takes advantage of the opportunities that climate change can afford (Davies et al., 2009). Similarly, Dicker et al. (2021) conceptualise climate adaptation as the practices, processes and strategies that account to achieving climate resilience.

2.2.9. United Nations Framework Convention on Climate Change (UNFCCC)

This convention is conceptualised as a collection of the UN member States whose goal is to address climate change through the distribution of adaptation and mitigation finance to help the countries whose fiscal capacity is in no position to sustain the process on their own (Whitley et al., 2018). The convention was signed in 1992 to ratify the basis for international climate negotiations. Ever since the convention was established, discussions on addressing climate change have been eminent. They include the Kyoto protocol 1997 and the Paris Agreement 2015. The convention has been ratified by 197 states who are committed to climate change adaptation, mitigation and regularly reports on progress (Grantham Research Institute and Climate Change and Environment, 2022). The goal of the convention was to mitigate greenhouse gas emissions. Through the common but differentiated responsibility (CBDR) principle, the convention recognises that different states have various capabilities and responsibilities to address climate change. It is from this and other dynamics that climate finance ambiguities are derived. Moreover, the convention establishes institutions, structures and processes that guide climate finance initiatives.

2.2.10. International Panel on Climate Change (IPCC)

The International Panel on Climate Change (IPCC) is an institution within the United Nations (UN) that is ratified to assess the science related to climate change (De Pryck & Hulme, 2022). This institution was established by the United Nations Environment Programme (UNEP) and the World Meteorological organisation (WMO) in 1988 to provide national leaders with periodic scientific assessments concerning climate change risks as well as the adaptation and mitigation initiatives. There is also the National Adaptation Programme for Action (NAPA), which supports livelihood development.

2.2.11. National Adaptation Programme for Action (NAPA)

The National Adaptation Programme for Action (NAPA) advocates for enhanced livelihoods to survive the effects of climate change at the international, national and regional levels (Gwimbi, 2017). The NAPA was ratified as a strategy through which the impact of climate change could be dealt with for the development of livelihood of communities in the developing countries. The UNFCCC introduced this concept in the Mareakech convention 2001 as a country specific adaptation activity that would assist the vulnerable to respond to climate variability. Gwimbi (2017) argues that NAPA is a political agenda developed to support communities with climate change adaptation and mitigation. Countries have also aligned their development policies with this global agenda to adapt and mitigate climate change and Lesotho is no exemption.

2.2.12. National Strategic Development Plan (NSDP)

The National Strategic Development Plan (NSDP) is a strategy with six pillars that are developed by Lesotho to pursue development. For this study, pillar five, which focuses on reversing environmental degradation and adapting to climate change (Rocchi & Delsetto, 2016), is the most relevant. This pillar also advocates for rural development with water and agricultural resources. Vulnerable communities benefit from the NSDP through provisions of agricultural inputs as well as the support rendered on crop and livestock production. The NSDP further identified agriculture as another driver of development besides manufacturing, tourism and investments.

2.2.13. Nationally Determined Contributions (NDCs)

The Nationally Determined Contributions (NDCs) is a policy instrument ratified in the Paris Agreement 2015. The term refers to the nationally determined contributions which emphasise each country's commitments to pursuing climate adaptation and mitigation (Lipper et al., 2021). The

NDCs are the pinnacle of the Paris Agreement and the results of its long-term goals. It encompasses country initiatives that entail mitigation of emissions and coping to climate change impacts (Sfoma, 2019). The Paris Agreement (article 4, paragraph 2) stipulates that countries ought to prepare, communicate and maintain NDCs (Bondansky, 2016). The reiteration is that through the NDC, members pursue mitigation at the local vicinity.

2.2.14. Sub-Catchment

The concept refers to a smaller portion of land within a greater catchment. Normally, sub-catchments are tributaries that flow into larger rivers. They are separated by natural boundaries which consist of hills, mountains and ridges (Kiprotich, 2016).

2.3. Theoretical Framework

2.3.1. Disaster Pressure and Release (PAR) Model

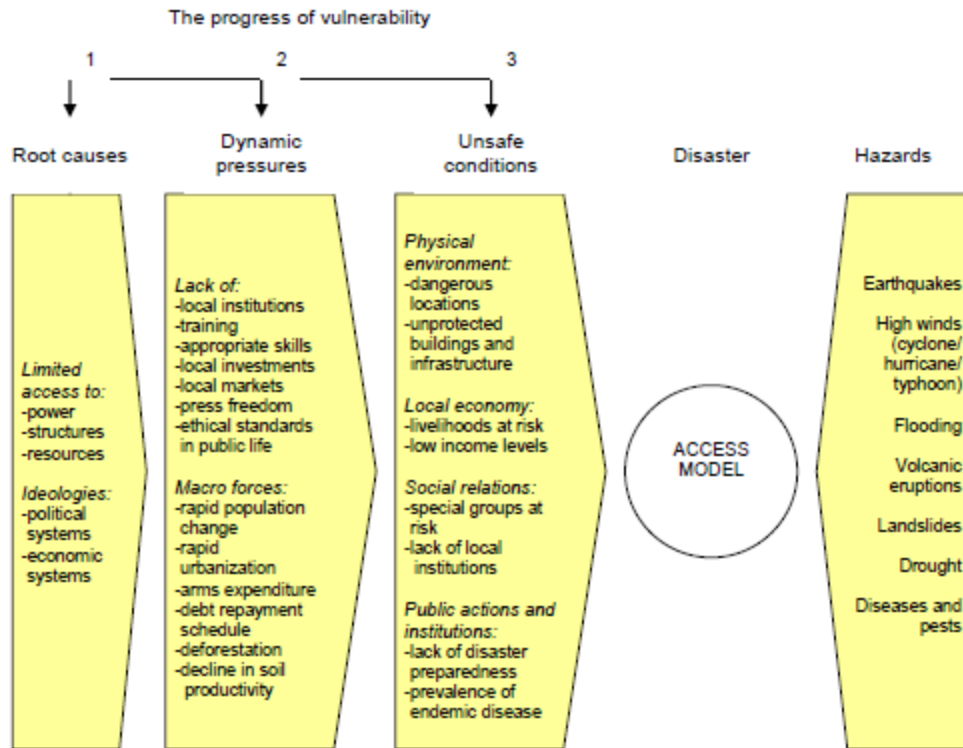
This The Disaster Pressure and Release (PAR) Model is used in this study to understand how vulnerability is produced. It was introduced in the first version of "At Risk" in 1994 (Michellier et al., 2020). It describes how risks and hazards can develop to vulnerability. Ayatunde et al. (2015) emphasise that the model requires an understanding of the interaction between biophysical vulnerability, the production of hazards as well as the social context of vulnerability. Notably, Wisner et al. (2003) state that the pressure and release model is used to understand how disasters occur, when they occur and how they affect the most vulnerable communities.

Ayatunde et al. (2015) used the model to investigate the progress of vulnerability among agro-pastoral communities in the Sahel region. Similarly, Biswas and Anwaruzzaman (2019) used the model to assess rural susceptibility to industrial risks in Punjab, India. According to Biswas and Anwaruzzaman, industry-related dangers have a negative impact on the environment and human well-being. For example, empirical evidence shows that livestock, human lives and the environment have all suffered as a result of industries. According to Wisner's pressure and release model (2003), disasters occur when natural hazards affect susceptible communities. To clarify, Michellier et al. (2020) underline that disasters are caused by the root causes or the underlying risk factors which are the key factors that lead to vulnerability. According to Wisner et al. (2003), disasters cause most of the social factors that determine vulnerability. In disaster studies, the pressure and release model is based on adverse events rather than hazard and vulnerability

(Hammer et al., 2019). The pressure and release model indicates that a vulnerability path can be related to its root causes, dynamic pressures and risky conditions. This model claims that a disaster is caused by a series of events that may be traced back to remote circumstances that have little to do with the disaster (Wisner et al. 2003). Nonetheless, Hammer et al. (2019) emphasise the vulnerability basis of the model. The root causes of vulnerability include limited access to power, structures, resources and characteristics of political and economic systems. These factors can contribute to the dynamic pressure events due to lack of training, limited investment, freedom, rapid population growth, urbanization and deforestation. The root causes are primarily static and can be resistive to change during an emergency response. Dynamic pressures are the ever-changing systems that can lead to increased pressure and harmful conditions. Unsafe conditions exist in the physical environment, the local economy, the social relationships and public activities.

The release part of the approach stems from the notion that in order to release a disaster, the chain of vulnerability must be addressed way down to the underlying causes, rather than the proximate cause of the hazard (Wisner et al., 2003). The theoretical literature criticizes the pressure and release model because it fails to provide a clear account of where pressures begin to unfold (Wisner et al., 2003). Hammer et al. (2019) argue that the pressure and release model fails to account for the role of disaster exposure. This is because it does not explain differential vulnerability (Wisner et al., 2003). It does not take into consideration or suggest any modifications before, during or after the catastrophic event. The method falls short of offering a theoretical explanation of normal life before a tragedy. It does not provide the theoretical study of a typical life prior to a tragedy. It does not explain how or when injustices between the normal and abnormal develop or how normal life turns abnormal.

Figure 1. Disaster Pressure and Release Model



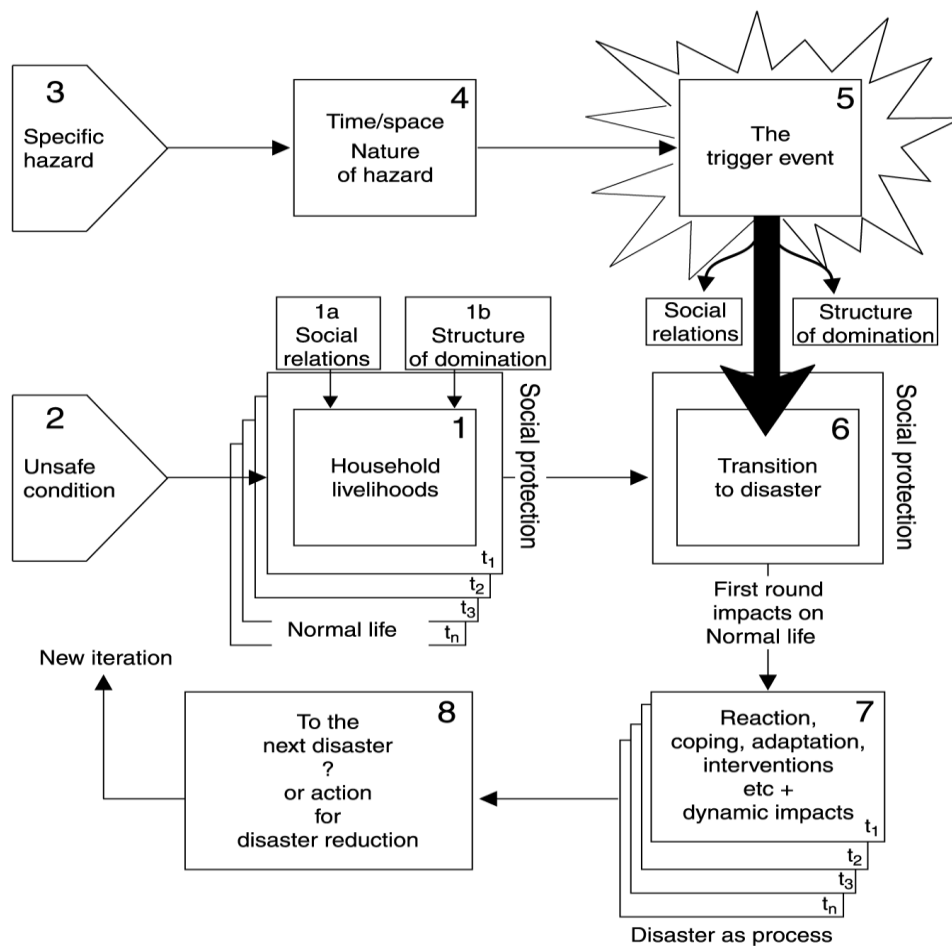
Wisner et al. (2003) pressures that result in vulnerability

2.3.2. Access Model

The Access Model is employed in the study to supplement the pressure and release the shortcomings and arguments of the model. It is intended to comprehend the multifaceted experiences of environmental and societal events as well as the potential long-term effects of a disaster (Wisner et al., 2003). Depending on the natural risks that caused it, a disaster might have many names and descriptions. Climate disasters, for instance, can cause hunger by imposing on the livelihoods of vulnerable groups, particularly on agro-pastoralists, or by causing hazards to the buildings, thus disrupting life and causing property damage. The goal of the access model is to provide a microscopic explanation for how vulnerability arises. It establishes the vulnerability trajectory between people and households. The goal of the access model is to provide a micro-level explanation for how vulnerability arises. It further establishes the vulnerability trajectory between individuals and families and addresses the effects of disasters as they happen, the agency and role of those engaged, the effects that they have on individuals, their coping mechanisms, their

strategies and their interactions with other players. The pressure and release model makes it worse to separate the dangers from social processes; hence, the access model is utilized to prevent this from happening. According to the access model, risks are linked to how systems impact resources and means of subsistence. Similar to this, the access model concentrates on how dangerous situations develop in relation to the political and economic mechanisms that distribute wealth, income and other natural resources in the society. The model also enables the environment to be integrated into the explanation of the implications of the hazards. It demonstrates how social structures set up the circumstances where hazards affect society groups differently. Winchester (1986, 1992) examined the impact of tropical cyclones in South East India using the concept of access.

Figure 2. Access Model



Wisner et al. 2003 the access model.

2.3.3. Pressure State Response (PSR) Model

The Organisation for Economic Co-operation Development (OECD) created the Pressure state Response (PSR) model. According to Li et al. (2021), this model takes into account the strain that human activity puts on the environment and its resources which can be operationalized as the state. According to the theory, social and economic conditions lead to human reactions that put a strain on the environment and frequently have a detrimental effect on human society. According to the theory, people must work together to address the pressures and impacts by taking action to either reduce or prevent the environmental response that causes harm, or by acting to lessen the negative effects when they occur. With the aid of this framework, we may investigate and clarify the ways in which agro-pastoral systems are impacted by climate stresses. Most remarkably, the model also makes assumptions about how small-scale farmers may react to defend livelihoods and local agriculture. A framework for creating in-depth descriptions of climatic pressure and communities through adaptation is offered by the pressure state response framework.

The model depicts that pressure is any stress, hurt or distress that modifies the state of adaptation and is caused by climatic or non-climatic factors in the economy, society or environment. The term "state" describes the condition of adaptation, frequently on a farm or farming system, as a result of exposure to climatic or interacting non-climatic forces that cause stressors and, eventually, impact; these elements may include constraining or enabling factors that necessitate a response, a term which refers to any adjustment or action that actors take to lessen or prevent the harmful effects of pressures that affect those who are susceptible to stressors. The idea was applied to examine the ways that pastoral and agro-pastoralist farming systems and livelihoods are impacted by climate change in a study conducted by Debela et al. (2019). The goal of this study was to learn more about how human-nature interactions mitigate the effects of climatic stressors on livelihoods that depend on agriculture.

2.3.4. Pellings Typology Framework

The framework provides a useful typology for adaptation based on location, vision, phasing, the degree of collaboration and the origin of measures. Pelling (2010) argued that, depending on the vision of adaptation, responses can be considered as “resilience”- when measures strive to maintain the status quo. That is to bring a normal state of the adaptation unit to function in the shocks. Nevertheless, adaptation responses can be regarded as transitional when strategies push-against

the status quo, by suggesting new ways of doing things, as a result of predicted or experienced change (Pelling, 2010). Furthermore, adaptation mechanisms are considered transformational when adaptation measures allow the scale of change required to bring a major non-marginal change disturbing the relationship between society and environment (Pelling, 2010). This type of adaptation envisions reconfiguring the structure of development. The theory is applicable in the study to determine how climate finance initiatives shape the development of agro-pastoral livelihoods.

2.4. Literature Review

2.4.1. Types of Livelihoods Before Climate Finance Introduction

Livelihoods are a set of activities, assets and capabilities required to make a living (Chambers & Conway, 1992; Ellis et al., 2003). A large proportion of the world continues to make a living from fishing despite global warming scares that force neglect of this livelihood stream. The fish folk livelihoods hold importance as they provide consumers with protein (Badjeck et al., 2010). Nonetheless, climate change continues to challenge livelihoods in the Northern Sea because of the changes in the sea surface temperature. The activity of fish farming in India, Cambodia and Ghana provide a source of income and employment for women. The challenge with this way of making a living is that poor management may lead to overfishing and extinction of the fish species. In addition, climate variability affects the fish folk livelihoods through changing water temperatures, the rainfall and sea level rises. These issues expose marine ecosystems and people who depend on ecosystems to suffering.

Before the introduction of climate finance, the rural communities were dependent on forests for livelihoods. According to Sumorin (2010), forest resources enable livelihoods for the vulnerable in Africa. For example, communities in Burkina Faso, Mali, Ghana, Niger and Senegal harvest wood for energy and earn income from the sale of wood. However, Hajdu et al. (2020) attest that changing agrarian patterns in Southern Africa prolong poverty and vulnerability. They reiterate that the livelihoods in Southern Africa involve marine resources and firewood harvesting. This is despite increasing social welfare grants that most arguments have led to lack of reliance on wage work. The livelihood history of Southern Africa stems from the apartheid and colonial era wherein poverty, vulnerability and exploitations emanated. Because of natural resource mining, men from

across Africa migrated to work in the coal and gold mines as a shift away from agriculture. However, Lipper et al. (2022) reveal that most livelihoods, characteristic of fishing and natural resources face poverty due to low productivity, returns, market constraints, uncertainty and instability. Kolawole et al. (2016) mimic that livelihoods of the poor in rural communities depend on fishing. They believe that climate variability has always tormented people and their ways of life. Climate change effects such as floods and drought usually affect livelihoods and production processes.

Furthermore, before the introduction of climate finance communities depended on agriculture to make livelihoods. A study conducted in Mexico by Mercer, Rerales & Wainwright (2012) documented that local communities make a living through maize production. Commonly maize has been considered a staple food that is important for maintaining food security. However, despite its significance before the introduction of climate finance a lot of communities partially engaged in small-scale farming. These may be due to the market constraints lest destruction of land infrastructure by climate change. According to Mphande (2016), an estimated 70 percent of the rural dwellers earn income through on-farm activities while it is about 50 per cent in Asia and Latin America. Hajdu et al. (2020) state that despite diversity, Southern African agrarian communities encourage horticulture to maintain livelihoods. In addition, vulnerable communities, including agro-pastoralists devise their sources of income through the sale of crops. Nonetheless, Valdivia et al. (2013) report that agro-pastoralist communities do not employ livelihoods through crop production but also through livestock production. Furthermore, Fre (2018) reiterates the uncertainty within the agro-pastoral livelihoods literature, as most academic studies tend to neglect agro-pastoral systems. Fre confirms the uncertainty because agro-pastoralists and agriculturalists alike are seasonally in search of lands for grazing. The agro-pastoralist livelihoods perpetually change because of urbanization, climate change effects as well as conflicts between the nations and within the local communities. This kind of change may be for the better as divided families provide livestock products for those in towns to sell for cash. Nonetheless, livelihoods of the agro-pastoralists in Berni Ammer consist of petty trade, migrant labour, urban employment and working the fields.

Moreover, Kongnso et al. (2021) maintain that livelihoods of agro-pastoralists are vulnerable. The uncertainty of production and dependence on degraded land due to overgrazing and invasion of

harmful ecosystems to soils render the vulnerability. Nonetheless, Richardson et al. (2022) argue that vulnerability of livelihoods is not due to climate change only; other factors play a role. This includes but is not limited to poor infrastructure (irrigation, transport), technical and extension services. The conflicts in Mozambique affect production because of loss of land and crops due to displacements and restrictions of movement.

2.4.2. Impacts of Climate Finance on Agro-pastoral Livelihoods

The impact of climate finance on agro-pastoral livelihoods is multidimensional. Chaudhury & Hasnain (2021) argue that despite an improvement in agricultural livelihoods due to climate finance support, social and economic restrictions may inhibit agro-pastoral livelihoods. When production increases there may be lack of market access to sell the produce. Climate finance projects are established to enhance the farmers' production even in disaster events. The difficulty with this annotation is that most projects lack technical expertise to succeed and most beneficiary communities lack it. For example, a great number of climate finance projects do not assess the implications of the project beyond the project site. In contrast, climate finance levels up production for the vulnerable farmers through the provision of rain-harvesting tanks in drought-persistent areas.

Nonetheless, Chaudhury (2020) links the dynamic impacts of climate finance projects to the integrated actors. It is difficult to define the impacts as the concept keeps evolving and lots of actors determine the impacts based on their agenda. Climate finance projects are used as tools for political wrangling, sometimes at the cost of the vulnerable. The characteristic impacts of climate finance are diverse because countries operationalise the discourse in their ways. Climate finance allocation is targeted towards achieving resilience of agriculture and water resources from climate change stressors (Pauw, 2022). In addition, Roberts et al. (2021) denounce the ambiguity of climate finance as the reason why nations describe it in ways that they deem fit. Chiriac et al. (2020) purport that climate finance is limited in part as it covers only a certain proportion of small-scale farmers and agribusinesses. This scenario brings about vulnerability for farmers, rural businesses and agriculture production due to inadequate natural resource management and supply chains.

Climate finance also targets adequate use of land, appropriate forestry practices and management by combating the loss of natural resources. It transforms rural communities and enhances development of agriculture (Lipper et al., 2021). The challenge is that financial resources that are distributed towards mitigation and adaptation are seldom enough to cover all the needs. It is hard to depict the implications of climate finance on livelihoods because of high expectations from beneficiaries. Moreover, Khan et al. (2020) ascertain that the super power nations often assume climate finance expectations, based on their own understanding of vulnerability. For example, a large sum of climate resources is held in the control of multilateral development banks (MDBs) and national governments while only a small portion is controlled by the locally-led stakeholders (Colenbrander et al., 2018).

2.4.3. Participation of Agro-pastoral Farmers in Climate Finance Projects

The empirical evidence depicts that the Nations led on by climate change and variability experience food-insecurity and underdevelopment. Climate finance projects are established to give way for climate change adaptation and mitigation as well as to increase productivity for those communities which are dependent on agriculture. Supposedly, Okumu et al. (2023) indicate that Kenya adapted international initiatives to cope with climate change events. For example, there is a Kenya climate-smart agriculture project developed by the World Bank in the government of Kenya for the above reasons. Participation of farmers in projects gives them empowerment as responsibility minimizes conflicts. The growing concern however is the fact that in Kenya there is a weak participation of farmers in projects. As a result, 5.0% of the population lives below the poverty threshold despite the existence of climate-smart agriculture projects. Nonetheless, participation of stakeholders instills the collaboration of the local community with the project objectives (Kumar, 2002). This kind of discourse portrays ideals of sustainable development. Aref (2011) posits that participation of farmers in projects is an engine to development and its absence leads to underdevelopment. The participation of farmers in climate finance projects gives a sense of entitlement to the local community.

The development community has been gaining interest in helping communities to cope with climate variability through projects. For example, between 2016 and 2018, 30 African countries

benefited from CSA projects whose aim was to transform livelihoods and place farmers in a state of climate resilience (Oyonyiola et al., 2022). However, climate finance projects encounter challenges in the participation of farmers. That is despite the economic and environmental promise of the climate finance discourse. For example, the climate finance projects of some African countries' are troubled with inadequate infrastructure and weak institutional support from governments and local communities whose role is to enhance participation. In addition, Odhong et al. (2019) postulate that the participation of farmers in climate finance initiatives is relative to segregation. Women in agriculture, unlike in other sectors, receive little information on production activities and the climate finance initiatives. However, Mburu et al. (2012) argue that participation of farmers in projects is dependent on informal and formal communication channels between the farmers and extension officers. The low communication within different stakeholders may contradict the participation of the farmers in climate finance projects. Furthermore, Lee (2017) emphasizes that farmers' participation in projects depends on their eligibility, willingness as well as their ability to participate.

Participation of farmers in Kenya proposes productivity, achieving climate resilience and receiving carbon payments for ecosystem rehabilitation. These initiatives include reforestation and afforestation as well as terracing. Notably, Arunrat et al. (2016) indicates that participation of farmers in climate finance projects is likely to be determined by socio-economic background. The issues that influence participation include gender discourse, being a household head, evolution of farm and non-farm income stems, having a large household and getting first hand training experience of the project.

The notion of participation in community development is evolutionary. Participation of local stakeholders is perceived as an engine to empowerment of lay persons (Garande & Dagg, 2005). It is a recent idea; in the past, development agencies rarely consulted local communities on project issues. For example, the water treatment project in Chile had non-traditional participation of the local people.

2.5. Summary

This chapter shows a review of the literature on climate finance and agro-pastoral livelihoods. It presents a layout of the segments: conceptual framework, theoretical framework and literature review. The conceptual framework discusses the main terms in the study including livelihoods, sustainable livelihoods, agro-pastoral livelihoods, climate vulnerability and climate finance. The theoretical framework discusses theories such as the Disaster Pressure State Response (PSR) and Pellings' Typology Framework, which guides the study. The literature review explores the types of livelihoods that were before the introduction of climate finance, highlighting dependence on the fish folk livelihoods and natural resources in rural areas and the impact of climate variability on these livelihoods. The chapter emphasizes the significance of understanding the historical context of livelihoods to assess the impact of climate finance on agro-pastoral livelihoods.

Chapter Three: Research Methodology

3.1. Introduction

This chapter presents and outlines the methodology adopted for this study. It discusses the research design, types of data, data collection techniques and instruments, the population of the study, sample and sampling procedure, data management, data analysis, ethical considerations as well as the limitations of the study.

3.2. Research Design

Research design is an inquiry within the qualitative, quantitative and mixed method approaches. It gives direction for the procedures in the study (Creswell & Creswell, 2018). Bardill & Cobbe (1986) emphasize that research design is a plan that depicts why a certain issue deserves investigation and how the process is conducted.

This study follows a mixed method design. The complicated nature of climate finance impacts on agro-pastoral livelihoods requires a holistic design, combining numerical and nuanced narratives. Using both qualitative and quantitative data provides an opportunity to validate the findings through triangulation (Wudad et al., 2022). Triangulation helps to better look at phenomena from different angles rather than in one (Neuman, 2006).

The case study design is employed to study issues of climate finance and agro-pastoral livelihoods. It is one where data is gathered concurrently in a convergent core design and the results are merged to examine a case and or to compare multiple cases (Creswell & Creswell, 2018). The data gathered from the participants' experiences regarding the impact of climate finance on agro-pastoral livelihoods assisted in identifying the cases for data presentation and interpretation. The strength of a case study design is in the use of several sources and techniques for data collection. The present study focused on the impact of climate finance and agro-pastoral livelihoods in the Seapala sub-catchment in Quthing, Lesotho.

3.3. Types of Data

The study depended on primary and secondary data. Primary data was collected from the key informant interviews, focus group discussions and questionnaires while secondary data was collected from the existing literature.

3.4. Data Collection Techniques and Instruments

This section outlines the data collection techniques and instruments that were used for the study. The study used primary data to determine the impact that climate finance had on agro-pastoral livelihoods. Therefore, data was collected using the key informant interviews, focus group discussions, observations and the questionnaires. The data was first collected from the key informant interviews, focus group discussions and a questionnaire. The questionnaire helped the researcher to fill in the gap left out by the data collected from the key informant interviews and focus group discussions.

The secondary sources of data were books and other publications as well as the internet.

3.4.1. Key Informant Interviews

Data collection through interviews is an encounter between the researcher asking the questions that are relevant to the study and which respondents have direct knowledge about (Barbie, 2011; Barbie, 2016). The study used a semi-structured interview guide (APPENDIX 2). The interview technique was appropriate in social research as it had an interview guide, which gave direction to the data collection process (Cohen et al., 2018). A semi-structured interview was suitable for this study, as it gave the researcher and participants a chance to examine issues that might not have been included in the interview schedule. The semi-structured interviews are culture sensitive; thus, they allow participants to engage with the study without feeling alienated to the research procedure (Cohen et al., 2018).

The interviews were conducted on people with an insightful knowledge about the Seapala sub-catchments climate finance project. The subjects included the Local Chief, the councilor of the Tosing community council, the project manager to the project and the Lesotho Meteorological Services (LMS) climate finance officer. The interviews were conducted on a face-to-face basis while some were telephonic. The study used open-ended questions to allow probing for clarity.

3.4.2. Focus Group Discussions

According to Cohen et al. (2018), a focus group is a form of group interaction that discusses a topic, which is led on by the researcher to obtain a collective rather than an individual perception. It is a data collection technique where groups are interviewed together to engage in a discussion (Barbie 2011; Barbie 2016). Focus group discussions provide more data within a short time, as

they are objectives led (Cohen et al., 2018). Furthermore, focus group discussions are useful for research as they can triangulate the findings with other data collection methods (Cohen et al., 2018). Mathosi (2022) adds that the use of the focus group discussions in data collection allows researchers a chance to analyze the participants' wisdom and relevance to the topic under study.

Following the one-on-one interviews with the key informants, the study conducted a focus group discussion (APPENDIX 2). The residents of the Seapala sub-catchment climate finance project in Tsatsane, within the Tosing community council constituted the focus group. The participants were the elderly, the youth and the middle-aged Basotho men and women dependent on agro-pastoral livelihoods. According to Barbie (2011, 2016) a focus group discussion can be made up of 5 to 15 people who engage in a guided discussion on a topic of interest to the researcher. This study engaged 4 focus group discussions, each group with five members and making a total of 20 participants. The participants were selected on the basis of their knowledge regarding the area under investigation.

3.4.3. Observations

Data collection through observation involves the researcher taking detailed field notes on the behaviors and activities of individuals within the study area (Creswell & Creswell, 2018). Observation extends beyond mere looking; it entails systematically noting people, events, behaviors, settings, artifacts, and routines (Cohen et al., 2018). Participant observation, in particular, is considered vital as it facilitates the production of field notes in close proximity to the field (Baker, 1999). In this study, notes were written contemporaneously with the events, experiences, and interactions described by participants. For the purposes of this research, field notes were recorded in a structured manner, complemented by open-ended observations that allowed participants to freely express their views. However, field notes are inherently selective, as the researcher may document only what appears significant, potentially omitting less notable details (Baker, 1999). To address this limitation, other data collection methods were employed to fill any gaps. Despite the time-consuming nature of observations, they were adopted due to their unique ability to provide first-hand, live data from naturally occurring social situations.

3.4.4. Questionnaires

For the quantitative data collection, the study used a questionnaire (APPENDIX 3) which provided closed-ended responses. These are helpful in the data analysis (Gray, 2014; Creswell & Creswell, 2018). Analysis of closed-ended questions is a bit simple and it provides a quick way to code the responses from the respondents (Gray, 2014). This is because close-ended questions dictate the preliminary responses for the selected respondents (Cohen et al., 2018). The study administered the questionnaire to the agro-pastoralist household members. The sample constituted respondents from the Seapala sub-catchments climate finance project. The respondents from the villages in Tsatsane contributed to the study. The district of Quthing has a diversity of languages. As a result, the study incorporated a local into the study to translate the questionnaire into a language that the locals could easily understand.

3.4.5. Secondary Data

The study used secondary sources of data whose purpose was to support and strengthen the primary data. This constituted the use of internet sources as well as consultations with the Thomas Mofolo Library archives, the media as well as the information from the Lesotho Meteorological Services (LMS).

3.5. Population of the Study

According to Barbie (2011), the population of the study is a collection of people who have the information from which the researcher intends to conclude. It is an abstract concept characteristic of a set of cases that researchers want to study (Neuman, 2006). Mathosi (2022) affirms that the population of the study is a unit of analysis with the same characteristics as those under investigation. The Basotho men and women, youth and the elderly directly and indirectly benefiting from the Seapala sub-catchment climate finance project, as well as the LMS climate finance officials made up the population of the study.

3.6. Sample and Sampling Procedure

The study employed purposive and stratified sampling for qualitative and quantitative data respectively. Purposive sampling is appropriate to select unique cases that are especially informative (Neuman, 2006). The use of purposive sampling in the study assists to identify the

cases for which to draw information. The people residing in the Sebapala sub-catchment climate finance project and the LMS climate finance officer constituted the sample. Stratified sampling was employed for quantitative data. This sampling procedure produces samples that are more representative of the population than simple random sampling (Neuman, 2006). The strata were drawn from the household members dependent on agro-pastoral livelihoods in the Sebapala sub-catchment. The respondents came from the villages of Tsatsane where the project is being carried out.

3.7. Data Management

The data from the key informant interviews, focus group discussions and questionnaires were captured and stored using a cellphone. The researcher familiarised with the data by repeatedly listening to the recordings of the collected data from the key informant interviews and focus group discussions. The recordings were transcribed into the texts, which were organized into codes, and preliminary themes derived from the study objectives. The sub-themes were guided by the research questions. The data received from the questionnaires were summarized to enhance the visualization process. The secondary data from documents were categorized according to the already derived themes and sub-themes.

3.8. Data Analysis

The study is intended to assess how climate finance impacted agro-pastoral livelihoods. Therefore, qualitative and quantitative approaches were used to analyze data and interpret the findings. Thematic analysis was applied for qualitative data. It is usually applied on the texts from the interviews to examine common themes and patterns of meaning (Caulfield, 2023). This is a method where data gathered is assigned codes, which will be categorized into themes to become user friendly. Descriptive analysis techniques were also used to analyze quantitative data. For this kind of analysis, the described and presented study was collected through visualized techniques. The forms of data display consisted of tables. Nuanced data labels were assigned numerical values for readability when input was made into the Statistical Package for the Social Sciences (SPSS). This analysis incorporated the use of the SPSS to summarise its key characteristics.

3.9. Ethical Considerations

The study considered the following ethics for research: - the basic principle for the respect of people, protection from harm, voluntary informed consent as well as anonymity and confidentiality. In addition, the study respected the intellectual property of other researchers by providing the relevant referencing.

3.9.1. Respect for People

Before actually beginning to conduct the research study, the researcher asked for permission from the Department of Development Studies ethics committee. The researcher further asked for permission from the relevant institutions and gatekeepers, the Local Chief, the Sebapala IWM project management and the LMS climate finance office to conduct the study. During the data collection process, the researcher respected the participants (who were involved in the study), the site of the research study and their values.

3.9.2. Informed Consent and Voluntary Participation

At the beginning of the data gathering procedure, participants were given a letter of consent (APPENDIX 1). It described the aims of the research study and the data collection methods. The consent form was read to the participants. It sought their consent to engage in the research study. The consent form included the right to voluntarily participate and to withdraw from the study should participants feel uncomfortable. The participants were assured that they would not be subjected to harm should they refuse to participate in the study or to withdraw from it. At the beginning of each interview, participants were informed about the purpose of the study that was purely academic and no form of payment was issued for their participation in the study. There was also an enquiry about whether participants would be willing and available to engage with follow up interviews at a later stage should a need arise.

3.9.3. Confidentiality and Anonymity

The researcher noted that research invades privacy and the personal life of participants as it shows their private details (Neuman, 2006). Therefore, the study ensured protection of the participants and their well-being through concealing their identity, as suggested by Barbie & Mouton, (2006). For data presentation and analysis, the study ensured participants anonymity. Anonymity is considered when participants cannot be identified through a given response (Barbie & Mouton,

2006). With this regard, respondents' identities were protected and their names were not revealed throughout the study. In this study, the responses from the participants were treated as confidential throughout the study. Confidentiality was ensured where all the name details that could identify participants were replaced with pseudonyms.

3.10. Limitations of the study

Like any other studies, the study has its own limitations. For instance, because the researcher was foreign to the research site, the participants were not known. Another limitation included work related issues and other entitlements that inhibit the participants' availability to provide insights. As a result, the response rate was initially lower than anticipated. Some participants had migrated to the Republic of South Africa (RSA) to find employment. Nonetheless, those who were found at the site gave all the information required for the study.

Chapter Four: Background of Agro-pastoral Livelihoods in Lesotho Before the Introduction of Climate Finance

4.1. Introduction

This chapter provides details on the historical development of livelihoods, specifically agro-pastoral livelihoods, in Lesotho. It begins in Lesotho, with an outline of the existing state of agro-pastoral livelihoods in the country before the implementation of climate finance projects. The chapter acknowledges the diversity of livelihood systems in Lesotho and identifies the various challenges that hinder their sustainability. It examines the historical context of development and climate finance initiatives that preceded the project currently under study. By delving into various livelihood debates, the chapter contributes to the understanding of livelihood vulnerability and informs climate mitigation and adaptation strategies. Furthermore, it documents the stressors that impact agro-pastoral livelihoods and explores potential responses. Overall, the chapter sheds light on the climate variability faced by agro-pastoral communities in Lesotho, particularly in arid and semi-arid regions where most climate finance projects are piloted.

4.2. Location

The kingdom of Lesotho is a small nation. It is estimated to cover an area of 30 555 square kilometers (Rocchi & Delsetto, 2016). It is surrounded by the Republic of South Africa (Nagakura, 2010; Matarira et al., 2014; Rocchi & Delsetto, 2016). It is located at latitude 28 31 S and longitude 27 30 E (Nagakura, 2010; Matarira et al., 2014). According to Nagakura (2010), Lesotho is located in the center of the Drakensberg Mountains in the Southern African region. Matarira et al. (2014) say that Lesotho is on the Drakensberg escarpment of the eastern edge of the South Africa plateau. Notably, three-quarters of Lesotho is largely mountainous, with hard-to-reach highlands (Rocchi & Delsetto, 2016). Similarly, Matarira et al. (2014) reiterate that Lesotho is a country characterised by eroded mountains that cover 70 per cent of the country. Of the land, 70 percent is above 2000 meters altitude (Nagakura, 2010). The highest peak in Lesotho is Thabana Ntlenyane, It rises 3 482m above sea level. The Koppen Climate Classification regards Lesotho as having a maritime temperate climate (Nagakura, 2010). This means that the climate is influenced by the ocean, and has moderate temperatures, cool summers and frequent rainfall. However, Matarira et al. (2014) observe that Lesotho is characterised by changing rainfall patterns and fragile ecosystems. It

consists of water, agricultural grazing land, forests, diamonds, sand, clay and building stones as the natural resources that sustain the livelihoods of the agro-pastoralists both at household and individual levels.

Plate 1: Map of Lesotho



Source: Internet Archives

4.3. Population and Demography

This section discusses the characteristics and statistics of the residents of Lesotho, an enclave surrounded by the Republic of South Africa. The people residing in Lesotho are commonly known as Basotho (plural) (Mosotho, singular); however, there are other ethnic groups. The residents largely speak Sesotho and English. There are also minority groups which speak iSixhosa, Sephuthi, Ndebele and a small proportion of Asian speakers. Notably, the long history of Lesotho as a unified nation renders the ethnic cream for it relatively homogenous. The clan groups in Lesotho comprise Bakoena, Batlounge, Baphuthi, Batuang, Bats'oeneng, Bathepu, Makhoakhoa, Makhelokoe, and Matebele.

The population of Lesotho is estimated at 2.41 million, largely consisting of more women than men (Phateng, 2023). Lesotho has a substantial youth population, estimated at 40 per cent. The rest compose the elderly population. The rest of the people residing in Lesotho are from Asia, Europe and across parts of sub-Saharan Africa. The population of Lesotho is considered a Christian country with the Roman Catholic, Evangelical, Anglican and other Christian groups. The literacy rate of Lesotho is at 85 percent of which those aged 15 and above comprise this proportion. Lesotho deals with a large proportion of socio-economic difficulties such as poverty, HIV/AIDS prevalence, food shortages and limited access to healthcare and other services.

4.4. Context of Livelihoods of Agro-pastoralists in Lesotho

The historical livelihood development in Lesotho has been closely intertwined with environmental engagement. Ferguson (1994) highlights that the livelihoods of the people in Lesotho stem from the cultivation of staple crops such as maize, wheat and sorghum. Simultaneously, livestock production plays a complementary role, with cattle, sheep and goats grazing in the fields, on the pastures and on the rangelands. Murray (1980) further characterizes Lesotho's livelihood discourse, emphasizing the concept of "mafisa." The practice involves senior chiefs distributing livestock to their descendants as compensation for work performed. Despite this traditional system, challenges persist in livestock production. Ferguson (1985) observes that although livestock is maintained for livelihood purposes, farmers in Lesotho rarely sell it. That is, livestock serve as symbols of prestige, dowry payment and status. The limited market for selling livestock may

contribute to this phenomenon. Overall, the livelihood systems in Lesotho continue to be influenced by both traditional practices and economic considerations.

Basotho engage in various alternate livelihood activities which often come with challenges. For instance, between 1865 and 1868, the wars between Basotho and the Orange Free State Afrikaners led to famine, livestock losses and crop failure (Murray, 1981). Despite these hardships, the export of grain, specifically wheat and sorghum; enabled the acquisition of farm equipment, including ox-drawn plows. Though crop and livestock production livelihoods continue to persist in Lesotho, Empirical evidence suggests that Basotho have adapted to shocks and disasters. For example, the 1896 rinderpest outbreak resulted in significant cattle deaths. In response, Basotho turned to using horses for cultivation and transportation. Recently, horses have become an income source from tourism, particularly in the remote areas of Lesotho where pony trekking activities attract visitors. However, challenges persist. Crop and livestock producers frequently face drought events that inhibit agro-pastoral livelihoods due to suppressed market economies. Additionally, these livelihood systems are constrained, with land plots often left fallow due to resource limitations (Bardill & Cobbe, 1986).

The livelihoods of agro-pastoralists in Lesotho encompass the domestication of natural resources and engagement in agriculture. Notably, a significant portion of the agro-pastoral community relied on hunting and gathering practices, alongside their nomadic lifestyle. Murray (1981) acknowledges the historical context of Basotho livelihoods. The author highlights an essential livelihood activity, building homesteads, as a means of earning income. Boys and men often become livestock herders through employment, receiving payment in the form of livestock or currency. However, the literature emphasizes the challenges faced by herders, who frequently operate in remote areas far from home. They encounter adverse weather conditions, including storms and snow. Bardill and Cobbe (1986) identify other livelihood sources in Lesotho. They include artisanal and handicraft production. Furthermore, temporary migration to South Africa provides opportunities for Basotho to work as domestics.

Pastoralism and agro-pastoralism represent livelihood strategies adopted by people residing in arid and semi-arid regions to sustain themselves. According to Tofu et al. (2023), the livelihoods of agro-pastoral communities involve significant labour intensity. For instance, Motšoene (2014)

asserts that agricultural practices in Lesotho are complemented by activities such as constructing huts and creating clothing from animal skins. However, these income-generating handiwork activities are vulnerable to natural disasters, including floods, strong winds and heavy snowfall, which can damage infrastructure and property (Letsie & Grab, 2015). Despite the challenges, rural areas in Lesotho continue to practise agro-pastoralism even though they face social vulnerability due to limited infrastructure development, remote access and the distance from the markets. The soils in which agro-pastoralist livelihoods are rooted are semi-arid and often yield insufficient results due to erosion, invasive shrub growth and wildlife disturbances.

Agro-pastoral livelihoods in Lesotho present challenges to socio-economic development. Basotho male herders adopt livestock herding practices to secure ownership of livestock and mitigate poverty. However, this practice places males at a disadvantage, as limited access to education results from their semi-nomadic lifestyle and the remote, inaccessible herding locations. A significant proportion of Basotho males engage in herding from a young age, often as early as three years of age instead of attending preschool (Pitikoe, 2018). Freeman et al. (2008) emphasise that Thaba-Tseka, Mohale's Hoek and Leribe districts primarily rely on crop cultivation, livestock rearing and traditional beer brewing as livelihood activities. Notably, many mountainous areas in Lesotho lack proximity to the markets and essential services, leading to income and food deficits. In these regions, donkeys and horses serve as the predominant modes of transportation due to inadequate infrastructure. Climate shocks prompt herders to relocate livestock to lower elevations in winter in order to ensuring access to fodder and the construction of cattle shelters. Frequent drought in Thaba Tseka and Mohales' Hoek districts contributes to delayed planting seasons, reduced yields and overall production challenges. Agro-pastoral communities face difficulties related to delayed livestock services, insufficient availability of animal treatment drugs, and limited dipping facilities.

Despite having livelihoods basic to the discourse of agro-pastoralism, there are livelihoods that augment this system. For example, Bloomer (2009) reiterates the disposition that Basotho often have alternative practices to maintain crop and livestock livelihoods. The cannabis producing households sustain small-holder farmers to generate income (Bloomer, 2009). Similarly, Pitikoe (2018) depicts that Basotho herd livestock to garner employment and personal wealth. Furthermore, Bloomer (2009) emphasizes that Basotho men supplement agriculture production

with employment in South Africa, particularly in mining. That makes Lesotho a labour reserve to the Republic of South Africa. Bloomer (2019) highlights that the production of cannabis plays a role on agro-pastoralists, small-holder farmers and the vulnerable. The cultivation of cannabis yields cash from Southern Africa, thus assisting farmers to make ends meet and adapt to the adverse effects of climate change and variability. This happens regardless of the illegality of the mass production of cannabis, the secrecy in production, and trade and the troubles with law enforcement (Bloomer, 2009). Empirical literature argues that the history of alternative livelihoods to crop and livestock production dates as far back as the late 1990s. The emphasis is that Basotho earned remittances from South Africa and received international currency on the sale of cannabis.

The empirical literature further clarifies that livelihood activities may be ingrained in them the struggles that pose vulnerability. That is, even those communities that partake in on-farm activities and non-farm activities are highly vulnerable to sustaining livelihoods. For instance, Freeman et al. (2008) document that the population in the Thaba-Tseka district is isolated from the markets for meat and other services such as livestock medication services. Likewise, Molelele's Hoek and Leribe districts engage in livelihood activities involving crop farming and livestock herding. Similarly, households in these districts have the capacity to produce vegetables and to establish traditional beer stores. The most prevalent domestic animals include cattle, sheep, goats, pigs, poultry, horses and donkeys while crops include sorghum, maize and beans. Often, the agro-pastoral communities are located in isolated areas where there is inadequate infrastructure. Notably, horses and donkeys are rented out for transport and earn income for their owners. The agro-pastoral communities often get advice from the LMS experts to sell livestock to manage vulnerability. Apparently, issues of livestock disease such as scab cause loss of livestock and reduce the quality of wool produced. This is despite the country being one of the few producers of fibre resources in Southern Africa.

Though some agro-pastoralist livelihood activities deal with the aforementioned pressures and lead to vulnerability, some escape routes have been imposed on Basotho. Freeman et al. (2008) deliberate that the coping strategies imposed include the rationale for borrowing either cash or food, and selling of livestock that has been overemphasized in other statements, as well as the building of shelter in the cold season. Quinlan (1995) documented that Basotho farmers used to develop a transhumance system to maintain agro-pastoral livelihoods and to address grassland

degradation. Within this practice, livestock were led to graze valleys in the summer and the grassland village in winter. Nonetheless, by the early 1900s colonial institutions changed the livelihood discourse of Basotho, probably for the better, through the Cape Colony and Free State markets. Prior statements have made mention of the use of donkey-like horses called mules to carry heavy loads of wool to the trading stations. Furthermore, Quinlan (1995) demonstrates that the survival initiatives that were established by Basotho and sustained through the colonial experts when grassland deteriorated include grazing management practices such as rotational grazing and destocking. However, these practices failed, possibly because the agencies dismissed the efforts of stockowners. The land management practices were placed farther away from the village areas and adequate monitoring was unlikely. According to Turner (2001), history suggests that Basotho have been adapting to change from millennia.

The agricultural discourse in development literature is considered the backbone of Lesotho. That is to say, on-farm activities once sustained the nation past diverse vulnerabilities. According to Turner (2001), documented households, specifically in Mohales' Hoek and Quthing in the 1990s took the priority of agriculture to sustain livelihoods throughout the year. Musi & Mathosi (2022) clarify that rural livelihoods in Lesotho are maintained through agriculture, particularly crop and animal production. However, these activities were not forever as the discovery of diamonds in Kimberly and gold in the 1880s saw the country become the source of human labour to the Republic of South Africa. During this transition, agriculture was left in the control of women (Musi & Mathosi, 2022). Concisely, Murray (1980) conducted a study on the progression of Lesotho from the granary state to the operationalised knowledge of the labour reserve. The findings revealed that agriculture is the backbone of Lesotho. However, the livelihood system encountered difficulties. For instance, Murray (1980) associates the shift in narrative as Lesotho came to being known as a redundant labour reserve. This point is further linked to the 1930 low agricultural production facilitated by the low number of males to adequately manage farms, typically because men were fixated on employment opportunities in South Africa. Nonetheless, Matarira et al. (2014) reiterate that agricultural livelihood activities are the backbone of Lesotho. Murray (1980) & Matarira et al. (2014) purport that despite the significance of agriculture to Lesotho's livelihood dilemma, there are challenges. However, Matarira et al. (2014) rebut that the unreliability of agriculture is likely due to the dependency on rainwater for irrigation, environmental and social vulnerability, not lack of males as Murray (1980) claims. For example, lack of access to land,

poor human health, environmental stressors such as drought, and unpredictable precipitation patterns affect the agriculture-backbone narrative.

4.5. Overview of the Study Area

Tsatsane is a rural village within the Tosing community council located in the Quthing District in Lesotho. It is found in the rural Seapala sub-catchment from the historical village of Mount Moorosi. This rural village is found within the depends of Quthing past Dalewe. The area lies completely in a valley and it is located between the Seapala River and its smaller tributary, the Morataleng River. The village has a few shops that sell the basics. The villages in Tsatsane, particularly Ha Liphapang offer accommodation in huts and guided pony trails, which drive the tourism industry in the region (Cornhill et al., 2007). Nonetheless, Cornhill et al. (2007) emphasise that the villages of Tsatsane “*Ha Liphapang*” and “*Ha Sekonyela*” practice ecotourism through activities such as waterfall views, rock art, wild bamboo forests, a colony of vultures and various antelope species. Notably, Ha Liphapang village is a destination for flyfishers who are eager to try an unknown location. This village is part of the Quthing Wildlife Development Trust Ecotourism Initiative. Though highly mountainous, the area has two rivers with rainbow trout fish. Recently there have been discoveries of the yellow fish but this fish population is seasonal. In particular, the area has a diversity of fauna and flora and boasts nine well-preserved San rock art paintings at Ha Sekonyela and other nearby places. The traditional huts are used as homestays and generate income for the villagers (Lyn, 2019). The residents of Tsatsane mostly own livestock and produce crops which they make a living from. However, natural disasters, and socio-economic and structural dynamics in part challenge the sustenance of the agro-pastoral livelihoods in this community.

Plate 2: Map of Tsatsane Village, Ha Liphapang



Source: Internet Archives

4.6. Summary

The chapter provides a background on the livelihoods of agro-pastoralists in Lesotho, particularly focusing on the Seapala sub-catchment area before it introduces climate finance projects. It delves into the traditional practices and challenges faced by the agro-pastoral community, highlighting how their dependence on agriculture and livestock rearing has been affected by environmental degradation and climate change. The chapter aims to shed light on the pre-existing conditions of the agro-pastoralists' livelihoods to better understand the impact of subsequent climate finance interventions. It is a crucial part of the study as it sets the stage for evaluating the changes brought about by climate finance in the later chapters.

Chapter Five: Data Presentation, Findings and Analysis

5.1. Introduction

This chapter presents the findings of the data collected from different stakeholders in the Seapala IWM project, Tosing community council. The study sought to determine the impact of climate finance on livelihoods of the agro-pastoralists in the Seapala sub-catchment. The first section describes the participants of the study. The second section presents the demographic characteristics of the participants. This is followed by a thematic and descriptive presentation of the findings adopted in the study to depict a framework of summarized categories, themes and visualizations that emerged from the data analysis follows. The data was grouped into thematic and descriptive areas derived from the research objectives, and research questions that guided development of the sub-themes. It was coded in pseudonyms to ensure anonymity and confidentiality of the research participants. The subsequent segment maintains consistency in naming the sections and details the presentation of the research findings. Quotes as well as visualizations from different participants are used to show that various participants engaged with the study.

Finally, the chapter presents the analysis of the study findings and discusses them in relation to the aim and objectives of the study as well as the reviewed literature. This discussion is divided into sections, based on the objectives of the study. The first section addresses the agro-pastoral livelihood activities; the second section discusses the impact of climate finance on agro-pastoral livelihoods. The last section discusses the participation of stakeholder farmers in projects.

5.2. Participants in the Study

This section presents a profile of the key participants that took part in the study. The section presents the first results from face-to-face semi-structured interviews. To preserve anonymity and confidentiality of the participants, the key participants were labeled as P1, P2, P3, and so on. Table 2 presents the demographic profile of the key informant interview participants.

Table 1. Profile of Key Informants

Participant	Position	Age	Sex	Village	Community Council	Highest Level of Education
P1	Chief	56-65	M	Ha-Liphapang	Tosing	Primary
P2	Chief	56-65	M	Morataleng	Tosing	No Education
P3	Chief	46-55	F	Ha-Sekonyela	Tosing	Secondary
P4	Councilor	36-45	M	Ha-Liphapang	Tosing	High School
P5	Council Secretary	36-45	F	Tosing	Tosing	Tertiary

P6	Project Manager	56-65	M	Masowe Central	Tikoe	Tertiary
P7	Project Facilitator/Field Officer	46-55	F	Maseru Central	Ha Abia	Tertiary
P8	Climate Finance Officer	46-55	M	Maseru	Maseru	Tertiary
P9	Project Consultant	56-65	F	Liphakoe	Upper Moyeni	Tertiary

Source: Interview data 2024

Table 2. Profile Range of Respondents' Age

Age	Agro-pastoralists	Chiefs	Project Coordinators
18-24	3	0	0
25-35	5	0	0
36-45	9	0	0
46-55	10	1	2
56-65	12	2	2
66+	8	0	0

Source: Interview data 2024

The section on respondents age, the Sehapala Integrated Water Management (IWM) project revealed a predominant participation of middle-aged and elderly individuals. Notably, most young people were not actively involved, except for those from Matshela-Ha-Beli. The majority of participants identified either as belonging to agro-pastoral households or as agro-pastoralists themselves, with only a few falling outside this category. The elderly participants emphasized the need for project revision. While they expressed willingness to contribute, the far work locations posed a significant challenge to their active participation.

In the section profiling the respondents by gender, a notable disparity emerged: there was a higher representation of females compared to males. The study attributed this discrepancy to the unavailability of males during data collection. Men were occupied in the fields, tending to livestock at cattle posts, or attending other farmers' meetings. Other household members stepped in to participate in the Sebapala IWM project when men were unavailable. The male respondents who interacted with the researcher highlighted that most men did not actively engage with the project due to its lack of immediate incentives.

Table 3. Profile of Respondents' Gender

Village/Position	Male	Female
Morataleng	2	6
Ha-France	2	6
Matshela-Ha-Beli	2	8
Ha-Liphapang	1	6
Phirintso	1	1
Ha-Thibella	0	2
Ha-Sekonyela	1	2
Tosing	0	1
Chiefs	2	1
Project Coordinators	2	2

Source: Interview data 2024

The table presents the educational level acquired by the participants.

Table 4. Profile of Respondents’ Level of Education

Highest Educational Level	Morataleng	Ha-France	Matshela-Ha-Beli	Ha-Liphapang	Phirintso	Ha-Thibella	Ha-Sekonyela	Tosing	Chiefs	Project Coordinators
no education	5	3	4	2	1	1	0	0	1	0
Primary	3	4	4	3	1	1	1	0	1	0
Secondary	0	1	2	0	0	0	2	0	1	0
High school	0	0	0	1	0	0	0	0	0	0
Tertiary	0	0	0	1	0	0	0	1	0	4

Source: Interview data 2024

Besides the key informant participants, the study collected data through focus group discussions. The group consisted of the elderly, middle-aged men and women, a group of youth, and members of the rotational grazing association. Participants were from the villages of Matshela-Ha-Beli, Morataleng, Ha Liphapang, Ha France as well as Ha Thibella. To ensure the anonymity and confidentiality of the

focus group participants, participants' responses were labelled based on the group and participant number. For instance, focus group discussion 2, participant 3 was labeled as (FGD2 P3). Participants for the focus group discussions were selected based on availability and knowledge of the Sebapala IWM project. Furthermore, the data was collected through the questionnaires. The respondents to the questionnaire consisted of individuals from four of the villages within Tsatsane. To ensure anonymity and confidentiality, respondents to the questionnaires were labeled as Q1, Q2, and Q3 and so on. Likewise, respondents to the questionnaires were chosen based on availability and willingness to engage in the study. In order to access these respondents, the area Chiefs made the community aware of the research study to be conducted in their community. Other respondents were members of the project that exists in each village covered by the Sebapala IWM.

5.3. Demographic Characteristics of Participants

The section presents the demographic characteristics of the participants. These characteristics comprise different aspects from age, sex, highest educational level and occupation of participants. Some of the participants were agro-pastoral farmers, others came from agro-pastoral households, and the rest that participated in the project were agro-pastoral farmers nor were they from agro-pastoral households.

5.3.1. Ages of Participants

According to the findings of this study, the age of participants in the study ranged between 18 and 66. These results show that the least represented age group constituted about 10 percent of the population. The least age group amongst the participants was the 18-24 group. The modal age group of participants in the study was 60 years and older, while the average age group was 56-65.

5.3.2. Sex of Participants

The findings show that 67 percent of the participants were females and 32 percent of the participants were males. One of five participants in the study was a male and the rest were female. The more dominant sex group was females. In one of the areas visited, the Sebapala

IWM project, all the participants were females. From the focus groups discussion and questionnaire respondents, 32 participants were all females.

5.3.3. Education Level of Participants

The section presents the educational level acquired by the participants. The results showed that 2 percent of the participants attained tertiary level education. However, 35 percent of the study population had not attended school at all. Notably, 50 percent of the participants in the study had attained primary level education. In addition, 10 percent of the participants had attained literacy through “*paliso*”.

5.3.4. Occupation of Participants

The majority of the participants in the study area came from agro-pastoral farming households, as agro-pastoral farmers and the unemployed. Despite being farmers, some participants were also self-employed in the informal sector while others were employed in carbon projects “*fato fato*”, the IACOV project as well as gathering activities to maintain livelihoods.

5.5. Research Findings

The section presents the findings of the study. It seeks to unpack the situation in the study area in relation to the objectives of the study.

5.5.1. Reason for the Implementation of the Seapala IWM Project

In this section, this study discusses the key reasons for implementing the Seapala IWM project. Although the theme was not originally part of the research objectives, it emerged as a prominent theme during data coding. Subsequent sub-sections provide an overview of the historical context of the livelihoods, land degradation and diversification of livelihood strategies. The section also provides a discussion of the findings related to these aspects.

5.5.1.1 Strengthening of livelihood systems

The findings revealed that the Government of Lesotho (GOL), the UNDP in collaboration with Global Environmental Facility (GEF) implemented the Seapala IWM project in the Seapala sub-catchment *for two reasons*. P7 indicated that the project was implemented to develop livelihood systems of the community. One respondent said:

In the early stages of the project, a community engagement study showed that members of the community were living on crop and livestock production but this livelihood system was vulnerable (P7. Personal Interview, May 2024).

P4 further asserted that the project was implemented to address issues of land degradation that cause food and water insecurity.

The project promotes community-wide planning and action at sub-catchment level to ensure integrated management of land and water resources in the area (P4. Personal Interview, May 2024).

5.5.1.2 Land Rehabilitation

The participants further assert the reason for the introduction of the project to rehabilitate the land. According to them, another reason for putting up the project was to curb the encroachment of invasive plant species that destroy pastures and rangelands. P7 indicated:

The aim of the project is to develop the pastures and rangelands in order to diversify grazing land as the invasive plants degrade the quality of wool and mohair (P7. Personal Interview, May 2024).

P5 further mentioned:

The project is situated within the Seapala sub-catchment, with its primary objective focused on the rehabilitation of land and water resources. Community members engage in activities upstream along the Seapala river and also to preserve the wetlands, as inadequate management has been identified as a contributing factor to the ecosystem degradation in that area.(P5. Personal Interview, May 2024).

Plate 3: Rehabilitated Pastures and Rangelands Across Lesotho



Source: Internet Archives

5.5.1.3. Diversification of Livelihoods

Most participants emphasized that the project aimed to diversify livelihood options within the community, aligning with the Seapala IWM project's goal to provide alternative livelihood sources for the Tsatsane community. While agro-pastoralist activities remain central, the project sought to enhance business acumen and encourage the exploration of other activities that could improve climate resilience and livelihoods. One participant from the study highlighted:

The overall objective of the project is to leave the community with initiatives that can enhance sustainable livelihoods. These include beekeeping projects and training of the community to develop orchards (P9. Personal Interview, May 2024).

Another key participant had the same sentiments and asserted:

The project officials told us that the project will equip the community with development of the environment to improve livelihoods as life is found in the environment (P2. Personal Interview, May 2024).

Similarly, another participant reiterated:

The motto of the project is that we should preserve the environment, formulate associations and cooperative unions to help us develop livelihood opportunities for members in a cooperative (P3. Personal Interview, May 2024).

From these findings, the reason for implementing the Sebapala IWM project is to improve the livelihoods of the agro-pastoralists amidst the challenges of land deterioration through degradation, erosion of pastures and rangelands as well as encroachment. The literature attests that vulnerability may be a result of poor management practices (Kongnso et al., 2021). This is relative to the invasive species destroying the environment, which the agro-pastoralists rely on for livelihood production. The observation is that resource management practices provide a leeway for sustainable livelihoods. The pressure and release (PAR) model proposes that disaster events occur when natural hazards affect vulnerable communities (Aziz, 2018).

Though the study focuses on climate finance and livelihoods, other factors also contribute to the vulnerability of agro-pastoralist livelihoods. This indicates that climate change is not the sole issue in the Sebapala IWM project impacting agro-pastoralist livelihoods. However, the project is expected to contribute significantly to the effective improvement of these livelihoods in the future. During data collection, this impact seemed limited, likely because the project was still in its second year and only a small portion of the community had secured contracted employment, while the rest were volunteering and receiving food parcels as compensation.

5.5.2. Livelihoods Situation before the introduction of Climate Finance

Another objective of the study was to ascertain the types of livelihoods that existed in the Sebapala sub-catchment before the implementation of the Sebapala IWM project. Livelihoods in Lesotho are found from working the environment either as farmers or mining of the natural resources, they have also been influenced by remittances from migration. The findings are relevant to the sub-sections that explore aspects such as agriculture, informal small-scale enterprises, climatic shocks, and ecotourism. In addition, this study engages in a detailed discussion of each sub-theme based on the research findings.

5.5.2.1. Agriculture

Plate 4: Livestock and Farmers Working the Fields in Lesotho



Source: Internet Archives

One of the themes that emerged when participants were asked about their livelihood activities before the Sebapala IWM project was agriculture. The findings highlight that participants relied on crop and livestock farming. These livelihood activities entailed production of crops such as beans, peas, maize, tomatoes and root crops such as potatoes. P3 emphasised:

To make living possible, the community produced crops and raised livestock, cultivation of crops was mostly on a subsistence sometimes (P3. Personal Interview, May 2024).

Plate 5: Farmer Harvesting of the Maize Crop



Source: Internet Archives

FGD2 P2 with the same standpoint revealed:

The community sustains livelihoods through selling crops and livestock; these activities make life easier (FGD2 P2. Personal Interview, May 2024).

The study participants further emphasised that agro-pastoralists in the Tosing community had the capability to sell different items from crops, harvested natural resources, sold hand-made items and provided a service to others. FGD2 P1 indicated:

The cultivation of crops paves the way to afford basic household needs; throughout the year, we sell firewood and brooms as part of our livelihoods (FGD2 P1. Personal Interview, May 2024).

FGD2 P2 further asserted:

Assisting the elderly in washing their clothes helped us to buy household necessities including food and soap (FGD2 P2. Personal Interview, May 2024).

FGD3 P5 supported this by saying:

We harvested and sold indigenous medicinal herbs such as “khoara” to maintain livelihoods (FGD3 P5. Personal Interview, May 2024).

When participants were asked whether the sale of “*khoara*” led to sustainable livelihoods, the response was that they had ‘grown to be men’ because of its sale. Through this research, the researcher noted that harvesting of this medicinal herb was regulated to prevent instances of overharvesting. Another natural resource that the community harvested to maintain livelihoods was rosehip that was sold to the Rosa Carina company. FGD P5 highlight the statement that:

The selling of rose hip, though seasonal, helped us in earning income over the years. However, it has been sold under the market price. This year it will be different because of the council intervention to regulate prices (FGD2 P5. Personal Interview, May 2024).

The study findings show that on-farm activities made the most livelihood activities in the Seapala sub-catchment. Specifically, agriculture-based activities were significant in this community before the introduction of the Seapala IWM project. The findings highlight that the livelihoods of the agro-pastoralists are constrained because of climate variability and change. This is a result of the encroachment of land by the invasive species and shrubs that destroy pastures. Agro-pastoralists indicate that households in this region mostly produce crops for subsistence. Ferguson (1985) & Murray (1980) support the observation that crop and livestock production is on a subsistence level in Lesotho. In addition, Ferguson (1994) affirms that livelihoods in Lesotho rely on the cultivation of crops and production of livestock.

The findings further highlight that the sale of crops and livestock is market-based. This is such that agro-pastoralists sustain their livelihoods through the sale of crops in order to survive vulnerabilities. This correlates with Kongnso et al. (2021) who maintain that livelihoods of the agro-pastoralists are vulnerable. The emphasis is that vulnerability holds uncertainty in production as a result of land degradation.

5.5.2.2. Informal Small Scale Enterprises

Notably, the prevalent theme that emerged from the findings is that individuals residing in Tsatsane and the Tosing community live on informal small scale enterprises. The researcher made observations of the mass traditional beer cafes in the community. Additionally, when asked of the livelihood activities before the project, most participants reminisced the importance of surviving on selling traditional beer. The following is the response from the FGD3 P4:

The process of selling traditional beer helped me to purchase soap, to feed, educate and clothe my children (FGD3 P4. Personal Interview, May 2024).

The majority of the participants were engaged in this livelihood activity and as such it was a practice in this community, at the household level, which ultimately formed a society or a group. The results from the rotational grazing members showed that the society, amongst other initiatives, also sold traditional beer to sustain the livelihoods of its members and to keep the society functional. These study results highlight the transition of the society to sustaining livelihoods through other informal. FGD4 P3 confirmed:

The society was established in the year 2008 with the objective to nourish livestock, rangelands and livelihoods of the stakeholders in the community. The society is a community of men and women belonging to agro-pastoral and non-agro-pastoral farmers whose aim is to develop the environmental infrastructure and to preserve livestock feeding (FGD4 P3. Personal Interview, May 2024).

FGD4 P5 highlights:

The society normally organizes stokvels, brews traditional beer and sells both food and beer at the concerts to raise funds (FGD4 P5. Personal Interview, May 2024).

The study finds that most farmers were living on informal small-scale enterprises. These activities have helped individuals and household members within the community to afford basic human needs and to attain dignified lives. This livelihood strategy did not only impact

agro-pastoralists but also impacted on non-agro-pastoralist household members. The observation was that households and community associations normally brew traditional beer to raise funds. This is in line with the view by Freeman et al. (2008) that livelihood activities in Lesotho encompass brewing of traditional beer.

From the study findings, the Tosing community members were able to execute livelihood activities as a collective to address the challenges. The findings reveal that grazing associations work together with one common goal. This is highlighted by the observation that livelihood activities in this community were adopted at societal and household levels. The observation was emphasised by the participants for they stated ownership of traditional beer stores even when there is a climate change. During disaster events, storeowners purchase ingredients from the local cafes and shops. This is supported by Li et al. (2021) in the PSR model which proposes that individuals must work together to address pressures that pose vulnerability. From the findings, aspects of access to education and other necessities were improved as a result of these strategies. The informal small-scale enterprises afforded the community access to education as well as buying children's clothing.

5.5.2.4. Ecotourism

One of the livelihood activities that were existent in the Seapala sub-catchment consists of ecotourism which is defined by Das & Chatterjee (2015) as responsible travel to the natural areas that conserve the local environment and peoples' welfare. The emphasis is that principles of ecotourism strive to reduce negative environmental impacts, in order to raise respect for culture, and provide experience to the visitors and financial benefits to the local community. According to the findings, the community initiated preserved tourism activities to earn income. The results reveal that the Bushmen paintings in Ha-Sekonyela initiated community-led tourism. This was evident when the researcher visited one of the cafes. The situation was such that water was not to be sprinkled on the painting as it would fade the painting quality. In these ecotourism activities, a few of the community members worked as tour guides. The findings show that tour guides earned income from this livelihood activity. One participant emphasized:

Before the COVID-19 pandemic, when I worked as a tour guide, the income I earned gave me hope that I would soon be able to purchase a car. However, the pandemic restrictions limited movement (P3. Personal Interview, May 2024).

Plate 6: International Tourists in the Sebapala sub-catchment at one of the homestays



Source: Community Archives

According to the data, ecotourism earned the community wealth as tourists hired horses to ride on pony trails. The tourists also rented homestays and enjoyed the taste of traditional beer and food. The researcher had the privilege to savor the preserved food in dried peaches and “*lipabi*” from these homestays. In addition, the community made a living from a fee paid by tourists to engage in fly fishing events upstream the Sebapala River. The report found that fly fishing payments contributed to the development of the community. Another key participant emphasized that the tourism industry led to the facilitation of the Quthing Wildlife Development Trust where tourists would deposit to support smart-tourism. The literature highlights that the benefits from ecotourism barely reach the local communities (Stronza & Gordillo, 2008). Sometimes the progress of livelihoods is experienced by the tour guides and the few whom

the tourists interact with. The participants revealed that the proceeds from tourists intended for the local community development were mostly used for other ulterior motives.

Nonetheless, the findings show that the livelihoods in the study area embraced ecotourism. The community had bushman paintings and community-led tourism initiatives to maintain livelihoods. The local farmers rent out horses as pony to tourists which earn income, sometimes receiving material things for their hospitality. Tourists that visited the places in Tsatsane, specifically the places around Ha Liphapang, also used the horses to transport their luggage. This is supported by Murray (1981) who documents that horses are relatively used as transportation in Lesotho. Murray (1981) reports that horses are used to carry the luggage when people visit a remote area.

Plate 7: Horses used for transport and carry by tourists



Source: Community Archives

The literature indicates that horses are used to cultivate the land in Lesotho in cases where cattle die as a result of disaster. This practice resonates with the disaster pressure and the release model (PSR) as farmers release vulnerability through the use of horses. Despite the awareness of vulnerability, farmers tended to address only the immediate pressures rather than the core issue. Notably, during the tourists

visits only those farmers who owned horses could earn income. This finding supports Wisner et al.'s (2003) access model which supports the observation that social structures define vulnerability.

5.5.2.3. Climatic Shocks

Among the prevalent themes identified from the findings, it was noted that the livelihoods of agro-pastoralist farmers were significantly challenged by climatic shocks. Additionally, other livelihood activities such as ecotourism and informal enterprises were also adversely affected. Reduced rainfall led to rivers drying up, which in turn attracted fewer fish and flyfishers to the area. Climatic shocks also impacted the production of sorghum, a key ingredient in brewing traditional beer, making it difficult to sustain livelihoods through ecotourism services or informal enterprises. The report indicates that crops and livestock constituted the bulk of the livelihood system in the Seapala sub-catchment. However, annual drought disasters occurring between the winter and spring seasons were reported to disrupt these livelihood activities and capabilities. These droughts delayed planting and disrupted harvests, forcing some crops to be harvested prematurely to avoid bird invasions or damage from cold weather.

The response from FGD2 P5 revealed:

Indeed, climate change disrupts agro-pastoral livelihoods as there is barely enough harvest from the fields during a drought “palla” (FGD2 P5. Personal Interview, May 2024).

FGD3 P5 also responded:

When there is a drought, the water taps dry out, and the community is forced to use water from the river and wells (FGD3 P5. Personal Interview, May 2024).

In addition, participants illustrated that drought degrades the quality of wool and mohair, causes livestock deaths and deterioration of pasturelands. This illustrates that climate change has always been detrimental to agro-pastoral livelihoods. The position of P4 was that:

Lately, climate change impacts negatively on agro-pastoral livelihoods; it particularly affects crop yields. The past harvest periods were during the time when food from the last fall was still available. However, there were years when there was no harvest because of climate change, livestock either starved or died as a result of hunger (P4. Personal Interview, May 2024).

The FGD1 P4 showed the diverse effects of climate change with emphasis that:

Sometimes climate change struck when sheep and goats had lambs. Sometimes the lambs would even die, likely due to snow and inadequate shelter (FGD1 P4. Personal Interview, May 2024).

Research findings reveal that climatic changes challenge the livelihoods of the agro-pastoralists before the implementation of the Sebapala IWM project. Some of the agro-pastoralists faced difficulties as a result of drought. The local community experienced declining crop harvests as a result of climate change. From the study results, farmers harvest sorghum earlier before it dries as wild birds feed on it as a result of climate change; the birds and wild animals leave the mountains and go to the villages to feed. The participants emphasized that climate change had not always disrupted agro-pastoral livelihoods, but recent shifts in weather patterns and increased frequency of extreme events have significantly impacted their traditional practices and economic stability. Kongnso et al. (2021) who affirm that the livelihoods of the agro-pastoralists depend on climatic conditions to produce sustainable livelihoods support this comment.

In addition, Fre (2018) opined that vulnerability of the agro-pastoral livelihoods is a result of the changing seasons. The agro-pastoralist literature shows that vulnerability instills farmers with skills and activities to cope with pressures that come with climate change. These include transhumance & preferential use of drought tolerant seeds to mitigate the effects of unavailability of grazing land and the shortages of water. Silvestri et al. (2012), Richardson et al. (2022) show that farmers produce livestock as an insurance to the livelihoods sustainable in cases of crop failure. This is as when there are disaster events like drought, desertification or degradation, farmers devise

other means to maintain livelihoods. The arguments of the access model emphasize that climatic disasters increase the vulnerability of livelihoods (Wisner et al., 2003). The ability of the local communities to cope with climate vulnerability is different amongst the poor and the rich as it is amongst the agro-pastoral and non-agro-pastoral farmers. This is the case with the community of the study area. The farmers could afford loans to build housing and to educate their children. This was unlikely for the non-farmers.

5.5.3. Climate Finance Impact on Agro-pastoral Livelihoods

Another objective of this study was to evaluate the impact of climate finance on the livelihoods of agro-pastoralists. The findings highlighted several themes related to this objective, including delayed project implementation, the voluntarism model and the determination of project success. These themes are discussed based on relevant literature arguments.

Climate Finance Mobilisation and Distribution for the Sebapala IWM Project

The Sebapala IWM project is funded by three main sources: the Global Environmental Facility (GEF), the United Nations Development Programme (UNDP), and the Government of Lesotho (GoL). The GoL contributes in kind by providing human resources through the Ministry of Forestry, Range and Soil Conservation, in collaboration with other ministries such as Agriculture, Public Works, Gender, Finance, and Development Planning. These ministries attach personnel to the project to achieve specific outcomes, and the GoL also provides rent-free headquarters for the project, highlighting its support.

The majority of the climate finance for the Sebapala IWM project comes from UNDP and GEF. These funds are allocated to various project activities rather than being directly distributed to the Tosing Community. The activities include workshops, conferences, travel, community action plans, and funding for community projects. Despite the project's emphasis on voluntary participation, it also provides

agricultural tools for use at the project site and in household gardens, although the latter is underutilized. Additionally, the project has funded beekeeping training for the community.

To raise climate service awareness among agro-pastoralists, the project has organized travel tours to demonstrate the impacts of climate change firsthand. When the project management cannot find the necessary expertise within local ministries, they outsource consultants. Currently, one consultant focuses on gender issues, while another addresses project grievances that could hinder its success.

5.5.3.1. Delayed Project Implementation

The participants argued that the project experienced significant delays in its initiation. The study results indicate that this delay was primarily due to the project funds not being in the possession of the Government of Lesotho (GOL). The literature suggests that regional banks rather than national banks typically hold most climate finances, a process which delays implementation as the release of such funds often encounters bureaucratic red tape. Field findings revealed that no training had been conducted on rangeland rehabilitation.

Additionally, the delay in fund disbursement not only hindered the timely start of the project but also affected the overall morale and engagement of the local communities. The lack of immediate access to funds meant that essential preparatory activities, such as community consultations and capacity-building workshops, could not be conducted as planned. This gap in early-stage activities further exacerbated the challenges faced by the project, leading to a loss of momentum and trust among stakeholders. Moreover, the absence of training on rangeland rehabilitation highlights a critical oversight in the project's implementation strategy, underscoring the need for comprehensive planning and timely execution to achieve the desired outcomes.

P1 asserts:

Talking about the impact, the project was delayed to be implemented due to funding. The only evident benefits we currently are aware of, is the rehabilitation of rangelands into a productive stage due to the delay (P1. Personal Interview, May 2024).

The participants accused the invisibility of the project to the absence of objectives being put in action when excluding that of extension officers.

According to the study, participants associated lack of visibility of the project impact to the idea that its implementation was delayed. The emphasis was that the delay was probably one of the reasons that a large population of the agro-pastoralists had not realized their livelihoods through the project. The participants affirmed that even though the project was still in its infancy, it was intended to bring sustainability. The observation by Chaudhury (2020) is that climate finance projects integrate many actors. This may link to the delays as the stakeholders involved in the project take time to accept decisions on the climate initiatives to be undertaken. The literature highlights the fact that the distribution of climate finance to the vulnerable nations is uneven and uncertain (Khan & Roberts, 2013). This can affect project activities, especially when funds are not readily available. Participants opined that the delay in project implementation was likely to occur because funds were initially not in the possession of the government of Lesotho. This statement aligns with Oculi & Stephenson (2018) & Chaudhury (2020) who state that most projects are used for political wrangling. The projects that are used for political purposes may lead to delays in the implementation of objectives.

5.5.3.2. Voluntarism Model

The findings revealed that the community from the project was based on people who volunteered to participate in it. According to the study findings, the community was yet to benefit from improved livelihood because of the project implementation, though the data highlights that some of the project initiatives were still in incubation. Some of the projects in the pipeline included community capacity building on bee-keeping and orchards management as part of improving their livelihoods. *FGD3 P4* emphasised:

The project focuses on developing pastures and rangelands for grazing, as well as enhancing livelihoods by collecting and transferring water from watersheds to each household. Currently, the project is in its infancy, with some objectives, such as household water harvesting, still in the planning stages and not yet implemented (FGD3 P4. Personal Interview, May 2024).

Findings from the field emphasize on the voluntary aspects of participation. P6 supported this by stating:

The project has improved the adaptation of the agro-pastoralists to climate change through the provision of capacity building. It raises the awareness amongst the grazing associations on management of the rangelands. When the project was first introduced, the associations within the community were dysfunctional so there is a change (P6. Personal Interview, May 2024).

Most community members who engaged in the project voluntarily received packages as a form of reward based on the criterion of participation.

The findings indicate that the project influenced the community to engage in adaptation initiatives which include the clearing of the land and harvesting in the watersheds on a voluntary model. The research findings show that the community did not receive any form of payment as an incentive for taking part in the project. This model of intervention did not resonate well with the local community because some projects that preceded it earned them money. According to the literature, climate finance impacts are sometimes taken out of proportion as the beneficiaries have high expectations from the interventions (Lipper et al., 2021). In the case of Tosing community agro-pastoralists, the project served as an eye-opener, making the community aware of the potential factors that could disrupt their livelihoods. Participants expressed their appreciation of the project in enlightening them about the fact that removing the invasive species would improve the quality and market value of wool and mohair. The initiative introduced by the Sebapala IWM project was considered effective, as the improved production of wool and mohair is expected to yield significant returns for farmers, whether they sell through formal channels like cheques or informal brokers.

In addition, these arguments are relative to Pellings typology framework, which argues that adaptation strategies rely on location, degree of collaboration and the origin measures. The participants mentioned that prior to the project part of the community was taken to places where projects similar to the Sebapala IWM had changed livelihoods. This exposure made participants believe that their community would also strive for sustainable livelihoods in the future. Though a greater part of the agro-pastoralists were optimistic of the project

there were participants that had lack of trust in the project to improve their livelihoods probably because of unemployment, poverty and expecting of quick returns in projects that came prior.

Furthermore, effective land and water management practices could effect change in the agro-pastoral livelihoods. Participants highlight that collaboration with the department of forestry helped them to maintain their livelihoods amidst climatic shocks.

5.5.3.3. Determination Project Success

The study findings revealed that though the project has not implemented most of the plans, participants were optimistic that the project will bring change. The local chiefs highlighted that the project was with no challenges. The youth participants emphasized that the project brought climate adaptation initiatives such as the subsidized transportation of fertilizers and drought-tolerant seeds. These interventions promised good yields but unpredictable drought disrupted production in the last fall. The impact of the subsidized fertilizers and seeds arrived on time and cultivation was done on time; it was the unpredictable rains and long sunny days that disrupted adequate yields. FGD1 P4 emphasised:

Considering that the fertilizers and seeds arrived in time, cultivation was also done in time. I am confident that these initiatives were successful and impacted positively on our livelihood (FGD1 P4. Personal Interview, May 2024).

In contrast, P1 highlighted:

When it comes to our livelihoods, the project has not yet brought any development. It has only brought closer the services of the extension officers to instill knowledge to the community about crop production and rangeland management. (P1. Personal interview, May 2024).

Besides all the criticisms from the participants, there were positive contributions that the project was making in the catchment area of Tosing. The findings illustrate that the project provides social protection with cash surplus to the vulnerable. FGD 4 P5 stated:

The project distributes social protection in the form of cash surplus to the vulnerable groups for a period of three months. (FGD 4 P5. Personal Interview, May 2024)

In the focus group discussion, the participants asserted:

The project has assisted in developing the livelihoods of the vulnerable. It has given me 1200 maloti for three months (FGD2 P1. Personal Interview, May 2024).

5.5.4. Diverse Participation of Agro-pastoral Farmers in the Climate Finance Project

The purpose of this section is to explore the various forms of participation by agro-pastoral farmers in the climate finance project. The section is structured into sub-sections that specifically address diversity in participation and gender alignment. Additionally, this study engages in a thorough discussion of the sub-themes, drawing upon the relevant arguments from the existing literature.

5.5.4.1. Diversity

The study findings establish that the project encourages diverse stakeholder participation. It requires the participation of all individuals from the local community as well as the national administrative structures. However, this does not include the elderly and the disabled from the local communities. The observations contradict these statements, as evidenced by the villages of Matšela-Ha-Beli, Ha Liphapang and Ha France where the elderly and the disabled participated in the project. This was affirmed by FGD2 P4 who said:

The entire community takes part in the project wherein all age groups and people of different caliber are included (FGD2 P4. Personal Interview, May 2024).

This was supported by P4 who stated that:

All the stakeholders participate in the project, from youth, to the disabled and everyone else. This is done in different project activities such as the protection of the watersheds and wetlands, inland terracing and clearing of the pastures and rangelands of the invasive plant species (P4. Personal Interview, May 2024).

Although the study shows that there was diversity in the project activities participation, participants highlight that women are a greater part of the members of the community who participate in the project activities. P4 reiterated:

The project aligns with issues of gender such that about 70 per cent of the community are women because men are always unavailable and are preoccupied with other activities (P4. Personal Interview, May 2024).

All community members participate in the project. We all collect the shrubs to clean the grazing land. We are even taught to harvest grass to prevent erosion (P6. Personal Interview, May 2024).

This was echoed by P6 who stated:

The project consists of stakeholders from the government of Lesotho departments of water, gender and local government and chieftainship. Some of the stakeholders are from the district level including Head Chief of Quthing, departments of forestry, water, gender and environment (P6. Personal Interview, May 2024).

The research findings indicate that participation in the Seapala IWM project has taken cognizance of diversity in including different stakeholders. They disclose the enormous participation of the agro-pastoralists in the Seapala sub-catchment project. This affirmation highlights that participation came from the national and local stakeholders. The literature presents that participation of farmers in projects enhances empowerment of the local community (Gibson & Woolcock, 2008). In the case of the Seapala IWM project, the local community has been empowered with bee keeping and grass re-seeding skills to diversify livelihoods. Some community members, mainly those who served as the project committee members and who spearheaded project activities and decision making, have also been empowered with leadership skills.

Plate 8: The Sebapala IWM Project took the agro-pastoralist to a bee keeping training



Source: Wenzeni 2024

5.5.4.2. Gender Alignment

In this sub-section, we explore the participation of agro-pastoralists in the Sebapala IWM project from a gender perspective. The findings reveal the following insights.

The participants indicated that the project aligns with gender issues. This is how P6 responded:

All Global Environmental Facility (GEF) projects align with issues of gender and promote gender justice. There is a consultant employed by the project to address gender issues (P6. Personal Interview, May 2024).

From the results, the project also aimed at aligning the project *with gender mainstreaming*. P9 indicates:

Participation in the project based on gender parity. Furthermore, to ensure gender mainstreaming in the project, the project integrates gender by-laws (P9. Personal Interview, May 2024).

The participants also highlighted:

Despite having more women participation, men rarely participate as they are attached with other entitlements. However, the project aligns with the issues of gender. I still think the voluntary nature of the project is the reason that men are few as there is no money. Men only go for something that will earn them incentive on work done. The imbalances in participation perpetuate the burden of domestic work. The burden on women is excessive as women participate in the project, then go home to struggle with the domestic work and maintaining the household (P9. Personal Interview, May 2024).

P1 further confirms that participation in the project is not equal and commented:

Males partly participate in the project and seldom show up at the project site as a result of having other duties. At times, men are at the cattle posts to search for lost and stolen livestock, and sometimes they take food supplies to the cattle posts (P1. Personal Interview, May 2024).

P2 echoed the sentiment:

With regard to participation, the number of women is higher than that of men because men take sheep and goats for shearing and look for lost livestock. These activities preoccupy them more than any other duty. (P2. Personal Interview, May 2024).

From the findings of this study, participation of the local community in the Sebapala IWM project takes gender parity as a central issue in the achievement of its activities. Both male and female community members engage in the project, however, the number of females is greater than that of males. This gender disparity is because unlike males, females are always available at home and this allows them to participate more readily. Participants asserted that gender participation was not equal; women were more burdened as a result of the project. Despite the inadequacy of the project incentives, women continued to work in the project while still struggling to provide for

the households. These findings resonate with Aref (2011) who asserts that the participation of farmers in climate finance projects gives a sense of entitlement.

The male agro-pastoralists who took part in this project were interested in the rehabilitation of pastures and rangelands. The rest of the male participants emphasized that the project was a waste of time. They lost interest in it. The findings contradict those of a study conducted in Kenya that presented a weak participation of farmers in projects (Okumu et al., 2023). The observation from the present study is that most of the women took part in the project despite the absence of any incentives. The benefit which women were able to draw from the project was the establishment of cooperatives which were exclusive to women. This is in spite of the literature which argues that women receive limited information on production activities and climate finance interventions (Odhong et al., 2019).

5.5.5. Sebapala IWM Project Challenges

This section presents the livelihood challenges associated with the Sebapala IWM project. The subsequent discussion outlines the key findings.

5.5.5.1. Lack of Jobs

According to the findings of this study, the Sebapala sub-catchment faces the main challenge of lack of jobs. Participants confirm that in low-paying jobs, individuals take up other means as forms of livelihood. This was evident from the agro-pastoralists who took up jobs such as the construction of cattle kraals, chicken shelter as well as fetching water. FGD2 P4 indicated:

I make a living through selling firewood and brewing traditional beer these activities help to achieve climate resilience. However, these livelihood activities do not earn enough money to send the children to school and to afford school necessities (FGD2 P4. Personal Interview, May 2024).

The participants stated that given their livelihood background, when the Sebapala IWM project was initiated, they could not join the grazing associations under the project. Because the project targeted members of these associations, they became disadvantaged and could not maintain their livelihoods. The data show that most participants participate in the project on empty stomachs and without

bathing so that they could earn their living through the few packages that the project sometimes provides. While the project took pride in the food packages, many agro-pastoralists expressed dissatisfaction, arguing that the initiative was a one-time effort that caused division among locals and did not significantly improve livelihoods. P1 emphasised this saying:

Sometimes, due to poverty we would go to the project site to remove the invasive plant species and to rehabilitate the watersheds and breed grass on empty stomachs (P1. Personal Interview, May 2024).

FGD1 P1 affirms that:

Though I came here, I cannot even concentrate. All I can ever think about is what I am going to eat when I get home. The option I have is to go around begging for something to eat because the project does not offer any mealie meal for anyone to eat at home (FGD1 P1. Personal Interview, May 2024)

When asked whether the youth sustained their livelihoods through the project FGD1 P5 highlighted that:

The youth do not make a living out of this project. Most of them stay with their parents and are taken care of by their parents. The project has not yet brought the youth-led initiatives to sustain livelihoods through cooperative activities as it had promised. (FGD1 P5. Personal Interview, May 2024)

Further, the study attests that the project is in the process of training youth from the Quthing district to become field supervisors. P7 affirmed that:

It was in the fall of last week that we had training with youth supervisors that have been employed by the project to lead youth initiatives at the community level (P7. Personal Interview, May 2024).

P6 reiterated:

The project has not yet let youth into any direction to make and to sustain livelihoods. What it has done is to establish herders associations as most herders are youth. The project has only employed some youth as supervisors on a one year contract (P6. Personal Interview, May 2024).

5.5.5.2. Stock Theft

According to the study findings, the livelihoods of the agro-pastoralists were challenged by rampant stock theft. The participants expressed that though they made livelihoods through livestock production among other livelihood activities, stock theft has led to the vulnerability of their livelihoods. A large proportion of the males even failed to engage effectively with the Seapala sub-catchment project because sometimes males have to go out to look for lost or stolen livestock. This is one of the reasons why there is a lack of male participation in the project. Some have to go to search for lost cattle while others are at the cattle posts manning animals. The observation is that as the villages in Tsatsane are located closer to the border with the Republic of South Africa (RSA), stock theft is quite rampant in the area. The participants disclosed that due to stock theft they have had to establish alliances with the farmers in Matatiele, South Africa, to curb stock theft and to capture those who engage in stealing livestock. During the data collection exercise, there were days when the researcher could not have access to the male participants in the study as they had gone to attend such meetings.

5.5.5.3. Challenges Brought by the Pilot Project

Results findings of the study revealed that the project was piloted in the area and brought challenges. P1 highlighted:

My main concern is that the project is implemented in a parallel narrative for we are still at the learning stage. (P1. Personal Interview, May 2024).

The study finds that the project faced difficulties because it was a pilot project. Participants emphasised that the project was not able to generate or enhance livelihood activities. In addition, the view was that the Seapala IWM project advocated for raising awareness to

gender-related issues, however, the consultants were only brought into the project later and this affected the implementation of the gender action plan timeously.

5.5.5.4. Livelihoods Disruption

Another challenge that was identified by the participants is that the project disturbed the community livelihood routine. Agro-pastoralists live on crop and livestock production but they devote only a few hours removing invasive grass species and rehabilitate the watersheds. Sometimes the community falls short of its livelihood improvement activities. Other challenges that disturb livelihoods in the Seapala sub-catchment are the wild animals that feed on livestock and the crops in the fields that are far from their homes. Other Participants emphasised that in order to improve their livelihood activities they have to employ people to expel the birds from feeding on the sorghum. The Chiefs also explained that the monkeys feed on the maize produce. This affects the community livelihoods.

5.6. Summary

Based on the findings and discussions, agro-pastoral livelihoods are significantly disrupted by disasters and pandemics. This signifies the need for transformative interventions to enhance resilience and living conditions of the agro-pastoralists through green growth. Vulnerabilities within the Tsatsane village in Tosing community profound, while the project has while the project has contributed to some positive change, its impact so far has been limited. Climate finance roadmaps often hinder socio-economic development, and slow project implementation further restricts the visibility of successes and community entitlement. Additionally, there is a need for more inclusive and participatory approaches to ensure that interventions are sustainable and equitable.

Chapter Six: Conclusion and Recommendations

6.1. Introduction

The main objective of the study was to determine how climate finance impacts the livelihoods of the agro-pastoralists in the Sebapala sub-catchment within the Tosing community council, in the Tsatsane village. Specifically, it identified existing livelihoods in the community before the introduction of the project and determined how the climate finance project impacted the livelihoods of the agro-pastoralists. The study further assessed the participation of the agro-pastoral farmers in this project. The chapter is organized into four sections. The first is the introduction, the second is the conclusion, the third is the recommendations, and the last section presents areas for further research as identified during this study.

6.2. Conclusions

The primary objective of the climate finance projects is to enhance the standard of living for vulnerable communities while improving climate resilience. These projects aim to empower those vulnerable to climate change and variability through socio-economic, political and environmental factors. The climate finance initiatives assist the developing countries in both mitigating and adapting to climate challenges. By addressing climate vulnerabilities, these projects contribute to the revision of livelihoods among the vulnerable populations. The Sebapala IWM project focuses on rehabilitating the degraded land and water resources to promote sustainable livelihoods, especially for the agro-pastoralists.

The study concludes that before the implementation of the Sebapala IWM project, the existing livelihoods were dominated by crop and livestock production. Based on the findings of this research study, the livelihoods of agro-pastoral farmers have been declining. This is as a result of climate change, the covid-19 pandemic and lack of access to services. The conclusion is that the agro-pastoral farmers

have had to tolerate dynamic issues to maintain livelihoods. For example, the agro-pastoral farmers practise the transhumance relative to the changing seasons. Participants who had migrated from the Sebapala sub-catchment to places such as Mount Moorosi and Quthing which have access to the services either sold livestock or left them behind. This challenged livelihood, particularly the management of crops and livestock which farmers had to monitor. The outcry is that keeping livestock in the care of non-owners leads to their demise, to leaving fields uncultivated because they are left in the care of the elderly, while young go to look for employment in the cities.

The study further concludes that agriculture based production activities provide livelihoods to the community. The agro-pastoralists take pride in producing food for their families. They produce peas, maize, tomatoes and potatoes. However, lack of markets has led the community to produce only for subsistence purposes. The study finds that agro-pastoralists have alternative livelihood activities that act as insurance in case agriculture fails. These activities include engagement in non-farm activities and the harvesting of natural resources for cash. The local community members sell medicinal herbs such as “*khoara*” to maintain livelihoods. Inadequate regulation of harvesting natural resources may lead to their extinction. For instance, the observation is that some of the locals harvest rosehip through breaking the branches which may decrease its future production.

Another conclusion drawn from the study is that the livelihoods of the agro-pastoralists are intricately linked with informal entrepreneurship. Many households operate traditional beer cafes, which have contributed to the survival and development of the agro-pastoralists. The income generated from this activity has enabled the provision of education to their children, who are now in position to improve their home situations. The villages in Tsatsane, traditional beer brewing serves as a catalyst for economic growth. However, this livelihood activity also has adverse effects; it encourages lawlessness, crime and often incites conflicts. In addition, livelihood activities are further enhanced through handicrafts, with some individuals sewing school uniforms, dresses and repairing men’s torn trousers.

Another conclusion is that ecotourism is a significant livelihood activity in the area. The community has a diversity of languages and takes pride in its culture. In addition, it controls the majority of the tourism initiatives, including the management of the bush-men

paintings, fly fishing, waterfall views and pony trekking. The proceeds from these activities are used in the development of livelihoods for the local community. The tourist visits into the community enhance livelihoods of the local community, as tourists pay for accommodation and traditional food experiences. However, the benefits of the ecotourism industry are unevenly distributed, primarily favouring a few individuals, such as the homestay owners who receive something for renting out their house and farmers who rent out their horses for carriage and transportation. This selective benefit distribution results in a diminished sense of entitlement and ownership over the natural resources that attract tourists. The caves with the bush-men paintings are not fenced. This is why other farmers use them as livestock shelter and mined the surface stones for building housing.

The study concludes that livelihoods that depend on the environment are threatened by climate change events. Previously, the community experienced abundant production and no food shortages. This usually occurred when there was no drought, and adequate wool and mohair products as well as livestock sustained people's livelihoods. However, during drought disaster water shortages force the community to rely on rivers and wells, where they share drinking water with animals. This water is often contaminated and unclean and its shortage prevents irrigation. The pastures and rangelands barely feed the entire livestock population, prompting farmers to move their herds to the cattle posts to minimize their deaths and quality. Winter crop production is also constrained during these incidents. These problems challenge the importance of the Sebapala IWM Project, which aims to harvest water from the watersheds and to distribute it to the households in the villages.

Furthermore, the study concludes that the Sebapala IWM project has partially impacted the livelihoods of the agro-pastoralists. This is specifically because the project is at the pilot and its implementation is delayed. It does not meet its objectives yet. There are constraints and uncertainties in funds distribution. There was a time when project funds were not with the government of Lesotho but that of a private entity. This trend is relative to most climate finance interventions as funds are held with the regional banks and that hinders access and effective distribution as well as the management of funds. The delay in implementation has resulted in the community clearing the invasive plant species on the rangelands with bare hands because the tools are not provided. In addition, the community has been

doing all these activities without training. The observation is that in places where the community has worked there are stubborn plant species that regrow despite the initiatives of the community through the project.

The study further concludes that the Seapala IWM climate finance project is an environmental development intervention. The local community initiated the rehabilitation of the pastures and other interventions such as the youth and women-led agri-businesses are yet to be fulfilled. The project has capacitated the community with skills in beekeeping and orchard management. Notably, this climate finance project has raised the awareness of the local community on the management of rangelands through rotational grazing and other means. Though the project has distributed food packages to those who volunteer in the fulfillment of its objectives, it has not necessarily developed agro-pastoral livelihoods. The subsidized transportation of fertilizers and improved seeds to the area had promises of good yields but due to drought, the production quality of crops declined. The benefits of the project are in the fact that extension officers have taught the community about proper seeds for the soil in the Seapala sub-catchment. This project has raised awareness on issues that challenge livelihoods so that the community can respond to the pressures accordingly.

The final conclusion is that participation in the project is prerogative of all the farmers, both male and female. However, lack of jobs sometimes forces the agro-pastoralists into working on an empty stomach. This disrupts livelihoods because the project has only improved livelihoods of the agro-pastoralists in part not effectively denoting a change. Amongst the difficulties that the farmers encounter for their participation in the project is lack of monetary rewards as motivation for fulfilling the project objectives. The outcry is that the project is a disgrace as farmers at first used hands, and that the protective equipment that has been issued is selective. It does not provide farmers with, among other things, boots resulting in some losing their shoes to the project. Furthermore, the project perpetuates the psychological problems of the community as those who are not part of the project are exposed to poverty and end up begging, stealing livestock and selling items meant for their social protection in a barter system. These disparities align to the arguments of the access model where the poor members of the community perish due to pressures while the rich find means to survive. Due to these pressures, the poor are subjected to vulnerability while the rich may have alternative means for survival. Furthermore, the project has not yet established the gender action plan in addressing issues of gender yet this is one of its key objectives.

6.3. Recommendations

The livelihood activities in the community have the potential to improve the household well-being. However, more needs to be done to achieve this objective. Ecotourism initiatives should be revived to enable the entire community to benefit and not only just a few who use the facilities that the tourists go to explore. The community should adopt ecotourism initiatives that allow it to manage them and tourist attractions. This would minimize the vulnerable members of the community from experiencing poverty.

The model of compensating the local community for participating in the Sebapala IWM project should be reconsidered. The current voluntary method of participation does not help the agro-pastoralists to immediately change their livelihoods. Those in the management of the project should motivate the community through monetary incentives so that they can meet their basic needs. This would make the community feel entitled to the climate finance project and help fulfill its objectives.

The community needs infrastructure development, mainly a road and a bridge to enable access to the services during the rainy seasons. When the bridge collapsed people carried the sick and the dead on sticks. It takes the community more than three hours on foot to get to the nearest health center. Infrastructure development can further stop emigration out of the community in search of access to health and educational services, among others.

The marketing of this community ecotourism activities needs to be improved. The botanical gardens can preserve the exotic plants for sustainable livelihood development. Community-led environmental preservation initiatives need to be put in place and marketed to allow the world to gather knowledge on diverse species in the Sebapala sub-catchment and available tourist attractions.

Though the project has not been fully implemented, it can improve the livelihoods of the agro-pastoralists; it should adhere to the needs of the community. The provision of seeds and fertilizer transportation subsidies was a great initiative. The Sebapala IWM project should extend this intervention. The project should serve as an assisting board in the sourcing of markets to enable the local community members to sell their products.

The cutting of shrubs can generate energy and the community should be assisted to generate charcoal out of this. This would not only improve their income but would also improve livelihoods of the agro-pastoral community.

Proper protective equipment is an essential need in clearing the pastures and rangelands to avoid snake bites and other harmful effects that occur out of working with bare hands. The community also needs supervision and skills in order to undertake project activities.

6.4. Areas of Further Research

This study has identified the gaps that can be filled through further research on the impact of stock theft on livelihoods. There is also a need to study how cultural diversity in the Sebapala sub-catchment affects the livelihoods of the agro-pastoralists. The study also located an area for further research on how the burden of gender weighs on women and its implications on livelihoods. Access to services is another issue that needs thorough investigation on how it affects the livelihoods of the community. Another area that needs investigation is the contribution of the preservation of the natural plant species on livelihoods.

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Appendices

Appendix 1: Consent Letter

Introduction

Good morning/afternoon, my name is Lesetla Moko. I am a postgraduate student from the National University of Lesotho in the Faculty of Humanities, in the Department of Development Studies. This study is undertaken to fulfill my academic requirements there off. The reason of my being here is to study the climate finance project in the Sebapala sub-catchment. The aim of the study is to determine the impact of this project on the agro-pastoral livelihoods in the region of Tosing. The study intends to understand the efficiency and effectiveness of the project towards development of agro-pastoral livelihoods. You have been selected to participate in the study, which includes questions on topics regarding your experiences with the project. Please understand that your participation in this study is voluntary and that no harm will be done on you should you decide not to participate. The study is completely academic please do not hope for any form of incentive for participation. Your answers will be kept confidential, as no information that identifies you will be shared with anyone. The study will take a period of no more than 15-35 minutes. You are free to exit the study anytime should you feel uncomfortable. You are also free to ask questions anytime along the study if you do not understand the line of questioning.

By giving consent, you are agreeing that you have understood the information about the study and that you voluntarily agree to take part in it.

I agree to participate in this study.

Yes		No	
-----	--	----	--

Appendix 2: Interview Schedule for Participants *(for key informant interviews and focus group discussions)*

Section A: Background Information

1. Village:

.....

2. Community Council:

.....

3. Occupation:

.....

4. Institution:

.....

5. Sex:

Male [] Female []

6. Age:

18-24 [] 25-35 [] 36-45 [] 46-55 [] 56-65 [] 66+ []

7. Level of Education:

No Education [] Primary [] Secondary [] High School [] Tertiary []

Section B: Livelihoods Situation before Climate Finance Implementation

1. What were the livelihood activities within the agro-pastoral community before the project?
2. How effective were the activities in (1) to achieving sustainable livelihoods?
3. What type of traditional practices did the agro-pastoral community use to sustain livelihoods?
4. How effective were the traditional practices in (3) towards attaining climate resilience?
5. Did climate change disrupt agro-pastoral livelihoods? (Yes/No)?

- (If yes explain further)

6. What other stressors disrupted livelihoods in this community before the project?

Section C: Climate Finance Impact on Agro-Pastoral Livelihoods

1. What adaptation and mitigation actions through this project were put forth to enhance agro-pastoral livelihoods?
2. Did the interventions in (2) help with climate resilience? (Yes/No)?

- (explain your choice)

3. What is the contribution of the climate finance project to the community?
4. Has climate finance project improved agro-pastoralists' adaptation to climate change? (Yes/No)? - *(explain your choice)*
5. How has implementation of the project affected women's position in terms of participation and improving their livelihoods?
6. Has climate finance improved the livelihoods of the agro-pastoral community? (Yes/No)?

- *(explain your choice)*
7. What are some of the challenges the agro-pastoral community encounters because of the project?

Section D: Participation of Agro-pastoral Farmers in Climate Finance Projects

1. Please tell me whether there is participation of all the stakeholders in the project. *(Probe for the roles played by each, and inclusion)*
2. Does participation in the project align with gender mainstreaming? *is there equal access for all genders)*
3. Do the youth participate in the project to sustain livelihoods?
4. What criterion was used to select beneficiaries to the project?

- Is it fair? *(Probe for clarity)*
5. To your knowledge, do the parties work as a collective to fulfill the objectives of the climate finance project? *(Probe for clarity)*

Appendix 3: Interview Schedule for Respondents (*questionnaires*)

Section A: Background Information

1. Village:

.....

2. Community Council:

.....

3. Occupation:

.....

4. Institution:

.....

5. Sex:

Male [] Female []

6. Age:

18-24 [] 25-35 [] 36-45 [] 46-55 [] 56-65 [] 66+ []

7. Level of Education:

No Education [] Primary [] Secondary [] High School [] Tertiary []

SECTION B: Livelihoods Situation before Climate Finance Implementation

1. Please tick the appropriate livelihood activities you undertook before the project.

Activity	Tick
Artisanal work	
Domestic work	
Natural Resource mining	
Non-farm activity	
On-farm activity	
Other (specify)	

2. How effective were these activities towards achieving sustainable livelihoods? *(Tick the relevant box)*

Effectiveness	Tick
Effective	
Not effective	

3. What type of traditional practices did you adopt to sustain livelihoods? *(Tick the relevant box)*

Practice	Tick
Destocking	
Drought tolerant seeds and breeds (<i>Indigenous</i>)	
Mixed production (<i>crop and livestock production</i>)	
Rotational grazing (<i>seasonal</i>)	
Other (specify)	

4. From experience, did the practices in (3) lead to climate resilience? (Yes/No)?

Yes		No	
------------	--	-----------	--

5. Did climate change disrupt agro-pastoral livelihoods? (Yes/No)?

Yes		No	
------------	--	-----------	--

6. Were there other stressors that disrupted agro-pastoral livelihoods before the project? (Yes/No)?

-If yes, please tick the appropriate boxes.

Stressors	Tick
Conflict	
Education	

Health	
Infrastructure	
Market dynamics	
Other (specify)	

SECTION C: Climate Finance Impact on Agro-Pastoral Livelihoods

1. What kind of adaptation and mitigation interventions did the project enforce to enhance agro-pastoral livelihoods? *(Tick all the relevant boxes)*

Intervention	Tick
Crops and livestock donation	
Home gardens	
Land and water rehabilitation	
Other (specify)	

2. Did the interventions in (1) help with climate resilience? (Yes/No)?

Yes		No	
-----	--	----	--

3. Is there contribution of the climate finance project to the community? (Yes/No) *(Tick the relevant box)*

Contribution to the community	Tick
Yes	
No	

4. Has the climate finance project improved adaptation of the agro-pastoralists to climate change? (Yes/No)?

Yes		No	
------------	--	-----------	--

5. How has implementation of the project affected women's position in terms of participation and livelihoods? (*Tick the appropriate box*)

Effect	Tick
Negative	
Positive	
Stagnant	

6. Has climate finance improved the livelihoods of the agro-pastoral community? (Yes/No)?

Improvement in Livelihoods	Tick
Yes	
No	

7. Are there challenges that the agro-pastoral community experiences because of the project? (Yes/No)?

- If yes, please pick the appropriate challenges from the following.

Challenges	
Conflict	
Corruption	
Food insecurity	
Other (<i>specify</i>)	

SECTION D: Participation of Agro-pastoral Farmers in Climate Finance Projects

1. Please tell me whether there is participation of all the stakeholders in the project. (Yes/No)

- If yes, is the participation inclusive?

Stakeholders participation	Tick
Inclusive	
Not inclusive	
Not sure	

2. Does participation of the agro-pastoral farmers align with gender mainstreaming? (*Tick the appropriate box*)

Participation align gender mainstreaming	
---	--

Agree	
Disagree	
Not sure	

3. Does participation of the youth in the project help them to sustain livelihoods?

Youth Participation and sustainable livelihoods	
Yes	
No	

4. Was there a criterion that was used to select beneficiaries to the project?

Criterion for the beneficiaries	
Yes	
No	

-If yes, was this fair? (*please tick the appropriate box*)

Fairness	Tick
Fair	
Not fair	

5. To your knowledge, do the parties work as a collective to fulfill objectives of the climate finance project?

Yes		No	
------------	--	-----------	--

-If yes, *(please tick what could be the reason(s))*

Reason	Tick
Shared responsibility	
Mobilize funds	
Risk mitigation	
Innovation	
Policy alignment	
Other (specify)	

Appendix 4: Data Collection Approval Letter

The National University of Lesotho

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P.O. Roma 180
Lesotho
Africa

Department of Development Studies

April 15, 2024

Dear Sir/Madam

R: Request to assist our Master's Students doing Research Project

Lesetla Moko (201802262) is one of our students conducting a study as partial fulfilment for the requirement of his Master's degree in Development studies. His research topic is '**The contribution of climate finance on livelihoods of agro-pastoralists in the Seapala sub-catchment**'. It is expected that the outcome of the research will inform policy to improve livelihoods of the participants leading to improved social and economic relations.

I therefore request you to assist the students in all possible ways.

Thank you in advance.

Mokone Musi (PhD)
Head of the Department
Cell: 58793985
mokone.musi@gmail.com

Appendix 5: Study Time Frame

Profile of the Study Time Frame

Activity	Duration	Completion
1. Develop proposal and review the literature	2 months	03 November 2023
2. Submit to evaluation committee	2 days	5 November 2023
3. Revise Proposal	2 days	7 November 2023
4. Ethics Committee submission	2 days	9 November 2023
5. Preliminary study	1 week	18 November 2023
6. Refine methodology	1 week	25 November 2023
7. Write chapter on literature review	3 weeks	09 December 2023

8. Write the chapter on research methodology	Concurrent within previous 2 activities	09 December 2023
9. Recruit and select sample	2 weeks	23 December 2023
10. Gather data	4 weeks	20 January 2024
11. Code data	1 week	27 January 2024
12. Capture data on computer	3 weeks	17 February 2024
13. Review chapter on methodology	Concurrent with previous 2 activities	17 February 2024
14. Data clearance	1 week	24 February 2024
15. Data analysis and writing of chapter	4 weeks	23 March 2024
16. Writing chapter on discussion and recommendation	3 weeks	13 April 2024

17. Review chapter on data analysis	2 weeks	27 April 2024
18. Review chapter on conclusions and recommendations	2 weeks	11 May 2024
19. Language editing	2 weeks	25 May 2024
20. Technical layout	1 week	1 June 2024
21. Proofreading, duplicating and binding	2 weeks	15 June 2024
22. Submission for examination		30 June 2024