

**CLIMATE FINANCING AND PLANNING NEXUS, A CASE OF
EASTERN PROVINCE.**

By

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(23000372)

A dissertation submitted to University of Zambia in partial fulfilment of the award of
Master of Science degree in Spatial Planning.

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APPROVAL

This dissertation, by Natasha Ndumba, has been approved as partial fulfilment of the requirements for the award of the Master of Science Degree in Spatial Planning by the University of Zambia.

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DECLARATION

I do hereby declare that this is my own work, and that to the best of my Knowledge, except where otherwise acknowledged, the work presented here is entirely my own and has not been submitted for any other degree or qualification at this or any other institution. All sources of information, data, and ideas have been appropriately cited and referenced in accordance with academic standards.

I hereby, submit this dissertation for examination for the Master of Science Degree in Spatial Planning at the University of Zambia.

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ABSTRACT

Climate change poses significant challenges to sustainable development in sub-Saharan Africa, particularly in countries like Zambia that are heavily reliant on natural resources. As Zambia scales up its climate response, Climate finance is a crucial climate change mitigation and adaptation element that can help achieve its development agenda and meet its obligations under the UNFCCC. This study examined the nexus between climate financing and planning in Eastern Province, Zambia, highlighting gaps in aligning climate financing with local strategic planning. A mixed-methods approach was employed, with data collected through key informant interviews and questionnaires from 51 respondents, including planners and policymakers. The study used Census sampling, which involved selecting planner in all local authorities across eastern province. This method was used to ensure accuracy and inclusivity of results because the population size was small. Convenient/purposive sampling was applied for qualitative data collection from key informants. Data analysis involved descriptive analysis for quantitative data and thematic analysis and verbatims for qualitative insights. Findings reveal a limited integration between climate financing options and local planning, suggesting a fragmented approach where climate financing is acknowledged but not systematically embedded within local planning. Limitations are attributed to centralized systems and lack of alignment with national priorities. Other challenges include limited awareness and technical expertise among planners regarding certain multilateral and bilateral funding options, restricting access to climate finance, Institutional barriers, including complex application processes and existing literature, highlights that rigid, top-down financial structures limit local access to climate funds, hindering effective adaptation and mitigation efforts ((Adenle et al., 2017; Dasandara et al., 2023; Funder and Dupuy, 2022; Gombera, 2023; Mungai et al., 2022; Price, 2021b). Strengthening capacity-building initiatives, simplifying financial processes, ensuring policy coherence, and promoting participatory planning at the grassroots level will improve financial accessibility and support sustainable development in eastern and Zambia at large.

Key words: Climate Finance, Climate Financing options, Planning, Nexus, Climate Change

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DEDICATION

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LIST OF ABBREVIATIONS

8NDP	Eighth National Development Plan, 2022 to 2026
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Green House Gases
GRZ	Government of the Republic of Zambia
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
IDP	Integrated Development Plan
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Plan of Action
NCCRS	National Climate Change Response Strategy 2010
NPCC	National Policy on Climate Change
NPE	National Policy on Environment
UNDP	United Nation Development Programme
UNFCC	United Nation Fund for Climate Change
ZCSO	Zambia Central Statistics Office

CHAPTER 1: INTRODUCTION

1.1 Background

Climate change poses a significant threat to sustainable development worldwide, with its impacts being most pronounced in vulnerable regions such as the global south. Countries in the global south, particularly in sub-Saharan Africa, are disproportionately affected by the adverse impacts of climate change, despite contributing minimally to global greenhouse gas emissions. Zambia, for instance, contributes less than 0.02% of global emissions (UNFCCC, 2018), yet faces significant climate-related challenges. These include increased frequency and intensity of droughts, floods, and land degradation events that continue to undermine livelihoods, especially in rural areas highly dependent on natural resources (Arnell et al., 2014). Over the past decade, climate-related shocks have led to socio-economic losses estimated at 3–4% of Zambia’s gross domestic product (GDP) annually (Ministry of Finance, 2021). This has placed considerable strain on the country’s development efforts and exposed the urgency of mobilizing and effectively utilizing climate finance to support both mitigation and adaptation initiatives (Funder and Dupy, 2022). The global recognition of climate finance as a critical tool for climate action was underscored at the 16th Conference of the Parties (COP16) in 2010, where developed nations committed to mobilizing \$100 billion annually by 2020 to support the climate efforts of developing countries. Climate finance, sourced from multilateral and bilateral donors as well as domestic and private-sector avenues, has since played an increasingly central role in driving climate action and economic development. For Zambia, accessing and coordinating climate finance remains a complex undertaking. While the country has made considerable progress in developing policy and institutional frameworks—such as the National Climate Change Response Strategy (NCCRS), the National Policy on Climate Change (NPCC), and the Updated Nationally Determined Contributions (NDCs)—operationalizing these frameworks requires the alignment of financial resources with national and sub-national planning processes. This alignment is especially critical in regions such as Eastern Province, where communities are highly vulnerable due to their dependence on rain-fed agriculture and limited adaptive capacity. The impacts of climate change in this region manifest through prolonged dry spells, erratic rainfall, flash floods,

and soil infertility—all of which severely undermine food security and local economies (Makondo & Thomas, 2020; Phiri, 2023).

Climate finance, therefore, plays an essential role in supporting targeted interventions that build resilience at both national and community levels. However, the effectiveness of these interventions is heavily reliant on robust local planning systems that can absorb and utilize funds efficiently, equitably, and transparently. This underscores the importance of the climate finance and planning nexus—an interdependent relationship where financial resources empower planning processes, and in turn, planning ensures that climate investments are strategically directed and yield sustainable results (Falchetta, 2022). This study, therefore, aims to explore the interface between climate finance and planning in Zambia, with a focus on the Eastern Province. Specifically, it assesses the level of awareness and accessibility of climate finance at the subnational level, evaluates the extent of its integration into planning processes.

1.2 Problem Statement

Despite concerted efforts by the Zambian government to access climate funds, its commitment to addressing climate change through frameworks like the National Adaptation Plan (NAP) and the Nationally Determined Contributions (NDCs), and align the national plans into local plans, a gap exists in understanding how effectively climate financing options are integrated into the broader framework of local planning in Zambia.

Studies indicated that while Zambia has accessed climate funds through climate financing options like the Green Climate Fund (GCF) and Adaptation Fund, public funds and other sources, the allocation and implementation of these funds remain fragmented, often bypassing Local Government structures. Misalignment between donor interventions and government policies, and contradictions between climate change interventions and other development efforts are order of the day (Funder and Dupuy, 2022). This misalignment is evident in the inadequate and sometime absence of climate-focused budgetary allocations within local development plans such as Integrated Development Plans (IDPs) and Local Area Plans (LAPs), leading to inefficiencies in adaptation and mitigation efforts at the grassroots level (Funder And Dupuy 2022; Gombera, 2023). This research therefore seeks to address this gap by establishing the extent to which climate finance is integrated into

local planning frameworks in local authorities in Eastern Province, identifying key barriers, and proposing strategies for better alignment. This research aims to bridge this gap by focusing on district councils responsible for implementing IDPs and LAP

1.3 Aim of research

The aim of this study is to comprehensively explore the integration of climate financing into local planning in eastern province to enhance resilience and sustainable development.

1.4 Research Objectives

- i. To identify climate financing options available in local authorities of Eastern province of Zambia.
- ii. To examine the level of integration of climate financing into planning local authorities in Eastern province of Zambia.
- iii. To establish challenges related to integrating climate financing in planning documents.
- iv. To establish opportunities that climate financing presents in sustainable urban planning

1.5 Research Questions

- i. What are the climate financing options available in local authorities of eastern province of Zambia?
- ii. What are the levels of awareness of the climate financing options among planners in local authorities of eastern province of Zambia?
- iii. How effective are the climate financing options integrated into Planning?
- iv. What challenges exists in integrating climate financing options into Planning?
- v. What opportunities does climate financing present in sustainable urban planning?

1.6 Significance of the Study

The research will potentially inform and guide policymakers, practitioners, and stakeholders on how climate finance can be more effectively leveraged through strategic planning to address the urgent challenges posed by climate change. By highlighting both successes and areas needing improvement, the study seeks to offer actionable insights that can guide future climate finance initiatives and planning efforts, ultimately contributing to more resilient and sustainable communities particularly in vulnerable regions.

1.7 Structure of the dissertation

This dissertation consists of six chapters. Chapter one discusses the introduction or background of the study. It presents the statement of the problem, purpose of the study, study objectives, research questions and significance of the study. Chapter two presents a review of selected literature relevant to the study and its themes. A critique of literature is done in relation to the gaps identified in the studies which needs to be filled by this study. Chapter three presents a description of the study area with regards to the characteristics it has and its importance to this study. Chapter four presents the research methodology of the study. It discusses the research design, targeted population, study sample, research instruments, data collection method, data analysis and ethical issues which the study considered. Chapter five presents findings and discussions of the study arising from the study research questions. Chapter six gives the conclusion and recommendations of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter explores climate financing and its integration into planning at global and local levels. It defines key concepts, examines climate change impacts, and reviews financing options, models, and Zambia's climate finance strategies. The discussion highlights mechanisms for embedding climate finance into national and local plans, with case studies from Malaysia, Ethiopia, and Kenya providing insights. It identifies barriers local authorities face in accessing funds and opportunities for enhancing sustainable development. The chapter concludes by summarizing gaps in literature, focusing on local authority capacity, awareness, and the effectiveness of finance integration into planning, along with relevant theoretical frameworks.

2.2 Explanation of key concepts: Definition of key terms:

‘Climate Financing’- According to United Nations Climate Fund for Climate Change (UNFCCC), Climate Financing refers to local, national or transnational financing—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change.

‘Planning’ -Planning is the systematic process of setting goals, developing strategies, and organizing resources to achieve specific objectives. It involves anticipating future needs, engaging stakeholders, and creating frameworks to guide sustainable urban and local development, ensuring that decisions align with long-term visions.

‘Climate Mainstreaming’ - Climate Mainstreaming integrates climate considerations into broader policy and planning processes to address climate risks and promote sustainable development. It involves embedding climate actions into land use, infrastructure, and urban development plans, making communities resilient to climate impacts.

‘Climate Change’ - Climate Change refers to long-term changes in the state of the climate, identified by shifts in mean or variability of climatic properties over decades or longer. The UNFCCC defines it as changes in climate directly or indirectly caused by human activity, in addition to natural climate variability.

‘Nexus’ - Nexus in climate discussions highlights the interdependence between sectors or systems, emphasizing the need for integrated approaches to address interconnected challenges effectively, particularly in climate policy and planning.

2.3 Global, Regional, and Local Impacts of Climate Change

Climate change presents a profound global threat, driven by rising carbon emissions that have increased global temperatures by 1°C (World bank, 2010). This warming contributes to intensified heatwaves, altered precipitation, and extreme weather events such as floods and droughts. Approximately 1 billion people face water stress, 450 million are at risk of frequent river flooding, and 1.3 million may experience coastal flooding annually, with Asia, Africa, and the Middle East being disproportionately affected (Abbass et al., 2022; Arnell et al., 2014). Agriculture, particularly staple crops like maize, rice, and wheat, is at risk due to reduced yields and increased soil erosion, threatening global food security. Vulnerable populations in the global south, including smallholder farmers, face heightened food insecurity and malnutrition due to limited adaptive capacity (Ndruru and Masjud, 2024). Psychological effects such as anxiety and PTSD are also increasingly observed among climate migrants and other at-risk groups (White et al., 2023). Efforts like the UNFCCC and COP-21 aim to limit warming below 2°C by advancing mitigation, adaptation, and financing mechanisms (Calvin et al., 2023a; Intergovernmental Panel On Climate Change, 2022).

In Africa, the impacts of climate change are much magnified due to economic and geographical vulnerabilities. Regions like the Sahel and East Africa experience severe droughts and erratic rainfall, leading to reduced crop yields and increasing food insecurity (Adhikari et al., 2021; Charles et al., 2019). Rising sea levels threaten coastal cities in West Africa, while water scarcity intensifies in North and Southern Africa. Health risks, including the spread of vector-borne diseases like malaria, are exacerbated by shifting climate patterns (Charles et al., 2019; Nema, 2012). Climate change is projected to reduce GDP growth in "In sub-Saharan Africa by up to 3% by 2050, deepening poverty and migration challenges (African Development Bank, 2020, www.un.org). Adopting renewable energy, climate-smart agriculture, and resilient infrastructure is critical for mitigating these impacts and this requires huge sum of money.

In Zambia, climate change significantly affects the natural environment, agriculture, public health, and water resources. Frequent droughts and floods have threaten food security, particularly in Agro Region I areas such as the Southern and parts of Eastern Provinces that depend heavily on agriculture (Makondo and Thomas, 2020; Phiri, 2023). Maulu et al., (2024) also argues that the aquaculture sector has also become vulnerable to rising temperatures and erratic rainfall, leading to economic losses and heightened food insecurity. Rainfall variability has resulted in malaria transmission, worsening health outcomes, and also Water and Sanitation Housing infrastructure (WASH) is increasingly compromised, with intensified rainfall and aridity leading to waterborne disease outbreaks (Irish Aid and Resilience and Economic Inclusion Team, Policy Unit, 2018; Makondo and Thomas, 2020; Phiri, 2023). The increased drought incident has led to drying up of water sources such rivers stream, and dam subsequently leading to low electricity production. this has also led to increased forest degradation through the cutting of trees, to supplement the loadshedding

Eastern Province, Zambia, is particularly vulnerable due to its reliance on agriculture and water resources. Changing rainfall patterns and extreme weather have caused crop failures, although some projections indicate potential increases in soybean yields, emphasizing the need for crop diversification (Ndruru and Masjud, 2024; Nugroho et al., 2023). Water scarcity is intensifying, with models forecasting fewer rainy days and increasing competition for water resources, especially in the Luangwa River basin. This situation heightens cholera risks as heavy rains overwhelm sanitation systems (Sinyange et al., 2018). Strategic investments in WASH infrastructure, water-efficient technologies, and sustainable water resource management are essential to mitigating these impacts and building resilience in the region.

2.4 Overview of Climate Financing

Globally, climate finance is pivotal in addressing climate change, particularly by mobilizing resources from developed to developing nations in alignment with equity and shared responsibility. Developing nations, especially those in low-income and vulnerable areas, bear a disproportionate burden of climate change impacts, such as extreme weather events, rising sea levels, and disruptions to ecosystems and livelihoods and Climate finance

plays a crucial role in enabling these countries mitigate the adverse effects of climate change by offering financial support for adaptation strategies, renewable energy initiatives, and sustainable development projects (Digitemie and Ekemezie, 2024). Furthermore, it is vital for tackling the root causes of vulnerability and inequality, fostering social equity, and strengthening the resilience of both communities and ecosystems in these (Digitemie and Ekemezie, 2024). The Paris Agreement reaffirmed developed countries' commitment to mobilize \$100 billion annually by 2020 to aid vulnerable nations, though this goal remains unmet (Price, 2021a). Financing options like the Green Climate Fund (GCF) and Global Environment Facility (GEF) facilitate investments in climate resilience and low-carbon transitions (Nakhoda et al., 2014). With a projected \$89 trillion required for global infrastructure and \$4.1 trillion in incremental investments for a low-carbon economy over the next 15 years, substantial funding gaps persist, particularly for mitigation and adaptation needs in developing regions (World bank, 2010). Bureaucratic barriers and mismatches between community needs and funded projects exacerbate these challenges, with adaptation financing notably underfunded relative to mitigation (Atteridge and Steele, 2015; Measham et al., 2011; Price, 2021a).

In Africa, climate finance underpins efforts to address climate change while promoting sustainable development. Key instruments include green bonds, international funds, and public-private partnerships supporting renewable energy and resilience-building initiatives (Commonwealth Secretariat, 2021; Price, 2021a). However, varying regulatory frameworks, institutional capacities, and political dynamics influence the effectiveness of these tools across regions. Therefore, aligning climate finance with socio-economic goals and ensuring equitable distribution are critical (World bank, 2010).

Zambia exemplifies the intersection of national policies, international agreements, and external funding in climate finance. National frameworks, such as the Zambia National Climate Change Policy, guide investments in adaptation and mitigation (GRZ, 2016). International mechanisms, including GCF-funded projects like the Integrated Forest Landscape Project, address regional vulnerabilities but are hindered by bureaucratic complexities and centralization, limiting provincial-level autonomy (Clark et al., 2018; Commonwealth Secretariat, 2021; Mulenga, 2013). In the Eastern Province, reliance on

agriculture amplifies the need for targeted climate finance to enhance resilience. Civil society and private sector contributions, such as the Scaling Solar Project, complement government efforts but require enhanced coordination for optimal impact. Strengthening technical capacities and fostering collaboration among stakeholders are imperative for effective climate finance deployment.

2.5 Types of climate financing options

Climate financing comprises a variety of financial instruments and mechanisms aimed at supporting mitigation and adaptation efforts against climate change. Generally, climate finance is categorized into public, private, and hybrid financing options. Public climate financing sources include government allocations, international development aid, and multilateral funds such as the Green Climate Fund (GCF), Global Environment Facility (GEF), and the Adaptation Fund (Commonwealth Secretariat, 2021; Watson et al., 2013). These funds primarily target climate adaptation strategies, ecosystem-based adaptation (EbA), and biodiversity conservation.

On the other hand, Private climate financing sources constitutes the largest portion of international climate finance. Sources include private corporations and financial institutions, including both equity and loans for specific projects and is not state controlled funds. In the Zambian climate finance landscape, two main categories of private sector actors are considered namely Commercial entities such as non-state-controlled financial players, including banks, institutional investors, fund managers and venture capital investors, and Other private entities such as Corporates, philanthropists/donors, NGOs and households' (Watson et al., 2013). The majority of these resources are concessional loans, debt, equity or guarantees (Commonwealth Secretariat, 2021). Furthermore, Private climate financing consists of market-driven instruments like green bonds, and sustainability-linked loans, with Green bonds having emerged as a key tools in financing renewable energy projects and sustainable infrastructure development. However, the proliferation of private climate finance faces challenges such as regulatory inconsistencies and the risk of greenwashing. Hybrid financial mechanisms, such as public-private partnerships (PPPs), blend government and private sector investments to scale climate mitigation projects have also emerged as a new type of financing.

Despite the growing landscape of climate financing, barriers such as the lack of standardized regulations, limited access to capital for developing countries, and transparency concerns persist (Commonwealth Secretariat, 2021; Mulenga, 2013; Watson et al., 2013). Addressing these challenges will be critical to ensuring the effectiveness and scalability of climate finance solutions in achieving global sustainability objectives.

2.6 Types of Climate Financing models

Several models of climate financing have emerged to support global mitigation and adaptation efforts by mobilizing resources from both public and private sectors. The Grant-Based Financing Model is widely used in developing countries, providing non-repayable grants for projects like disaster recovery and sustainable technologies, with institutions like the Green Climate Fund (GCF) and Global Environment Facility (GEF) playing key roles (Atteridge and Steele, 2015; Trujillo and Nakhooda, 2013). The Concessional Loan Model offers loans at below-market rates with long repayment periods, supporting large infrastructure projects such as renewable energy systems (Digitemie and Ekemezie, 2024; World bank, 2010). The Carbon Market Model, operating under cap-and-trade systems, enables countries or companies to buy and sell carbon credits to offset emissions, as seen in the EU Emission Trading System (Digitemie and Ekemezie, 2024). Blended Finance combines public and private funds, using public capital to mitigate risks and attract private investments for climate projects, especially for high-risk or innovative initiatives (Calvin et al., 2023a; Digitemie and Ekemezie, 2024; Price, 2021a). Lastly, the Insurance-Based Model provides climate insurance mechanisms where communities pay premiums for payouts in the event of climate-induced disasters like floods or droughts (Intergovernmental Panel On Climate Change, 2022). While promising, the success of these models depends on enhanced governance, stakeholder collaboration, and adaptive strategies tailored to diverse national needs.

2.7 Zambia's Climate Finance Landscape and Strategies.

Zambia's climate finance landscape is shaped by a growing framework of government strategies and institutional mechanisms aimed at strengthening the country's response to climate change. Over the past decade, Zambia has made concerted efforts to build a comprehensive climate finance governance system that not only integrates climate action

into national development goals but also facilitates access to climate finance from international sources (Commonwealth Secretariat, 2021; Mulenga, 2013). Key strategic documents such as the National Climate Change Response Strategy, National Policy on Climate Change, the Third National Communication, and the Updated Nationally Determined Contributions (NDC) lay the foundation for mobilizing and coordinating climate finance in the country (Commonwealth Secretariat, 2021; Mulenga, 2013). These documents have strategies that help align climate goals with broader national development priorities and form the backbone of Zambia's climate finance governance.

Zambia's climate finance efforts are guided by comprehensive strategies, including the National Climate Change Policy (NCCP) and the Eighth National Development Plan (8NDP), which integrate climate resilience into the country's broader development goals (Clark et al., 2018; Gombera, 2023). Additionally, Zambia's Nationally Determined Contributions (NDCs) under the Paris Agreement outline its climate commitments, with climate finance playing a key role in achieving its greenhouse gas reduction targets and adaptation goals (Atteridge et al., 2020; Commonwealth Secretariat, 2021). This integrated approach aims to enhance Zambia's resilience to climate impacts while fostering sustainable economic growth.

Donor coordination in Zambia's climate finance landscape is facilitated through technical and sectoral committees that are gradually being integrated into government-led coordination structures. This integration aims to enhance synergies and ensure that donor activities align with national priorities. Major multilateral partners like the World Bank and UNDP continue to play pivotal roles by supporting the two main government authorities, which is the Ministry of Green Economy and Environment and the Ministry of Finance and National Planning (MFNP) through their respective funding and technical assistance mechanisms (Commonwealth Secretariat, 2021).

Domestically, Zambia is making strides in creating a more conducive environment for private investment in climate projects. The government has been promoting blended finance approaches, where public funds are used to de-risk investments or reduce tax thereby attracting private capital into sustainable sectors such as renewable energy and climate-smart agriculture (Digitemie and Ekemezie, 2024). These initiatives are

underpinned by efforts to build institutional capacity to manage, track, and report climate finance flows effectively.

Zambia has made notable progress in accessing and structuring climate finance, but several key challenges still hold back its full potential. One major problem is the lack of effective coordination among government institutions, which leads to overlapping roles, slow decision-making, and missed opportunities (Digitemie and Ekemezie, 2024). Studies show that political dynamics—such as power struggles and competing interests—often disrupt smooth cooperation between government agencies and donors. This undermines efforts to align financial support with national priorities. For example, even though Zambia has created national structures for managing climate finance, these often operate in fragmented ways, often at national level, influenced by competing donor agendas and domestic political interests (Funder & Dupuy, 2022).

Another critical challenge is limited institutional capacity. Many public agencies in Zambia lack the technical skills needed to design, implement, and monitor climate finance projects effectively. For example, Local authorities, who are closest to the climate-affected communities, often operate with limited knowledge of financing mechanisms, lack access to proposal development support, and face bureaucratic hurdles that inhibit fund disbursement (Digitemie and Ekemezie, 2024; Gombera, 2023). As a result, Zambia sometimes struggles to absorb funds, meet donor reporting standards, and deliver tangible results. This capacity gap affects both national and sub-national institutions and makes it difficult to build a track record that would attract further investment (Commonwealth Secretariat, 2021).

Zambia also faces macroeconomic and financial limitations. In recent years, the country has experienced a sharp rise in public debt, partially due to increased reliance on project-based loans. This reduces fiscal space for domestic climate investment. At the same time, external funding has become less predictable.

2.8 Integration of Climate Financing into Planning

2.8.1 Planning Frameworks for Climate Action

Effective climate action depends on comprehensive planning frameworks that integrate climate change considerations into development policies at global, national, and local levels. One of the central frameworks is the Nationally Determined Contributions (NDCs), established under the Paris Agreement. NDCs outline each country's climate goals and strategies for mitigating greenhouse gas emissions and adapting to climate impacts. These are reviewed every five years, creating a dynamic process for countries to strengthen their commitments and ensure accountability (Atteridge et al., 2020)

Another significant planning framework is the National Adaptation Plans (NAPs), which focus on long-term strategies to adapt to climate change, particularly in vulnerable sectors like agriculture and water resources. NAPs complement NDCs by concentrating on national adaptation priorities and integrating them into overall development plans, ensuring that climate resilience becomes a part of economic planning (Gombera, 2023; GRZ, 2024)

At the local level, urban areas are increasingly developing their own climate action plans. Urban climate action plans align local efforts with national and global climate goals, allowing cities to address their unique vulnerabilities and opportunities. In Zambia, Integrated Development Plans (IDPs) serve as strategic tools for guiding urban development, land use planning, and service delivery at local level (Gombera, 2023). By aligning local efforts with national and global climate goals, IDPs can help cities contribute to Zambia's Nationally Determined Contributions (NDCs) under the Paris Agreement, thereby ensuring urban growth is not only sustainable but also climate-responsive.

By integrating climate action frameworks into IDPs, Zambian cities can strengthen resilience, mitigate climate risks, and contribute to global sustainability efforts. Local authorities must ensure that IDPs are climate-responsive, participatory, and aligned with Zambia's broader environmental policies to achieve long-term urban sustainability.

2.9 Integration of Climate Change into National and Local Integrated Development Plans

Climate change poses a risk to many development sectors and thus addressing it cannot be achieved by placing it in a silo. Addressing climate change as a cross-cutting issue is most effective when it is integrated into broader development planning. Mainstreaming climate change considerations into these plans enhances the likelihood of success compared to

tackling it in isolation through separate, sector-specific climate change policies or strategies (Vincent, 2018). Integrating climate change adaptation and mitigation into development activities offers several key benefits, including preventing policy conflicts, reducing risks and vulnerabilities, enhancing efficiency by integrating adaptation within broader planning frameworks, and accessing larger financial resources in sectors impacted by climate risks, rather than relying solely on limited funds (Louis, 2010). Vincent (2018) highlights that development goals within a plan can both be impacted by climate risks and, conversely, contribute to climate risks by increasing vulnerability through actions that exacerbate climate change, therefore to ensure the sustainability of climate change interventions, it is essential for districts to integrate climate change considerations into their development plans at both the district and ward levels.

Zambia's National Development Plans (NDPs) have progressively incorporated environmental issues since the 1960s, with climate change integration becoming more pronounced from the early 2000s, influenced by both domestic and international forces (Zulu & Simenti-Phiri, 2022). The integration of climate change into local development planning frameworks is essential to ensure resilience and sustainability at national, regional, and local levels. In this regard, Legal and policy frameworks have been developed to harmonize and mainstream climate change adaptation, mitigation, and disaster risk reduction (DRR) into municipality Integrated Development Plans (IDPs). The integration of climate change into local development plans in Zambia is an ongoing process that requires coordination between national policies and local implementation.

However, progress in harmonizing legislation and promoting these integrations is limited, with political will and international donor support being more pronounced for climate change adaptation and mitigation than for disaster risk reduction (Banda et al., 2022). Additionally, strategic urban planning has shown that integrating climate risk into city development requires trust, stakeholder engagement, and supportive legal and financial frameworks, yet faces resistance that skilled intermediaries can help mitigate (Taylor et al., 2021).

Despite progress, several challenges hinder the effective integration of climate change into local development plans. These include limited financial resources, insufficient technical

capacity at the local government level, and a lack of coordination between national and local authorities. Additionally, the awareness of climate risks among local planners and communities can be low, leading to inadequate consideration of climate change in development decisions.

The integration of climate finance into national and local development plans is increasingly recognized as essential for addressing climate change challenges, enhancing resilience, and promoting sustainable development. Climate finance refers to funding allocated for climate change mitigation, adaptation, and resilience initiatives, often sourced from international funds such as the Green Climate Fund (GCF), bilateral and multilateral donors, or domestic government budgets (OECD, 2019). Effective integration of this finance into development plans at both national and local levels is crucial to align climate actions with broader socio-economic goals and facilitate coherent, long-term strategies for climate-resilient development (UNDP, 2020).

2.9.1 National-Level Integration

At the national level, integrating climate finance into development plans is central to achieving sustainable growth and meeting international commitments, such as those outlined in the Paris Agreement. This process involves embedding climate resilience goals within economic and social policy frameworks, as well as ensuring that climate priorities are reflected in national budget allocations and sectoral strategies (Gombera, 2023). For example, studies from Sub-Saharan Africa illustrate how countries have incorporated climate finance into national development plans to align with their Nationally Determined Contributions (NDCs) and broader socio-economic objectives (Kojima, 2020). In Kenya, for instance, climate finance has been channeled into priority areas such as agriculture and renewable energy, leveraging the GCF and bilateral sources to reduce vulnerability and enhance sustainable development (Nyingi et al., 2019).

Research suggests that successful national-level integration requires strong institutional frameworks and coordination mechanisms across government ministries (Nakhooda & Watson, 2016). Countries that have established dedicated climate finance units or inter-ministerial committees, such as Bangladesh and Mexico, demonstrate more cohesive

alignment between national climate finance strategies and development goals (Asian Development Bank, 2021). However, challenges remain in securing adequate and predictable finance, as well as in coordinating multi-sectoral objectives and resource allocation across ministries. Consequently, aligning national budgets with climate commitments remains a complex but necessary task to achieve resilience and sustainable development goals (World Bank, 2020).

2.9.2 Local-Level Integration

At the local level, integrating climate finance into development plans is equally important, as it enables sub-national governments to address climate risks specific to their regions. Local governments often face unique environmental challenges, such as sea-level rise, drought, or urban flooding, which require tailored adaptation and mitigation strategies. Research has shown that direct access to climate finance at the local level improves the effectiveness of adaptation initiatives by allowing local authorities to plan and implement projects aligned with community needs (UNCDF, 2017). For example, in the Philippines, decentralized climate finance mechanisms enable local governments to implement community-based adaptation projects, strengthening resilience at the grassroots level (Carabine et al., 2019).

However, the integration of climate finance into local planning faces several barriers, including limited technical capacity, lack of data, and inadequate coordination with national-level priorities (Mohan et al., 2018). Studies emphasize that local governments need sufficient capacity-building initiatives to manage and utilize climate finance effectively, particularly in developing regions (USAID, 2020). Furthermore, aligning local plans with national climate and development strategies is essential to ensure consistency in climate action and prevent resource fragmentation. This requires robust communication channels and alignment mechanisms between national and local governments, as well as clear guidance on climate finance application and reporting (OECD, 2021). The World Bank (2010) also reports that at the local government level, climate finance co-ordination is not structured uniformly across all districts.

2.10 Key Mechanisms and Strategies for Integration climate finance into development plans

Integrating climate finance into development plans requires well-structured mechanisms and strategic approaches that align financial flows with climate objectives. A strong policy and institutional framework is essential for mobilizing and directing climate finance into development plans. According to Gombera (2023) and Nzau (2013), national climate policies and financial regulations must be aligned with sustainable development goals (SDGs) and climate action strategies. UNFCCC (2021) emphasizes the importance of integrating climate finance considerations into national budgets, fiscal policies, and local government planning to ensure a coordinated approach.

Collaboration between public and private entities is also crucial for scaling up climate finance. Money (2023) and Mulenga (2013) highlight that public-private partnerships (PPPs) can facilitate investments in climate-smart infrastructure and renewable energy projects. Commonwealth Secretariat (2021) further discusses the role of blended finance, where public funds are used to de-risk private investments in climate initiatives, making projects more attractive to investors.

Furthermore, Accessing global climate finance sources is a key strategy for integrating climate finance into development plans. Commonwealth Secretariat (2021) identifies mechanisms such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Adaptation Fund as critical funding sources for climate adaptation and mitigation projects. Watson et al. (2013) emphasize that governments must strengthen their capacity to develop bankable climate projects to attract international funding.

Measham et al. (2011) and Watson et al (2013) highlights the use of green bonds, which allow cities and municipalities to raise capital for climate-focused projects. Additionally, carbon pricing mechanisms such as carbon taxes and cap-and-trade systems can generate revenue for climate adaptation and mitigation efforts (Commonwealth Secretariat, 2021)

Empowering local governments to access and manage climate finance is also crucial for effective integration into development plans. Coirolo (2021) suggests that decentralized climate finance allows local governments to implement context-specific climate initiatives that align with national policies. Building technical and financial management capacity

therefore is essential for integrating climate finance into development plans. Tirpak et al. (2014) highlights that many developing countries lack the expertise to develop and manage climate finance projects. Clark et al. (2018) suggests that targeted capacity-building programs can improve financial planning, project preparation, and monitoring of climate-related investments.

2.11 Awareness and Knowledge of Climate Financing Options

Awareness and knowledge of climate financing options are crucial determinants of accessibility and integration into planning processes, influencing the extent to which stakeholders, particularly in developing regions, can effectively leverage available financial mechanisms for climate adaptation and mitigation. The necessity for tailored and reliable climate information, as well as capacity-building initiatives, to enhance the use of climate financing options in strategic decision-making cannot be overemphasized (Mungai et al., 2022). Despite existing financial instruments designed to support climate initiatives, the effectiveness of such mechanisms is hindered by gaps in awareness, accessibility, institutional readiness and understanding of available funding sources among planners and other policymakers (Mungai et al., 2022). Many local authorities and development agencies lack knowledge of multilateral and bilateral financing opportunities, leading to underutilization of funds (Adenle et al., 2017). Price (2021) also argues that the complexity of climate finance instruments further exacerbates this issue, making it difficult for local governments to navigate funding mechanisms effectively.

Additionally, a lack of localized climate finance knowledge often results in underutilization of funding opportunities, particularly in vulnerable regions. Dasandara et al. (2023) emphasize that knowledge gaps among planners regarding eligibility criteria and compliance requirements create barriers to securing local and international climate finance. Consequently, this lack of awareness reduces the likelihood of climate finance being effectively integrated into strategic development planning. According to Gombera (2023), insufficient technical expertise in preparing funding proposals results in a low success rate in securing climate finance. Many local authorities struggle with the stringent documentation and financial reporting requirements imposed by funding bodies (Kouwenberg & Zheng, 2023). This complexity discourages applications from developing

regions, where financial and human resources are already constrained. Limited dissemination of climate finance literacy programs also exacerbates this challenge, as potential beneficiaries struggle to navigate complex funding structures and eligibility criteria (Measham et al., 2011). Addressing these barriers requires a multi-pronged approach, including targeted education campaigns, simplification of funding application processes, and the integration of climate finance considerations into national regional and local development plans like IDPs. Kiremu et al. (2022) notes that where awareness levels are low, climate finance is often treated as an external funding source rather than an integral component of local planning. This fragmented approach leads to misaligned projects that fail to address key environmental and socio-economic challenges. Furthermore, enhancing partnerships between financial institutions, policymakers, and local communities can facilitate greater access to climate financing and ensure that funds are equitably distributed and effectively utilized for climate resilience-building efforts. Therefore, strengthening awareness and knowledge of climate financing options is fundamental to improving accessibility and fostering the integration of climate finance into broader development and adaptation strategies. Mungai et al. (2022) proposed that improving financial literacy among planners and fostering multi-stakeholder collaboration could enhance integration and lead to more climate-responsive development planning.

2.12 Case Studies on the Climate Finance and Planning Nexus in the Global

South: Lessons

2.12.1 Case of Coastal Land Use Planning in LUAS, Malaysia

The case of coastal land use planning in LUAS, Malaysia, exemplifies the successful integration of urban planning, coastal management, and financial strategies to achieve sustainable development. As outlined by (Asmawi et al., 2012)), this approach harmonized environmental, social, and economic objectives, ensuring that development in Malaysia's coastal areas was both effective and sustainable. Central to this success was the financial component, which played a critical role in implementing coastal management initiatives and enhancing community resilience. By securing adequate funding, LUAS was able to address complex challenges associated with coastal resource management, demonstrating that financial considerations are indispensable in such integrated efforts (Asmawi et al.,

2012). This study also underscores the potential of town planning systems to align closely with financial strategies, offering a replicable model for other regions grappling with environmental challenges. Coordinating planning and financing emerges as a key strategy for achieving sustainability goals, showcasing the broader applicability of LUAS's approach in promoting resilience and sustainable development in vulnerable areas.

2.12.2 Ethiopia – Climate-Smart Agriculture for Rural Planning

Ethiopia's adoption of climate-smart agriculture demonstrates the transformative potential of climate finance in enhancing rural planning and resilience to climate change. As agriculture is central to Ethiopia's economy and food security, the sector faces significant risks from droughts and unpredictable rainfall. Leveraging support from the International Fund for Agricultural Development (IFAD) and the Green Climate Fund (GCF), Ethiopia implemented projects focusing on drought-resistant crops, improved irrigation techniques, and comprehensive farmer training (IFAD, 2019). These initiatives enabled smallholder farmers to adopt sustainable and climate-resilient practices, securing food production and improving livelihoods amidst climate risks. Furthermore, integrating climate finance into rural planning enhanced water management systems and fostered localized strategies for sustainable agriculture. Ethiopia's experience underscores the essential role of climate finance in rural planning, highlighting how strategic investments can empower vulnerable communities to adapt to climate challenges. This case illustrates the broader importance of aligning financial mechanisms with planning objectives across the Global South, emphasizing that coordinated approaches are key to achieving sustainable development and effective climate adaptation.

2.12.3 Kenya: Decentralized Climate Finance through the FLLoCA Program

Kenya's Financing Locally-Led Climate Action (FLLoCA) Program exemplifies the impact of decentralizing climate finance to empower local governments (Coirolo, 2021). Launched in partnership with the World Bank, FLLoCA aims to strengthen local resilience by allocating funds directly to county governments for climate adaptation projects (World Bank 2021). This approach ensures that financial resources are managed at the local level,

fostering community-specific solutions to climate challenges. The program emphasizes performance-based grants, where counties receive funding contingent upon their commitment to climate-resilient planning and implementation. This structure not only incentivizes proactive climate action but also enhances accountability and ownership among local authorities (World bank 2021; Kenya News Agency, 2025). A critical lesson from FLLoCA is that empowering local entities with financial autonomy can lead to more contextually appropriate and effective climate interventions. However, the success of such programs hinges on building robust local capacities for financial management and project execution, ensuring that decentralized funds translate into tangible resilience outcomes.

In conclusion, the nexus between climate finance and development planning requires a multifaceted approach that combines decentralization, strategic partnerships, capacity building, and strong policy support. Allocating climate finance directly to local governments ensures that interventions are tailored to specific community needs, fostering greater ownership and sustainability of projects.

2.13 legal and Institutional framework for development planning and climate financing nexus

Zambia's climate finance legal and institutional framework has undergone considerable transformation over the past decade, reflecting an increasing alignment with international climate goals and an evolving domestic recognition of climate change as a developmental and economic imperative (Mulenga, 2013). In 2009, climate change was recognized as a separate and distinct policy issue with the institutionalization of the Climate Change Facilitation Unit, housed within the then Ministry of Tourism, Environment, and Natural Resources (Funder and Dupuy, 2022). This unit was supported by the United Nations Development Programme, which also funded the development of the 2010 National Climate Change Response Strategy. Responsibility for the coordination of climate finance was indeed ultimately moved to the Ministry of Finance in 2012 with the establishment of the Interim Climate Change Secretariat (Funder and Dupuy, 2022). The introduction of the Zambia National Climate Change Response Strategy (2010) and the National Policy on Climate Change (2016) laid the groundwork for mainstreaming climate change into development planning and improving institutional coordination. The policy provides

strategic guidance for integrating adaptation and mitigation efforts into national and local plans, promoting public-private partnerships, and advocating for diversified financing mechanisms. A notable strength of the policy is its call for institutional collaboration and multi-stakeholder engagement. Yet, it lacks binding authority and does not provide clear operational pathways or legal mandates for local governments to implement its provisions.

Currently, the institutional landscape for climate finance in Zambia is anchored by two key ministries, namely the Ministry of Green Economy and Environment and the Ministry of Finance and National Planning. These institutions are instrumental in implementing climate finance strategies, managing funds, and coordinating donor engagements. The government has also designated a National Designated Authority (NDA), located within Ministry of Green Economy and Environment, to enhance Zambia's access to global climate finance especially the Green Climate Fund (GCF). At the same time, financial regulators and policy makers are beginning to encourage private sector involvement in climate-resilient investments, creating new pathways for green growth (Mulenga, 2013).

At the national level, the Office of the Vice President chairs climate finance coordination, with strategic guidance from the Council of Ministers, comprising relevant ministries such as Agriculture, Water, and Finance. Other key agencies like the Zambia Environmental Management Agency (ZEMA) and the Disaster Management and Mitigation Unit (DMMU) also contribute to the coordination of the institutional framework.

At sub-national level, The Decentralization Policy further empowers local governments by granting them the authority to plan and manage development projects and environment conservation within their regions (strategies (Gombera, 2023; UNDP, 2023). Locally, Local Authority, District Commissioner, the District Development Coordinating Committee (DDCC), and other non-state actors address the specific climate risks faced by local communities, however, institutionally, climate finance coordination is not structured uniformly across all districts as it tends to be sector based (Gombera, 2023; Funder and Dupuy, 2022).

With regards to the legal framework, Zambia has a number of legal provisions that regulate climate financing and planning. The most recent and significant legal development is the introduction of the Green Economy and Climate Change act no 18, of 2024, which seeks

to incorporate the principles and obligations of international treaties such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement into Zambian law. This act represents a critical shift toward institutionalizing climate governance, not merely as an environmental issue but as an integral component of national development planning.

Together, these legal and institutional frameworks ensure that Zambia's development planning is structured, participatory, and aligned with both national and international development goals. However, while the instruments offer a solid foundation for attracting and managing climate finance, their effectiveness in promoting integrated local planning remains constrained by systemic weaknesses in institutional coordination, decentralization, and implementation capacity (Digitemie and Ekemezie, 2024; Mulenga, 2013). Furthermore, the limited implementations of decentralization, insufficient capacity at the local level, and fragmented institutional mandates undermine the systematic integration of climate finance into sub-national planning (Digitemie and Ekemezie, 2024).

2.14 Barriers to Climate Finance integration in Local Planning

One major issue to scaling up climate finance is the limited availability of funding, particularly for adaptation efforts in developing countries (Digitemie and Ekemezie, 2024). Although developed nations have pledged to provide climate finance, the actual funds delivered remain insufficient compared to the estimated needs, leaving many countries without the necessary resources to implement climate-related projects and programs.

Additionally, there is a temporal mismatch between the long-term nature of climate projects and the short-term focus of available funding. Since climate initiatives often require sustained investment over several decades, the reliance on short funding cycles results in implementation gaps and disruptions in project continuity. Furthermore, the mismatch in priorities mean Global funds may prioritize certain types of projects, such as mitigation efforts, which might not align with the immediate adaptation requirements of specific regions. This discrepancy can result in essential local projects being underfunded.

The stringent conditions and complex application processes associated with many international climate finance sources can be difficult for developing countries – Local Authorities to navigate, especially those with limited administrative and technical

capacities (Digitemie and Ekemezie, 2024; Gombera, 2023). These challenges can lead to delays or failures in securing necessary funds, despite well-identified local planning needs.

Institutional fragmentation further complicates the effective utilization of climate finance. Responsibilities are often spread across various government ministries and agencies, leading to a lack of coordination. For instance, Ministry of Finance and National Planning may control funding allocations, while Ministry of Local Government and Rural Development or local governments are responsible for project planning and implementation (World bank, 2010). At the local government level, climate finance coordination is not structured uniformly across all districts.(World bank, 2010). Without effective coordination mechanisms, these entities may work in silos, resulting in inefficiencies and duplicated efforts.

Additionally, policy inconsistencies between national and local governments, or across different sectors, can hinder the effective use of climate finance(Lundsgaarde et al., 2018). National policies might prioritize large-scale infrastructure projects, while local plans focus on community-based adaptation initiatives. Such misalignments can lead to funding being allocated to projects that do not fully address local vulnerabilities or needs.

Capacity limitations are also a significant barrier. Many developing countries lack the technical expertise, adequate data, and monitoring systems necessary to effectively plan for and utilize climate finance (Gombera, 2023). These deficiencies can impede the development and implementation of robust climate projects.

Lastly, political and governance challenges, including political instability, governance issues, and corruption, can undermine the integration of climate finance into planning processes. Political shifts may lead to changes in priorities, causing discontinuity in climate initiatives. Weak governance structures can result in mismanagement of funds, reducing the impact of climate finance and eroding trust among donors and local communities (Gombera, 2023).

Addressing these barriers requires a multifaceted approach, ensuring that international finance priorities match local requirements, simplifying access to funds, enhancing

institutional coordination, harmonizing policies, building local capacities, and strengthening governance structures.

2.15 Opportunities of Climate Finance on Local Development and Sustainable Planning

Climate finance has the potential to catalyze significant positive impacts on local development and sustainable planning, particularly in areas vulnerable to climate change. By directing resources toward climate adaptation, resilience-building, and low-carbon growth, climate finance enables local governments and communities to address both immediate and long-term environmental challenges while promoting sustainable economic development (Atteridge and Steele, 2015; Clark et al., 2018). Investments from climate finance can support the development of resilient infrastructure, sustainable agricultural practices, and renewable energy projects, each contributing to local economic stability and reducing vulnerability to climate shocks (Falchetta et al., 2022; Fay et al., 2010). One of the primary benefits of climate finance for local development is its capacity to fund resilient infrastructure projects, such as flood control systems, drought-resistant water supply networks, and climate-proofed transportation. These projects are particularly critical for urban and rural areas that face frequent extreme weather events, as they help mitigate climate risks, reduce economic losses, and protect lives and livelihoods

In agriculture, climate finance has enabled the introduction of climate-smart practices that promote food security and sustainable land use, essential for rural economies dependent on agriculture. Techniques like conservation agriculture, water-efficient irrigation, and drought-resistant crop varieties not only improve productivity but also increase the adaptive capacity of local communities. In Kenya, the integration of climate finance into local agriculture programs has enabled farmers to transition to resilient farming practices, stabilizing local food supplies and reducing dependency on external aid (Crick et al., 2019; Kiremu et al., 2022; Mungai, 2021; Nzau, 2013)

Climate finance also plays a crucial role in fostering renewable energy projects that contribute to sustainable development by reducing greenhouse gas emissions and providing clean, reliable power to underserved areas. For instance, solar and wind energy projects financed by the Green Climate Fund in sub-Saharan Africa have improved energy access

in rural communities, supporting local businesses, healthcare, and education (Fay et al., 2010; Mungai et al., 2021). Access to affordable, sustainable energy boosts local economies and aligns with global efforts to transition toward low-carbon development.

Furthermore, the inclusion of climate finance in local planning processes encourages participatory governance and strengthens institutional capacities. By involving local stakeholders in the planning and implementation of climate-resilient projects, communities are more engaged in sustainable practices, and local authorities are better equipped to handle climate risks through planning frameworks that reflect local priorities (UNCDF, 2017). Enhanced institutional capacity also leads to better coordination across government levels, as seen in countries like the Kenya, where climate finance has supported local adaptation projects and fostered collaboration between national and local governments (Coirolo, 2021; Nzau, 2013, 2013).

Overall, the integration of climate finance into local development and planning enables communities to build resilience, achieve sustainable growth, and participate in global climate action efforts. With adequate funding, local governments can develop long-term strategies for adaptation and sustainable growth, fostering resilient, climate-smart communities that are well-prepared to meet future challenges (Atteridge and Steele, 2015; Clark et al., 2018)

2.16 Summary of Gaps in Literature

Despite growing recognition of the importance of climate financing in planning processes, the integration and effectiveness of these financing mechanisms within Zambia's local authorities remain under-explored. The following gaps have been identified

2.16.1 Limited Focus on Local Authority Capacity for Climate Financing

Although climate financing mechanisms are being discussed globally, there is limited research on the specific capacity of local authorities in Zambia to access, manage, and deploy climate funds. Most studies emphasize national policies but lack insight into how local-level governance structures, such as municipal councils and planning departments, interact with climate finance frameworks.

2.16.2 Climate Financing Options Available Sub National Level in Zambia

Current literature does not comprehensively detail the climate financing options accessible to Zambian local authorities. While there is documentation of international funding sources, such as the Green Climate Fund and Adaptation Fund, little is known about how these resources are accessed, utilized, and diversified at the local government level, especially in terms their nexus within planning frameworks. It focus more on international perspective

Therefore, the need to identify and analyze the array of climate financing options available to local authorities, assessing both international and local funding sources and how they are leveraged to support resilience and adaptation projects.

2.16.3 Awareness Levels of Climate Financing Options Among Planners

Although climate finance awareness is crucial for effective utilization, few studies examine how well-informed local planners and decision-makers are about the available climate finance options. The level of awareness impacts planners' ability to initiate, access, and apply climate financing resources within planning frameworks.

2.16.4 Effectiveness of Climate Financing Integration into Planning Processes

Literature addressing the integration of climate finance into local planning frameworks is limited, and there is an incomplete understanding of the extent to which Zambian local authorities incorporate climate financing within planning especially Integrated Development Plans, zoning laws, infrastructure planning, or resilience frameworks. Successful integration is necessary for aligning financial resources with strategic urban and regional development goals.

2.17 Theoretical underpinnings of the climate financing and planning Nexus.

The theoretical relationship between climate financing and planning is grounded in the integration of planning theory and practice to address climate change effectively. Central to this is the notion that planning must evolve to accommodate climate change imperatives,

which involve not just reactive measures but proactive, financially backed strategies that anticipate and mitigate climate impacts.

2.17.1 Nexus theory

Broadly speaking, the nexus approach is a tool for integrating systems, a platform for engaging stakeholders, and a method for exploring pathways for development. The appearance of nexus can be traced back to the early 1980s, and the relationship between two nodes (food-energy) was initially proposed (Charles et al., 2019). The Nexus Framework is an interdisciplinary approach that examines the interconnections and interdependencies between two topics or among sectors (Charles et al., 2019). This nexus is aimed at improving coherence, coordination and synergy between and among policies, programmes and actions (Charles et al., 2019; Falchetta, 2022). These nodes can be resource departments/systems or specific social-ecological problems. The nexus approach is very beneficial to the sustainable development agenda. The use of nexus approach in the context of sustainable development includes formulating implementation framework and determining relevant indicators and target values for evaluating trade-offs and synergies. Overall, the nexus approach has the potential to contribute to development sustainability.

When applied to climate financing and planning, the framework helps to identify synergies and trade-offs in resource allocation and investment, ensuring sustainable and efficient outcomes, this is particularly critical in resource-scarce settings. The central premise of the Nexus Framework is that sectoral issues are inherently interconnected, and addressing them in silos can lead to inefficiencies or unintended consequences (Falchetta, 2022). For example, in climate finance, investments in renewable energy must also consider impacts on water use and food security, as these resources are often interdependent (Falchetta, 2022). Additionally, the Nexus Framework emphasizes holistic planning by incorporating multiple stakeholders, ensuring that climate financing is equitably distributed and effectively addresses local vulnerabilities.

2.17.2 The Sustainable Development theory

The Sustainable Development Framework plays a crucial role in the climate financing and planning nexus. The Sustainable Development Framework emphasizes that climate action should be integrated into broader development strategies, ensuring that economic growth and environmental sustainability go hand-in-hand (Geertman et al., 2013; UNCTAD secretariat, 2022; Zhang, 2007). This framework guides both national development plans and international funding mechanisms, promoting the alignment of financial resources with long-term sustainable outcomes (Atteridge and Steele, 2015). These frameworks collectively highlight that the intersection of finance and planning is not just a logistical necessity but a theoretical cornerstone for advancing comprehensive climate action.

By synthesizing these theories, the nexus underscores that effective climate action depends on seamlessly integrating financing mechanisms within robust planning frameworks, thereby promoting synergy between financial resources and strategic climate objectives.

2.18 Conceptual framework for financing climate-proofed sustainable development

This study is anchored on the conceptual understanding that effective climate action at sub-national level depends on the integration of climate finance into local planning processes

The framework links two core variables: climate finance and planning effectiveness, with institutional capacity, awareness, and governance mechanisms acting as mediating factors. Climate finance, defined as financial flows—both domestic and international—targeted at supporting climate mitigation and adaptation, provides the necessary resources for implementing climate-resilient strategies. Planning, in this context, refers to the structured processes of setting development priorities, allocating resources, and implementing policies that address local socio-economic and environmental challenges. The framework posits that when climate finance options such as multilateral funds, bilateral aid, or innovative instruments—are systematically embedded within district and provincial planning systems, they enhance the capacity of local authorities to design and implement climate-smart development interventions. However, this relationship is influenced by several contextual variables: the level of institutional preparedness, technical knowledge

among planners, accessibility of financial instruments, and the presence of enabling legal and policy frameworks.

In the case of Eastern Province, Zambia, where climate vulnerabilities intersect with high dependence on agriculture and natural resources, the integration of climate finance into planning becomes even more critical. The framework therefore recognizes that gaps in coordination, low awareness of financing options, and centralized decision-making structures can weaken the climate finance–planning nexus, resulting in fragmented interventions that fail to address local needs. Consequently, the conceptual framework guides the investigation into how climate finance flows are aligned with development planning processes, and what institutional or structural reforms are needed to improve coherence and effectiveness at the sub-national level.

The framework in figure 1 integrates key theories, actors, and processes into a structured model to guide policy formulation and implementation. Figure 1 gives a general overall overview of the conceptual framework.

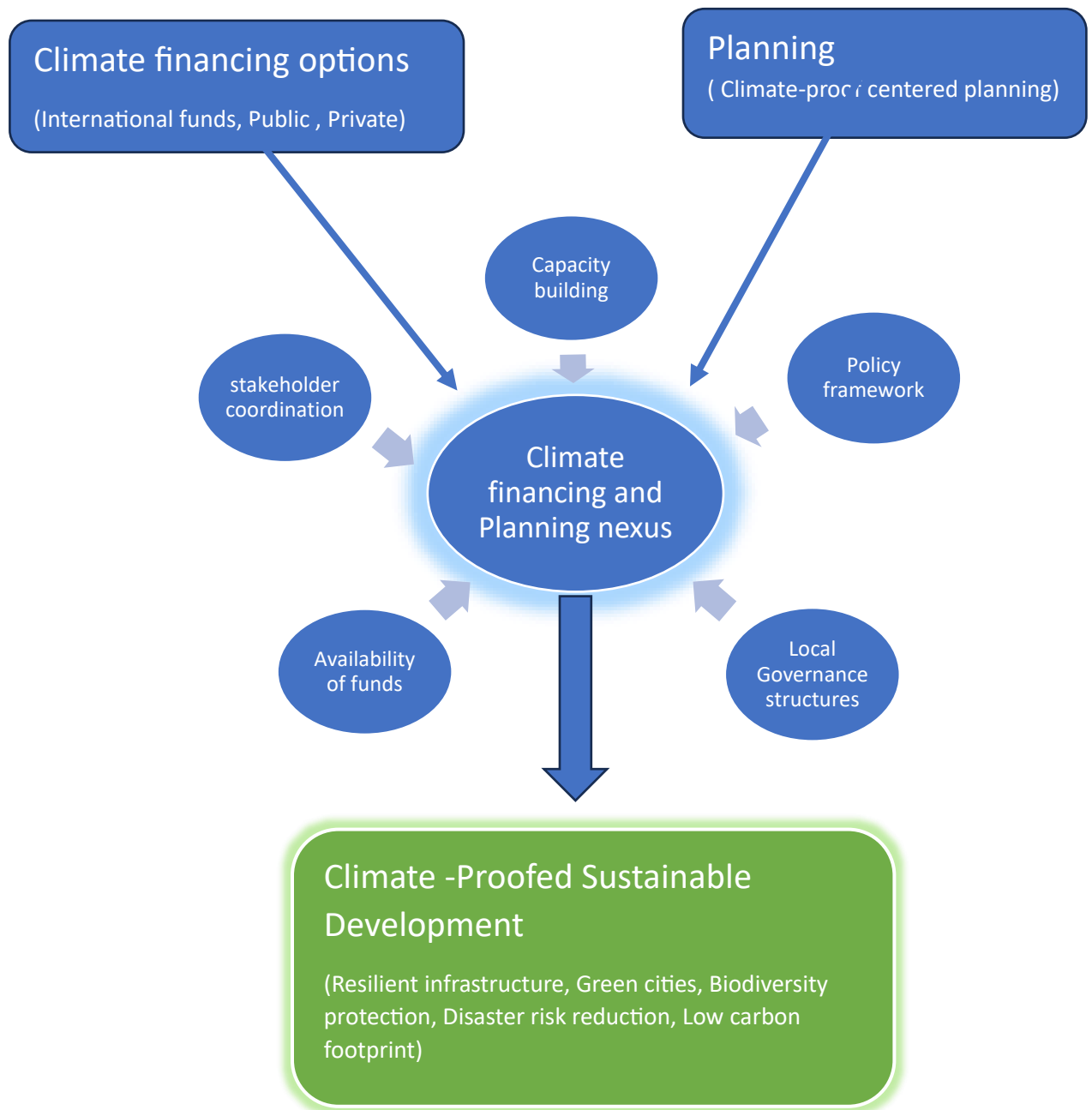


Figure 1 : Conceptual framework

Source: Author (2025)

CHAPTER 3: DESCRIPTION OF THE STUDY AREA: LOCAL AUTHORITIES IN EASTERN PROVINCE

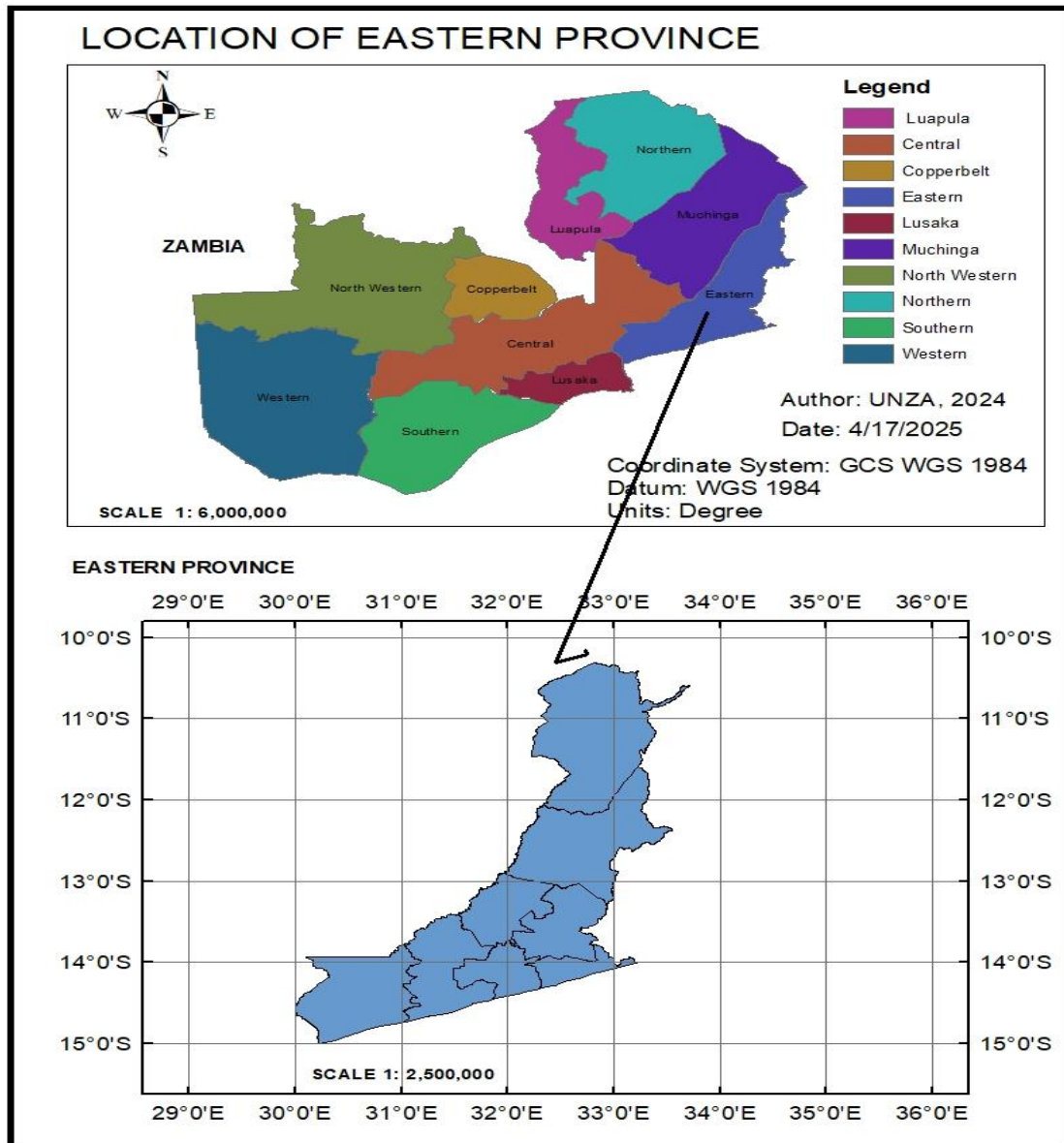
3.1 Introduction

This section presents the description of the study area in terms of the location and size, administration, infrastructure, population and economic activities. Eastern Province is one of Zambia's ten provinces, playing a pivotal role in the nation's socio-economic development. Renowned for its agricultural productivity, cultural heritage, and natural resources, the province faces increasing challenges from climate change (Bank of Zambia, 2020; ZIFL-p, 2017). Prolonged droughts, erratic rainfall, and deforestation are major issues threatening food security and livelihoods in the region (ZIFL-p, 2017). The province is an ideal focus for studying climate financing and planning due to its vulnerability and dependence on natural resources.

3.2 Location and Size of Study area

Eastern Province is situated in the eastern part of Zambia, bordered by Malawi to the east and Mozambique to the southeast as shown in figure 2. It shares internal boundaries with Muchinga Province to the northwest, Central Province to the west, and Lusaka Province to the southwest. Covering approximately 51,476 square kilometers, the province lies in Agro-Ecological Regions I (ZNPC, 2023) Figure 2 shows location map of the study area.

Figure 2: Map of study area



Eastern Province represents a critical case study in the intersection of climate vulnerability, rural development, and climate finance. With a population of approximately 2.45 million (ZCSO, 2022), predominantly rural and agriculturally dependent, the province embodies the developmental pressures faced by many climate-sensitive regions in sub-Saharan Africa. The provincial economy is anchored in smallholder agriculture, with over 95% of farmland held under customary tenure and cultivated by small-scale farmers (ZIFL-p, 2017). Key crops such as maize, tobacco, groundnuts, and cotton contribute substantially

to Zambia's national food security, yet the sector is increasingly threatened by erratic rainfall, prolonged droughts, and land degradation—challenges largely driven by climate change and unsustainable land use (Ministry of Finance and National Planning, 2021).

Moreover, the demographic profile of the province—characterized by rapid population growth and a high dependency on natural resources—amplifies its climate exposure. Women and children, who are primarily responsible for water and food provisioning, are disproportionately affected by water scarcity and food insecurity (Rawlins & Kalaba, 2021). Cross-sectoral challenges such as deforestation, driven by charcoal production and agricultural expansion, further reduce ecological resilience and contribute to emissions.

Eastern Province is highly vulnerable to climate change, with increasing temperatures, erratic rainfall, and extreme weather events such as droughts and floods. These changes threaten food security, water resources, and biodiversity. For example, droughts have resulted in crop failures and reduced water availability, while floods have damaged infrastructure and displaced communities (Alfani et al., 2019; Kalantary, 2010). The province's high rates of deforestation, driven by charcoal production and agricultural expansion, exacerbate carbon emissions and reduce resilience to climate change. Strategies for climate adaptation and mitigation, including afforestation, sustainable agriculture, and renewable energy, are critical to reducing vulnerabilities (Rawlins and Kalaba, 2021).

Climate change has intensified the vulnerabilities of the province's already fragile infrastructure. While the Great East Road and Chipata-Lilongwe railway enhance trade connectivity, rural areas remain underserved in essential services such as road connectivity, health, education, and clean water—gaps exacerbated by climate-induced floods and soil erosion (Rawlins & Kalaba, 2021). These infrastructure deficits limit the capacity of communities to adapt to climatic shocks and impede the effective delivery of development interventions.

Land administration operates under a dual system of customary and statutory tenure, with traditional authorities overseeing most rural land, and this arrangement, while historically functional, presents challenges in the context of climate change. Rising competition for

arable land due to population growth and environmental stressors has triggered land-use conflicts and accelerated deforestation (ZIFL-p, 2017). The lack of harmonized land-use planning frameworks further limits the integration of climate resilience into development strategies (Ministry of Lands, 2022). Recent participatory land-use planning initiatives, such as those under the Zambia Integrated Forest Landscape Project (ZIFL-p), aimed to address these issues by embedding climate-smart approaches into local governance structures in selected wards (ZIFL-p, 2017). Although National Frameworks support climate finance and planning alignment, implementation at the district level has been hampered by capacity constraints, fragmented institutional responsibilities, and low awareness of available funding mechanisms (Digitemie and Ekemezie, 2024; Gombera, 2023).

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter presents the research methods that this dissertation used to accomplish the aim of this research. It provides details of sampling methods, sample size, data collection methods using selected instruments such as questionnaires and interview guides, and means by which the data collected was finally analyzed to establish findings.

4.2 Research design Type: Convergent parallel

A research design as defined by Taylor (2000) is a constructed plan and strategy that is developed to seek and discover answers to research questions. The study adopted a convergent parallel design, and a mixed-methods approach where both qualitative and quantitative data are collected simultaneously, allowing for the integration of multiple data sources to create a comprehensive understanding of the research questions (Creswell et al., 2006a; Johnson and Onwuegbuzie, 2004). Although this study employs a mixed-methods approach, it leans more heavily on qualitative data collection to explore the nuanced perspectives of planning and climate finance experts (Creswell et al., 2006a). Qualitative data is a categorized measurement expressed not in terms of numbers, but rather by means of a natural language while Quantitative research is a numerical measurement expressed in terms of numbers (Bowen, 2011). This research design supported a flexible approach, enabling the researcher to refine focus areas as insights emerge from both data types, which was particularly valuable in capturing diverse perspectives on complex issues like climate financing and planning (Creswell et al., 2006b). By collecting and analyzing data concurrently, this design facilitated the triangulation of findings, enhancing the study's validity and reliability through cross-verification of results from different methods (Fetters et al., 2013). Triangulation is where quantitative data, which may reveal objective trends, is corroborated by qualitative insights, adding depth and context to the findings and thus strengthening the research's overall credibility (Tashakkori and Teddlie, 2010).

4.3 Ontological and Epistemological stance

Epistemology is defined as the question of what is regarded as acceptable knowledge in a discipline while Ontological position is the nature of social entities that entails whether the social entities or constructed knowledge can be considered as real or not (Morgan, 2007;

Bryman, 2008). This research adopted a pragmatic ontological and epistemological stance, emphasizing the practical application of both qualitative and quantitative approaches to gain a holistic understanding of climate financing mechanisms within planning strategies (Morgan, 2007). Pragmatism is inherently pluralistic, advocating for methods and knowledge types that are effective in addressing complex, real-world issues, regardless of whether they are objective or subjective (Creswell et al., 2006a; Morgan, 2007; Plano Clark, 2016). Rather than being bound by a purely objective or subjective perspective, pragmatism values both as means to understand multifaceted phenomena and is often described as the philosophy of “what works” (Johnson and Onwuegbuzie, 2004).

Pragmatism supported the mixed methods as it enabled the research to draw on different facets of knowledge to address the research questions effectively (Morgan, 2007). By integrating qualitative insights from interviews and quantitative analysis of financial data, this pragmatic approach facilitated a deeper exploration of the institutional, social, and economic aspects of climate finance, ultimately enhancing the research’s relevance and applicability to policy and practice.

4.4 Targeted populations

A population is any collection of objects or entities that have at least one common characteristic and it can be viewed also as the universe of units from which a study sample is selected (Swanson, 2010). For collection of qualitative data, this research targeted planning and Climate Financing experts such as Senior Planners from the Ministry of Local Government and Rural Development (HQ), Provincial Planning Authority and Provincial Planning Unit in Eastern Province. Professionals from the National Designate Authority and Chipata City Council Senior Planners. To collect quantitative data the study targeted all planners in local authorities in eastern province

4.5 Sampling methods

sampling is the selection of the respondents that represents a population well and stays within budget (Swanson, 2010). Although this study employs a mixed-methods approach, it leans more heavily on qualitative data collection to explore the nuanced perspectives of planning and climate finance experts. Purposive/Convenience sampling was used to select technical experts—specifically planners and those with specialized knowledge in climate

finance—within local authorities and line ministries, as these individuals represent the primary sources of insight relevant to the research questions. This approach enabled targeted access to professionals who possessed the requisite expertise, thereby ensuring that the data collected was both specific and relevant to the study's objectives (Marshall, 1996; Swanson, 2010). Census was also used to collect quantitative data because online questionnaire were administer to the population of planner in Eastern province (Swanson, 2010). According to Swanson (2010), a census is a sample of 100% of the population and it is enticing to believe that higher-quality findings are obtained from a complete enumeration of a population. It is particularly useful in studies where the population size is small and manageable, or where the research objective requires complete enumeration to ensure accuracy and inclusivity of results. Another of the primary reasons for using census sampling is to eliminate sampling error, thereby increasing the precision of the findings (Kumar, 2011). (Bryman, 2016). (Creswell & Creswell, 2018). the number of respondents is often small enough to make a complete survey feasible, and each individual's input is considered crucial to the research outcomes (Bryman, 2016). Moreover, using a census is appropriate when the research aims to make precise policy recommendations or conduct comprehensive needs assessments, where partial data could lead to incomplete or skewed conclusions.

4.6 Sample Size:

When collecting quantitative data, the entire population of 45 planners in local authorities in the province was part of the research. The entire population of planners in the 15 districts was part of the sample, since sample size calculation might reduce the sample further. When collecting qualitative data, five (5) key informants were purposively drawn from key government institutions such as Senior Planners from the Ministry of Local Government and Rural Development (HQ), Provincial Planning Authority and Provincial Planning Unit in Eastern Province. Professionals from the National Designate Authority and Chipata City Council Senior Planners. as they were deemed to have expert knowledge of the subject matter. The data was considered until a point of saturation and redundancy was observe in the data and themes(Groenewald, 2004; Swanson, 2010).

4.7 Data collection methods

4.7.1 Primary data methods

For primary data collection, two methods were used: key informant interviews and online-administered surveys. Key informant interviews allowed for in-depth exploration of expert insights, enabling the researcher to delve into specific experiences, challenges, and perspectives on the integration of climate finance within planning processes. To collect qualitative data, key informants, interview targeted experts such as senior planners from the Ministry of Local Government and Rural Development, Provincial Planning Authority and Provincial Planning Unit in Eastern Province. Professionals from the National Designate Authority and Chipata City Council Senior Planners were also targeted. The online questionnaire surveys were administered to planning professionals in Eastern province and these provided quantitative data, thus enriching the findings and offering an opportunity to triangulate information gathered through interviews (Creswell et al., 2006a; Swanson, 2010) The questionnaires were self-administered using google as most respondents were literate and able to read and write in English which was the language in which the questionnaire was written

4.7.2 Secondary data sources.

In collecting secondary data, a comprehensive desk review of existing literature and policy documents was conducted (Snyder, 2019). This included government and policy documents, research journals, budgets, and other relevant literature that provide context, background, and official stances on climate financing in Zambia and globally. This secondary data not only supported the primary data findings but also offered an essential foundation for understanding the existing frameworks and policies within which climate financing and planning exist (Bowen, 2005). Most of this information was from the internet.

4.8 Data analysis

4.8.1 Qualitative Data Analysis

The study employed thematic analysis to analyze qualitative data, which allowed for the identification of recurring patterns, themes, insights, challenges, and strategies relevant to climate finance and planning. Thematic analysis, which involves coding and categorizing data into key themes, will help reveal deeper insights and commonalities across participant responses (Braun & Clarke, 2006). This approach made it possible to identify the main challenges and perspectives shared by planning experts and technical advisors, providing a structured understanding of complex issues. Verbatim analysis was used also when analyzing data collected through key informant interviews as strengthened data analyzed thematically by presenting experiences of respondents in their own words.

4.8.2 Quantitative Data Analysis

For the quantitative data, descriptive statistics was used to summarize and describe data collected from surveys, allowing the identification of trends, patterns, and any notable differences in perceptions across stakeholder groups and districts. Percentages and frequencies calculation were used to summarize the quantitative data. A combination of thematic and statistical analysis provided a comprehensive overview of the findings, enabling data triangulation and enhancing the validity of the study's conclusions.

4.9 Ethical considerations

In this study, informed consent was obtained from all participants prior to conducting interviews or surveys. Informed consent entails providing participants with a clear explanation of the research objectives, methods, potential risks, and their rights within the study, allowing them to make an informed decision about their participation (Groenewald, 2004). Participants were treated with the utmost respect and were clearly informed that their involvement was entirely voluntary. They had the right to withdraw from the study at any point during the interviews or while completing the questionnaire. An official introductory letter was secured from the School of Natural Sciences, Department of Geography and Environmental Studies at the University of Zambia (UNZA) and Copies of the letter were formally submitted to key institutions.

To protect the identities and sensitive information of all participants, principles of anonymity and confidentiality were adhered to strictly throughout the data collection and analysis processes (Swanson, 2010). Furthermore, to reinforce the credibility and scholarly value of research, I recognized and acknowledge all sources of information, theories, or ideas derived from other authors (Swanson, 2010). Throughout this research, integrity and honesty were upheld by following established methodologies meticulously and reporting all findings truthfully, thereby avoiding any form of selective reporting, falsification, or misrepresentation, which could compromise the study's validity. In line with university regulations, ethical clearance was sought and approved and was granted by the Natural and Applied Science Ethics Committee (see appendix E with the clearance letter).

CHAPTER 5: RESULTS AND DISCUSSIONS

5.1 Introduction

The chapter presents findings as well as discussion for this study on the climate financing and planning nexus that involved collection of data using a combination of qualitative and quantitative methods. The quantitative component involved collecting using survey questionnaires while the qualitative used in depth interviews. Responses from these questions were further analyzed through descriptive statistics- percentages, and thematic analysis—a method that identifies themes and patterns of meaning within a data set.

5.2 Demographic characteristic of respondents

To collect qualitative data using interview guides, the research reached out to 5 key Interview Informants from Chipata City Council, Ministry of Local Government and Rural Development, Provincial Planning Authority and Provincial Planning Unit in Eastern Province, and National Designate Authority. One (1) key Interview Informant was female the rest four were male. The survey on the other hand was used to collect quantitative data and included 51 respondents (planners), with males accounting for 65% and females comprising 35%, from 15 local authorities in Eastern province as shown in Figure 3.

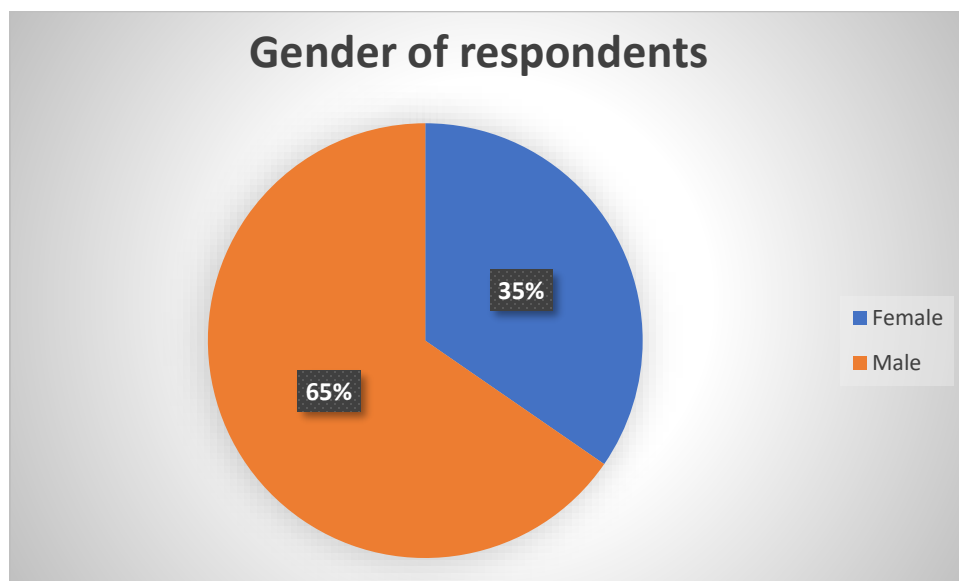


Figure 3: Levels of awareness of the Climate Financing

Source: field survey, 2024

This gender disparity suggested a potential male dominance in decision-making or participation in climate financing and planning discussions. The underrepresentation of women could influence the planning priorities and perspectives captured in the data, especially concerning gender-responsive climate planning and resource allocation (Rawlins & Kalaba, 2021). From an institutional perspective, the inclusion of planners from all 15 local authorities suggests a well-distributed and inclusive sample (Swanson, 2010). This geographic and administrative diversity enhances the credibility of the findings, ensuring that the insights drawn from the data account for variations in local planning capacity, resource availability, and climate vulnerabilities across the province. The comprehensive coverage of local authorities also supports the robustness of the study's conclusions regarding the climate finance–planning nexus, as it captures localized experiences, challenges, and institutional dynamics across multiple local authorities.

5.3 Levels of awareness of the Climate Financing among planners in local authorities

Data collection was done on the ordinal scale of measurement and for each of the measures highlighted, rankings were used in the assessment of the awareness of climate financing among planners in local authorities. These were; not familiar (1), slightly familiar (2), moderately familiar (3), very familiar (4), and extremely familiar (5) on a 5- pointer Likert Scale.

Figure 4 shows the levels of awareness of about Climate Finance among planners in local authorities according to the responses:

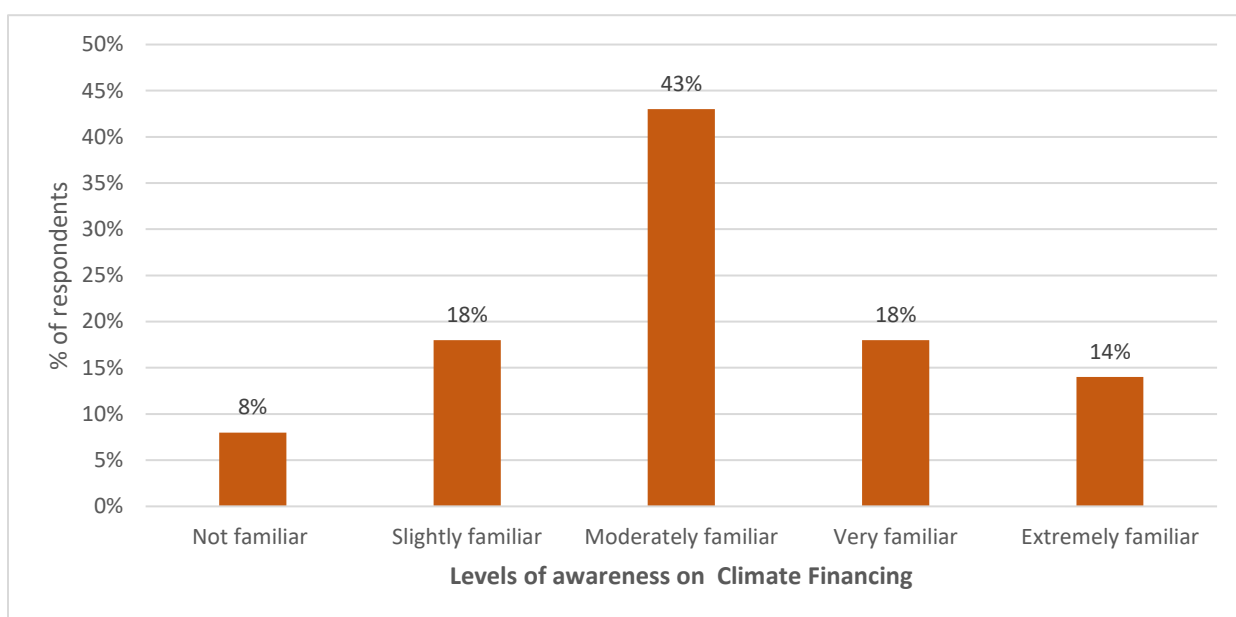


Figure 4: Levels of awareness of the Climate Financing

Source: field data, 2024

The results highlighted that the majority, 43% of respondents, were moderately familiar with climate financing. Only 14% of respondents are extremely familiar. A notable 26% of respondents (8% not familiar and 18% slightly familiar) have minimal knowledge of climate financing.

One respondent from NDA said this:

*We periodically hold engagements where we bring together stakeholders from various sectors to discuss how they can access different climate funding opportunities. This year, we plan to host our inaugural **Climate Financing Forum**, which will serve as a platform for funders and potential project developers to connect and exchange of critical information, expectations, and best practices, fostering collaboration to enhance access to climate finance*

According to (Kouwenberg and Zheng, 2023), Climate finance is an emerging field that has gained significant attention since the Paris Agreement, highlighting the importance of increasing awareness and understanding of climate financing options. However, this study

assessing the awareness of climate financing among 51 local Authority Planners reveals that 43 % are moderately familiar and 8% of these are not familiar with the various climate financing options. This suggests a knowledge gap that has potential to hinder the effective mobilization of climate finance at local level. The finding align with research indicating that local governments often struggle with climate finance due to limited knowledge and institutional capacity or skills (Coirolo, 2021; Crick et al., 2019; Gombera, 2023; Measham et al., 2011).

Notably, research in Ghana on climate policies found that while awareness among planners is relatively high, there is lack of clarity on which institution should drive climate action (Enu et al., 2021). This aligns with the research which indicate that a number of planners are moderately familiar with climate financing options reflecting a partial understanding which may affect implementation in local authorities(Lundsgaarde et al., 2018).

5.3.1 Analysis of planner awareness of various climate financing sources.

The results highlight the varying knowledge levels with different funding sources, emphasizing key areas of strength and gaps in knowledge.

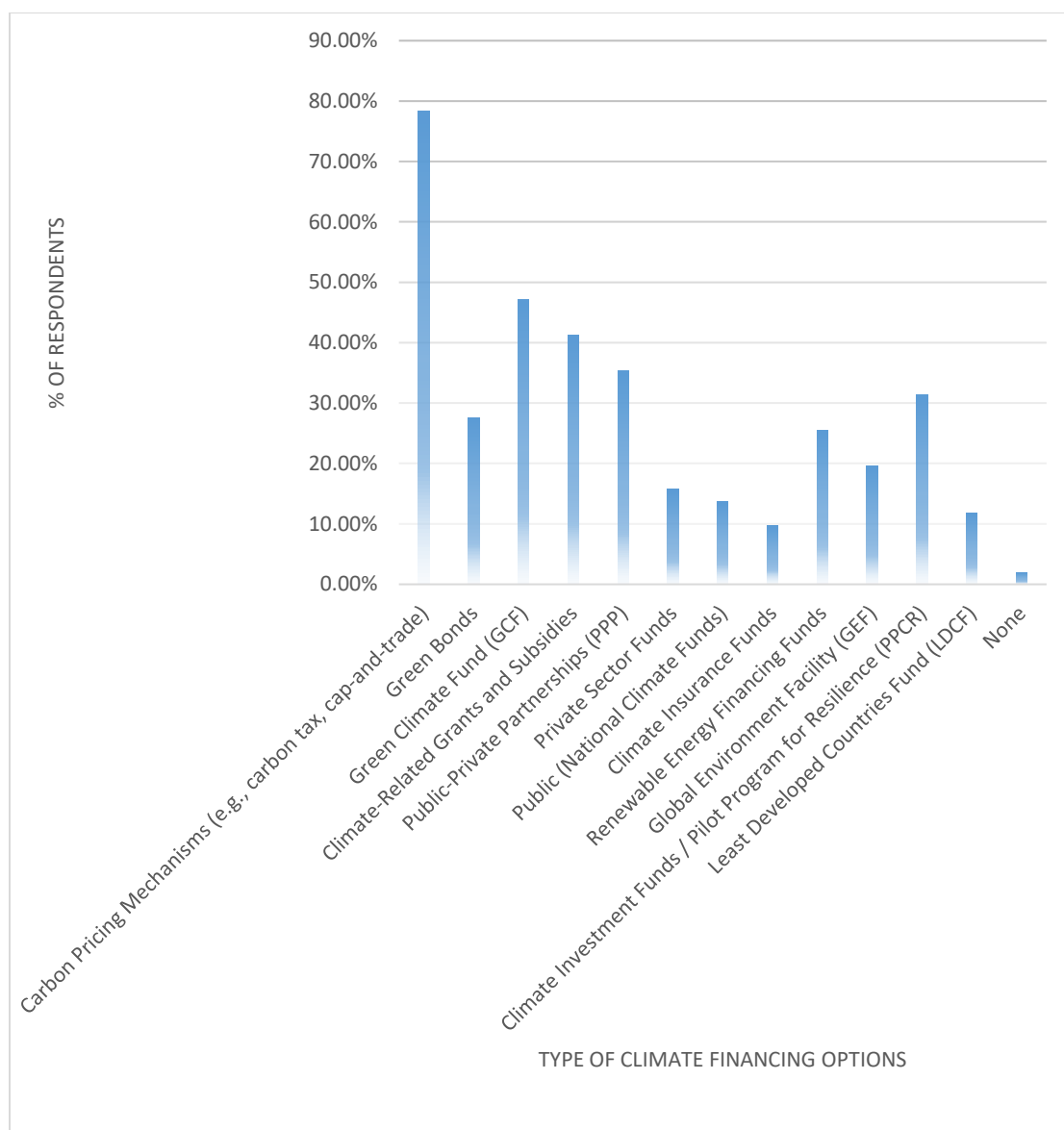


Figure 5: Awareness and understanding of various climate financing options.

Source: field data, 2024

One respondent remarked:

"Eastern Province is fortunate to have had World Bank projects like the Zambia Forest Integrated Landscape Project, which strongly emphasized climate change. As a result, most planners have some understanding of climate financing from international funder, though it is inadequate."

While another reported highlighted:

“For Eastern Province, there are three main sources of climate financing, but currently, the World Bank is the primary funder of climate change activities, having invested millions of dollars.

Another respondent added, “I am aware of various climate financing options, including public financing, which we typically incorporate into our budgets as local authorities and government departments. We also have multilateral options, such as those provided by the World Bank, and bilateral options from development partners like Domegan.”

Another key respondent adulated that, “The increase in the Constituency Development Fund (CDF) has greatly enhanced climate financing at the local level. With more resources available, we have been able to invest in climate-resilient infrastructure, such as drainage systems to mitigate flooding and washed away crossing points. Additionally, the disaster component of the CDF has enabled us to respond swiftly to climate-related emergencies, ensuring that affected communities receive timely support. This funding is empowering local authorities and communities to take proactive steps in building resilience against climate change.”

One respondent remarked:

“Eastern Province has benefited from World Bank projects focusing on climate change, but government and private sector engagement remains limited.”

The high awareness of carbon pricing aligns with global trends where emissions trading schemes and carbon trading are widely promoted as a primary climate mitigation tool. Zambia’s Eastern Province, can be linked to prior engagement with World Bank projects like the Zambia Integrated Forest Landscape Project as well as COMACO which promoted the establishment of community forest managed forests with the possibility of trading them under the REDD+ projects (Ministry of Finance and National Planning, 2021b; Mulenga, 2013; ZIFL-p, 2017). This supports assertions by (Kalaba, 2016) that direct exposure to climate finance projects enhances local knowledge across between different government.

The moderate awareness of the GCF and Climate-Related Grants can be accredited to their widespread use in international climate financing, particularly in projects led by global institutions such as the World Bank and UN agencies (Atteridge et al., 2020; ZIFL-p, 2017). However, access barriers, such as complex application processes and co-financing requirements, may limit broader familiarity at the local level (Calvin et al., 2023b; Dasandara et al., 2023; Enu et al., 2021; Measham et al., 2011). In contrast, the low awareness of Climate Insurance Funds and the Least Developed Countries Fund (LDCF) are likely due to their specialized nature and limited mainstream integration into local governance. Research indicates that climate insurance mechanisms remain underdeveloped in many developing countries due to high premiums and lack of regulatory frameworks(Tirpak et al., 2014) .

The implications of these findings dictate that planners have a reliance on general public finance thereby struggle to meet the growing demands resulting from the impacts of climate change, as government budgets alone are often insufficient (Commonwealth Secretariat, 2021; Crick et al., 2019; Mulenga, 2013). Secondly, the low familiarity with international finance mechanisms means that many local authorities may be missing opportunities to access additional funding. Improving awareness through targeted training programs and partnerships with financial institutions is crucial for enabling planners to diversify funding sources and implement more comprehensive climate adaptation strategies (Kiremu et al., 2022; Rawlins and Kalaba, 2021).

5.3.2 Sources of information about climate financing options

The study revealed that Government Publications and Reports are the most common source of information on climate financing at 19.16%, followed by Conferences, Meetings, and Workshops at 17.37%. Industrial publications were the lowest source of information standing at 0.6%. The chart in figure 6 shows results about various sources of information about climate financing options.

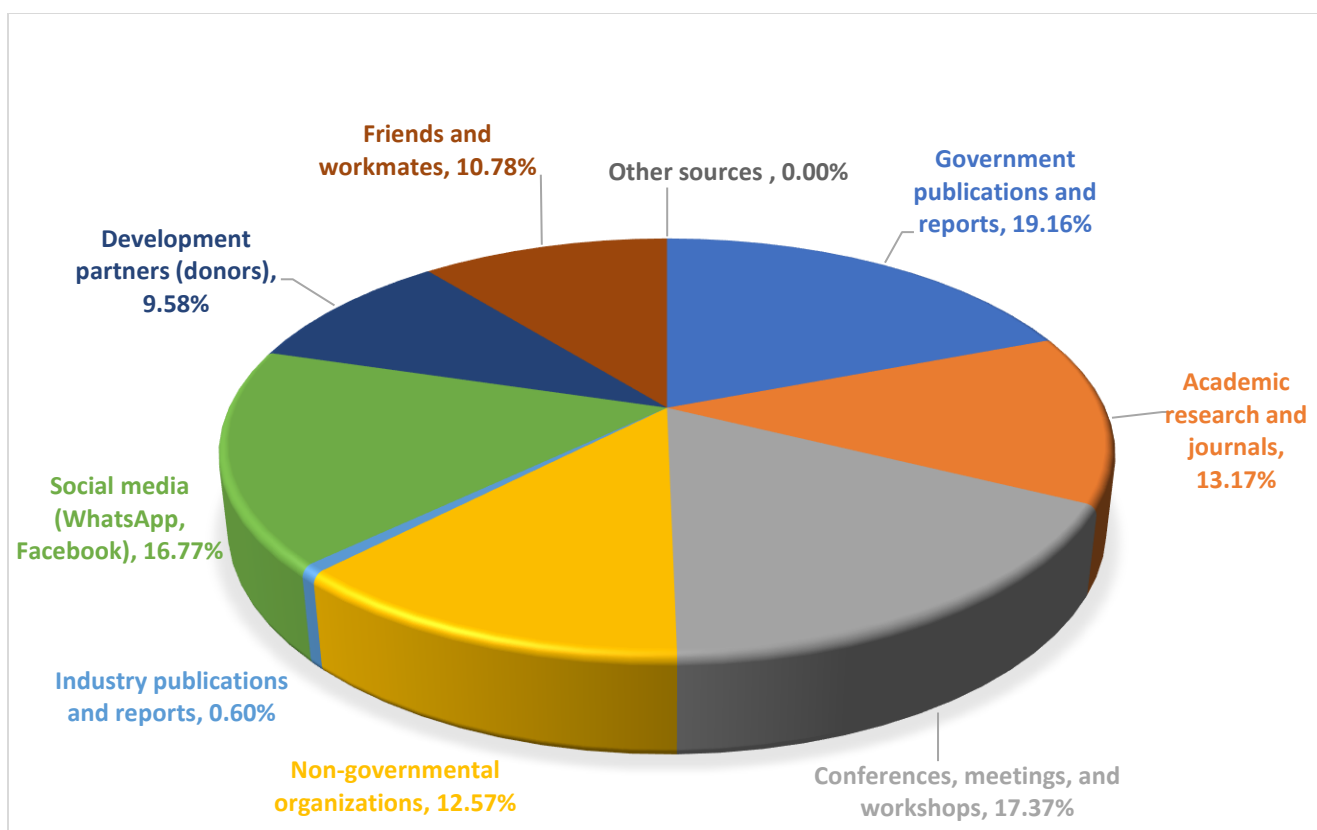


Figure 6: Sources of information

Source: field data, 2024

A respondent alluded:

"For Eastern Province, there are three main sources of climate financing, but currently, the World Bank is the primary funder of climate change activities, having invested millions of dollars. I have limited information from the government and private sector."

Another respondent added:

"Most of my information comes from reading, social media, personal training, workshops, and partnerships with climate change initiatives. However, more engagement with government and private-sector information is needed."

A respondent stated that:

"We ensure widespread awareness of the Constituency Development Fund (CDF) by advertising through social media, TV programs, and public shows. Additionally, we utilize various government forums and official occasions to engage communities and stakeholders, ensuring that everyone is informed about available funding opportunities and how they can participate in climate resilience initiatives especially disaster related."

Another respondent stated added that:

"As the National Designated Authority, we actively promote climate financing opportunities through social media, official website, TV programs, and public shows. We also leverage various government forums and official occasions to ensure widespread awareness and engagement, enabling various stakeholders to access climate funding."

The study revealed that Government Publications and Reports are the most common source of information on climate financing, followed by Conferences, Meetings, and Workshops. These finding aligns with existing research emphasizing the dominance of government-led communication in climate finance awareness ((Kiremu et al., 2022; Mulenga, 2013). Government reports often serve as primary sources of climate finance information due to their official status and accessibility, particularly for public-sector technocrats. However, the reliance on government-led communication may create a knowledge gap regarding alternative funding mechanisms, such as private-sector and international finance options (Commonwealth Secretariat, 2021; Kiremu et al., 2022). This could potentially suggest why there is limited knowledge on private sector climate financing. Meanwhile, the relative high reliance on Social Media aligns with studies emphasizes strengthened climate change education, training and public awareness including Indigenous knowledge as well as the promotion and dissemination of research findings (Gombera, 2023).

The limited use of Industry Publications (1.9%) raises concerns about the integration of private-sector perspectives in climate finance. This is in line with literature suggesting that government in conjunction with the relevant stakeholders should seek means of strategically positioning the country in order to tap finance from all the available sources (Kiremu et al., 2022).

These findings therefore suggested that government publication and events are the most trusted and effective means of disseminating information, there is need to effectively engage different forms of media of communication about climate finance to strengthen engagement with the private sector and international community thereby ensuring a more comprehensive understanding of various climate financing options (Kiremu et al., 2022). In addition, to disseminate such knowledge, it is crucial to establish a multi-stakeholder discussion platforms about adopted business models and the necessary enabling environment (Falchetta et al., 2022)

5.4 Perceptions on Climate financing and Planning nexus

The data assessed the level of integration of climate financing options into Local Authority Planning processes from 51 respondents. Data collection was done on the ordinal scale of measurement and for each of the measures highlighted, rankings were used in the assessment of perceptions on integration of climate financing in local planning among planners in local authorities. These were; not integrated at all (1), slightly integrated (2), moderately integrated (3), highly integrated (4), and fully integrated (5) on a 5- pointer Likert Scale. The findings in figure 7 revealed that majority of respondents- 41% reported moderate integration of climate financing into local planning, and 12% of respondents reported no integration at all.

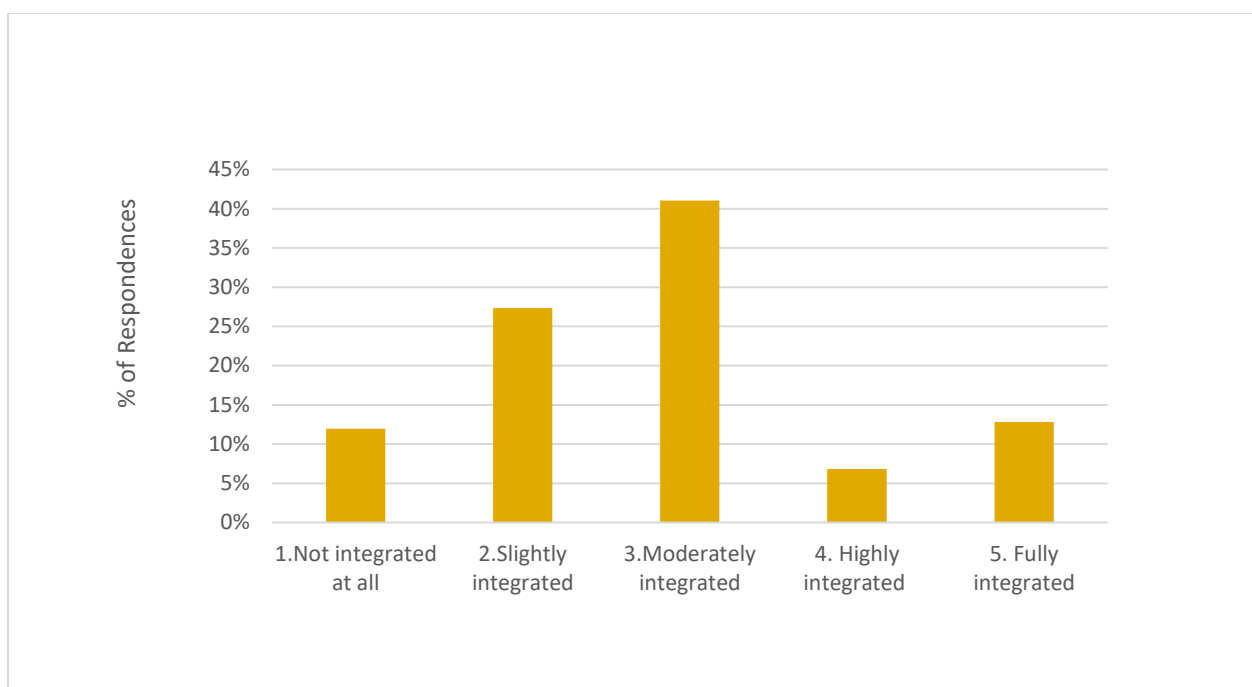


Figure 7: integration of Climate financing and Planning

Source: field data, 2024.

One respondent had this to say *"The increase in the Constituency Development Fund (CDF) has greatly enhanced climate financing at the local level. With more resources available, we have been able to invest in climate-resilient infrastructure, such as drainage systems to mitigate flooding and reforestation projects to combat deforestation. Additionally, the disaster component of the CDF has enabled us to respond swiftly to climate-related emergencies, ensuring that affected communities receive timely support. This funding is empowering local authorities and communities to take proactive steps in building resilience against climate change."*

One respondent attributed some integration success to the ZIFIL project funded by the World Bank. They explained:

"The ZIFIL project funded by the world bank funded activities related to climate change, including the preparation of Integrated Development Plans (IDPs) and formulations of Participatory Land Use Plans (PLUPs) in selected wards. However, much of the funding

was directed towards documentation rather than implementation limiting tangible outcomes.”

Another highlighted budgeting inefficiencies:

“Although climate change activities are included in budgets, the allocated funds are minimal or nonexistent, with most financing coming from external international NGOs whose priorities may not align with district plans.

A third respondent noted coordination issues:

“Partners often initiate activities without involving local technocrats, leading to weakened integration and implementation coordination.” These individual efforts are not necessarily working in solos but are all contributing to the same development outcome. But we also have replication of activities hence wasting resources.

The fourth respondent further stated that:

"The increase in the Constituency Development Fund (CDF) has greatly enhanced climate financing at the local level. With more resources available, we have been able to invest in climate-resilient infrastructure, such as drainage systems to mitigate flooding and reforestation projects to combat deforestation. Additionally, the disaster component of the CDF has enabled us to respond swiftly to climate-related emergencies, ensuring that affected communities receive timely support. This funding is empowering local authorities and communities to take proactive steps in building resilience against climate change."

The findings revealed that while 41% of respondents report moderate integration of climate financing into local planning, 12% reported no integration at all. This suggests a fragmented approach where climate financing is acknowledged but not systematically embedded within local planning frameworks. The Constituency Development Fund (CDF) has enhanced climate financing at the local level, leading to investments in climate-resilient infrastructure (Money, n.d.) and disaster response, as highlighted by respondents: “With more resources available, we have been able to invest in climate-resilient infrastructure... and respond swiftly to climate-related emergencies.” These sentiments also echo the Minister of Local Government and Rural Development panel discussions at the **2023**,

COP28 Ministerial Meeting on Urbanization and Climate Change where he stated that the 2024 National Budget had increased CDF allocation to K30.8 million (about \$1.6m) of which 5% is for disaster responses such as flooding, and 60% allocated to community projects and infrastructure development.

However, inefficiencies persist, with another respondent stating that despite climate change activities being included in budgets, the allocated funds are minimal or nonexistent. This aligns with literature indicating that while climate finance options exist, local implementation often suffers from inadequate allocation and prioritization (Dasandara et al., 2023; Gombera, 2023; Measham et al., 2011; Uittenbroek et al., 2013).

The findings also highlighted external funding dependencies, particularly on the World Bank's ZIFIL project, which primarily supported planning and documentation rather than implementation. A respondent noted, "Much of the funding was directed towards documentation rather than implementation, limiting tangible outcomes." This supports studies emphasizing that while climate financing is increasingly available, actual utilization at the local level remains constrained due to inadequate alignment of global climate finance frameworks with local development priorities. bureaucratic and administrative challenges(Gombera, 2023; Lazurko, 2022; Lundsgaarde et al., 2018; Measham et al., 2011; World bank, 2010).

Additionally, about 57% respondents, also believed that climate financing options are not sufficient to meet local needs highlighting a persistent gap between funding availability and local requirements. The weak coordination between development partners and local authorities leads to inefficiencies, as noted by a respondent who stated that funding Partners often initiate activities without involving local technocrats, leading to weakened integration and implementation coordination. This corroborates findings that fragmented governance and lack of institutional alignment hinder effective climate finance utilization (Coirolo, 2021; Crick et al., 2019; Enu et al., 2021; Kiremu et al., 2022).

5.4.1 The level of integration of climate financing options into planning in local authorities

This section looked at the number of planners who have accessed and used the various climate financing options in their planning at local level. The findings in figure 8 below indicated that a bigger percentage of planners reported having integrated climate related grants (22.2 %), while green bonds (0%), climate insurance products (1.9%) and least developed countries (1.9%) had the least responses of integration.

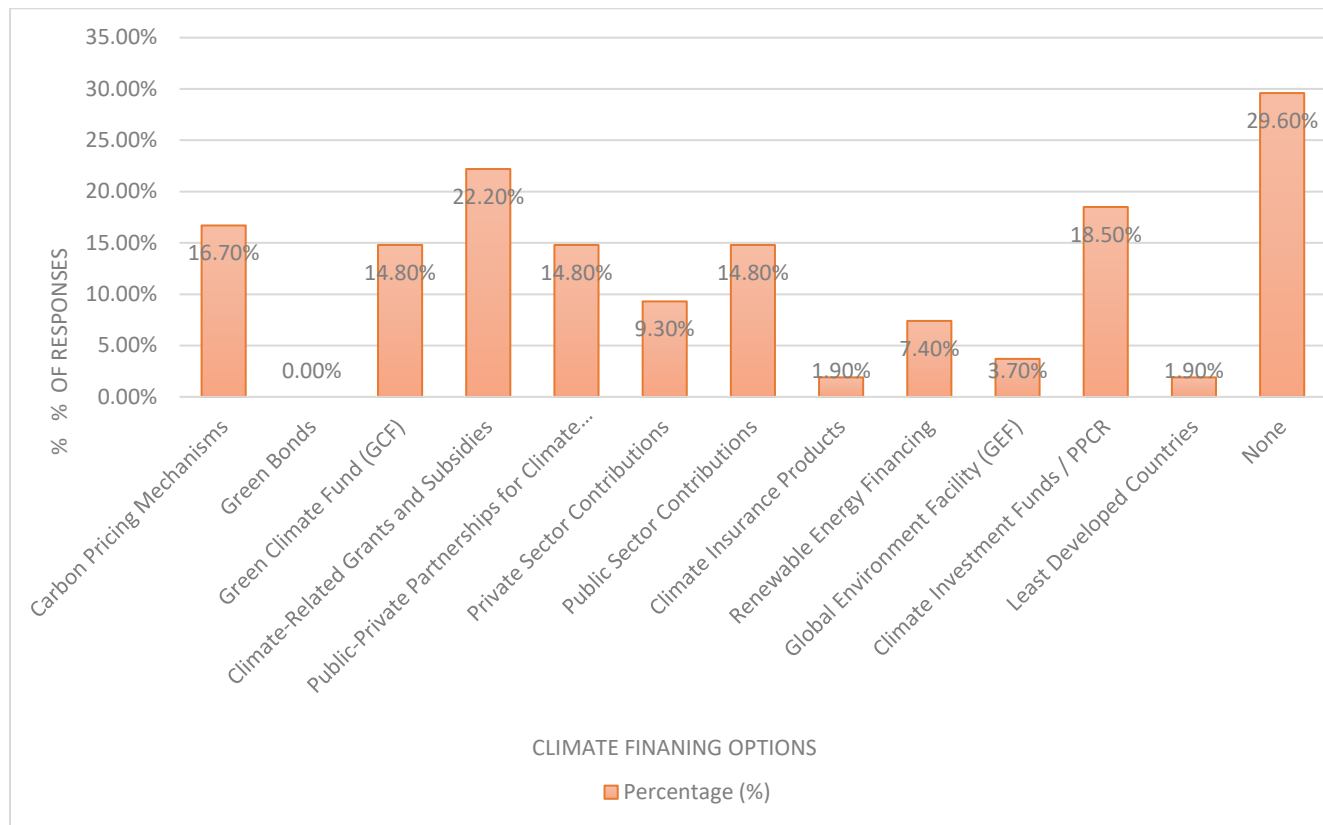


Figure 8: integration according to the type of climate financing option

Source: field data, 2024

The findings indicated a bigger percentage of respondents reported no use of any climate financing option, highlighting significant gaps in accessibility and awareness. However, the minimal use of Green Bonds contradicts global trends where bond financing is increasingly recognized as a key tool for sustainable development (Calvin et al., 2023b; Commonwealth Secretariat, 2021). This suggested that local authorities may lack the financial literacy or institutional capacity required to issue and manage Green Bonds

effectively level (Calvin et al., 2023b; Dasandara et al., 2023; Enu et al., 2021; Measham et al., 2011; Tirpak et al., 2014). A respondent noted the allocated funds for climate action is minimal or nonexistent,” reinforcing research that highlights funding inefficiencies as a barrier to climate finance integration.

Furthermore, the low uptake of Climate Insurance Products and Least Developed Countries (LDC) funding indicated limited accessibility or perceived relevance, consistent with findings that insurance-based mechanisms remain underdeveloped in many regions due to affordability and regulatory challenges(Gombera, 2023). Additionally, reliance on external donors rather than domestic financing suggests a vulnerability to shifting international priorities. A respondent noted, “Most financing comes from external international NGOs whose priorities may not align with district plans,” emphasizing concerns about misalignment between local needs and donor-driven funding structures.

5.4.2 Level of integration climate funds according various planning documents

The section assessed the level of integration of climate funds into various planning documents such as the IDP, Implementation Plan and Sector Plans using a Likert scale. According to table 1 findings reviewed that most respondents report "Rarely" receiving funds across most planning documents, particularly for District implementation Plans and IDPs.

Planning Document	% level of integration climate funds into various planning documents			
	More Frequently (%)	Frequently (%)	Rarely (%)	Never (%)
Integrated Development Plan (IDP)	9.8	25.49	58.82	5.88
District Implementation Plan	4	24	58	14
Sector Plans	6.67	22.22	55.56	15.56

Table 1: level of integration climate funds into various planning documents

The findings revealed that most respondents report "Rarely" receiving funds across most planning documents, particularly for District implementation Plans and IDPs. This aligns with research by Gombera (2023 and Zhang (2007) highlighting that local governments often struggle with funding predictability across most planning documents, leading to gaps in plan implementation. A respondent emphasized, “Although climate change activities are included in budgets, the allocated funds are minimal or nonexistent,” reinforcing concerns about inadequate budget allocations. The issue of "Never" receiving funds for some District Plans further supports literature indicating that local government budgeting tends to favor sector-specific projects over comprehensive development strategies, particularly in long-term and comprehensive plans like IDPs and District implementation Plans.(Funder and Dupuy, 2022; Lundsgaarde et al., 2018, 2018). The relatively higher frequency of funding in Sector Plans could indicate targeted interventions, possibly due to donor preferences or clear project-specific outcomes. Improving resource allocation frameworks, ensuring more predictable financing streams, and aligning funds with local priorities are essential steps

for enhancing the effectiveness of planning efforts. The section below elaborates more on climate finance integration according to Sector Plans.

5.4.3 Perception of Integration of Climate finance according to sector

The research findings revealed a varied level of integration to climate finance across key development sectors within local authorities. Agriculture (39.1%), Water (38.4%), and Forestry (37.6%) emerged as the top three sectors with the highest perceived frequency of access to climate finance, indicating limited comprehensive accessibility and integration as highlighted in figure 9.

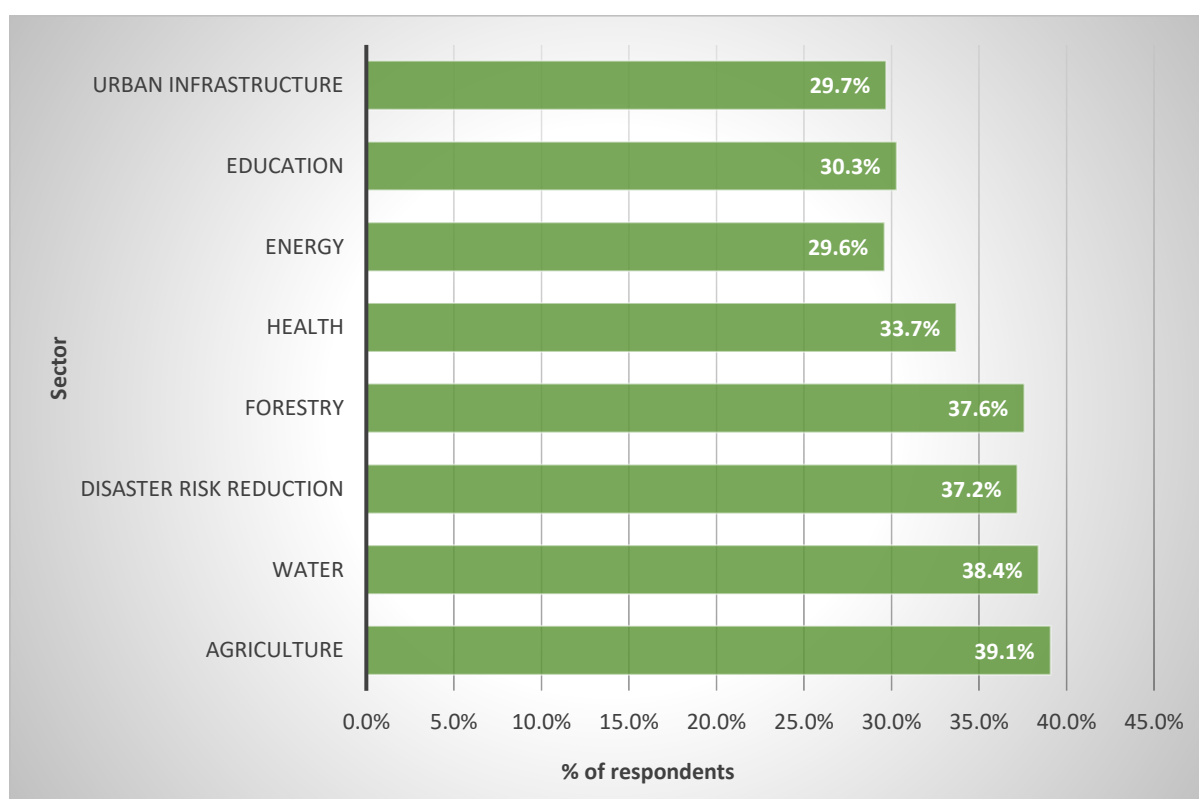


Figure 9: Access to Climate finance according to sector

This aligned with research emphasizing that agriculture and waters sector often attracts more climate financing due to their direct role in mitigation and adaptation, as well as from targeted climate finance such as REDD+ and the Green Climate Fund (Abbass et al., 2022; Kalaba, 2016; Ministry of Finance and National Planning, 2021b). According to the FAO

(2021), agriculture is a primary focus of climate financing in Sub-Saharan Africa due to its vulnerability to climate change impacts and its centrality to livelihoods and food security. One respondent highlighted; *Our priorities across sectors are demand-driven, as we do not initiate programs in our capacity as, and We have identified four priority sectors namely Energy, Water, Agriculture, and Forestry. Within each of these sectors, there are priority subsections that align with stakeholder needs and strategic national objectives.*

However, the lack of dominant access across sectors suggests structural barriers, such as funding delays and complex eligibility requirements (Calvin et al., 2023a; Dasandara et al., 2023; Gombera, 2023; Uittenbroek et al., 2013). It was notable that Energy (29.6%), Urban Infrastructure (29.7%), and Education (30.3%) were among the least frequently funded sectors. This is somewhat paradoxical, especially for energy, which is a core pillar of climate mitigation. However, the results may reflect that most energy financing—particularly for renewable energy—is channeled at national or private sector levels, rather than through local government structures (UNEP FI, 2021) (Money, 2023). This uneven distribution highlighted the need for improved alignment of funding mechanisms with localized sectoral priorities. Existing literature supports this, emphasizing that equitable and needs-based allocation of climate funds is essential to ensure sustainability (Agrawala et al., 2011). The consistent "Rarely" responses Across all sectors such as water and urban infrastructure suggest challenges in aligning funding with sectoral needs and underscore a disconnection between available climate financing mechanisms and their systematic incorporation into planning frameworks. The section below outlines some of the challenges faced in accessing climate finance.

5.5 Challenges in accessing climate finance at local level.

Based on the analyzed data, several key barriers to accessing and utilizing climate financing in planning projects and processes were reviewed. The most significant challenges identified were limited availability of funds (53.2%) and the lack of awareness and understanding of climate finance, rated by 50.6% of respondents as highlighted in figure 10.

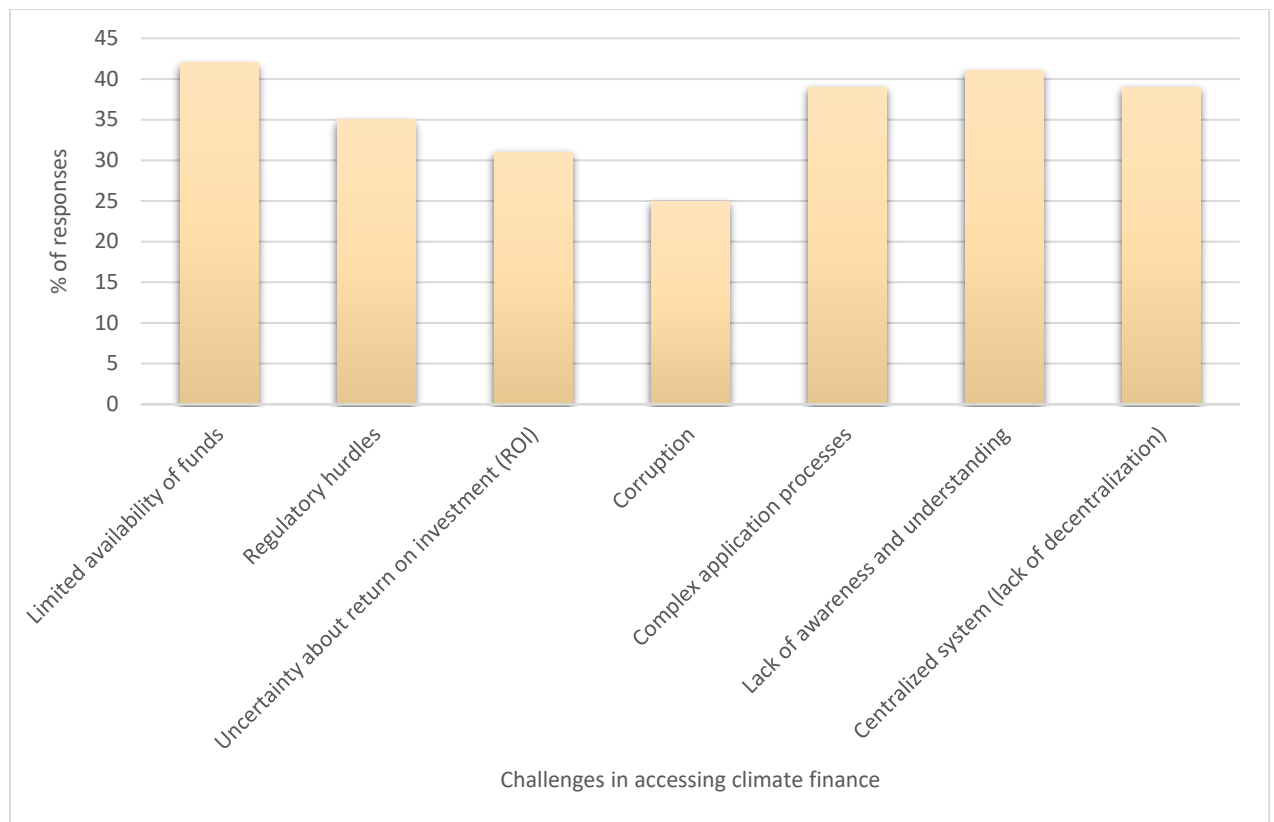


Figure 10: Challenges in accessing climate finance at local level.

Limited availability of funds being identified as a significant challenge aligned with both local and global concerns over climate finance allocation to developing countries (Dasandara et al., 2023; Gombera, 2023; Kalaba, 2016; Measham et al., 2011; Zhang, 2007). The United Nations Environment Programme (UNEP) notes that the gap in climate finance for developing nations, particularly at subnational levels, is widening. In Zambia, like in many other developing countries, local authorities often rely on national government transfers or donor funds, which are either insufficient or not readily accessible, thereby limiting their ability to implement climate-resilient project (Adenle et al., 2017; Dasandara et al., 2023; Gombera, 2023; Kalaba, 2016; Measham et al., 2011; Zhang, 2007). One respondent also echoed these concerns by highlighting the erratic nature of fund availability. with one stating, “Funds are only accessed when there is a disaster; climate financing is not typically prioritized,”

The second most frequently cited barrier was the lack of awareness and understanding of climate finance, rated high by 50.6% of participants. A respondent affirms this by stating

that, “*There is little information on how to apply for funds, making the process very difficult to understand,*” reinforcing the impact of awareness gaps. This confirmed with, Adenle et al. (2017), Dasandara et al., (2023) and Gombera (2023) who emphasized that many local planners and decision-makers are unaware of climate financing opportunities or lack the technical knowledge to develop bankable proposals. Without adequate training and capacity building, district planning officers and planners generally cannot fully engage with or benefit from climate finance options, resulting in a disconnect between available funds and local needs.

Another prominent challenge was the complexity of application processes, with 47.0% of respondents citing it as a major barrier. Climate finance sources such as the Green Climate Fund (GCF) or Adaptation Fund often require rigorous documentation, long-term impact evaluations, and sophisticated financial planning. These technical demands pose significant hurdles for district planners who may lack specialized skills or support staff to complete applications successfully. Nakhooda et al. (2013) similarly observed that while international climate funds are available, they are not “fit for local delivery” without simplification or intermediary support mechanisms.

These research underscores that access to climate finance at the local level is hindered by a combination of structural, institutional, and technical barriers. Addressing these issues requires not only increased funding but also reforms to decentralize financial systems, build local capacity, and streamline application processes.

5.6 Challenges in Climate financing and planning nexus.

The integration of climate finance into planning processes is hindered by a variety of challenges, as outlined in figure 9

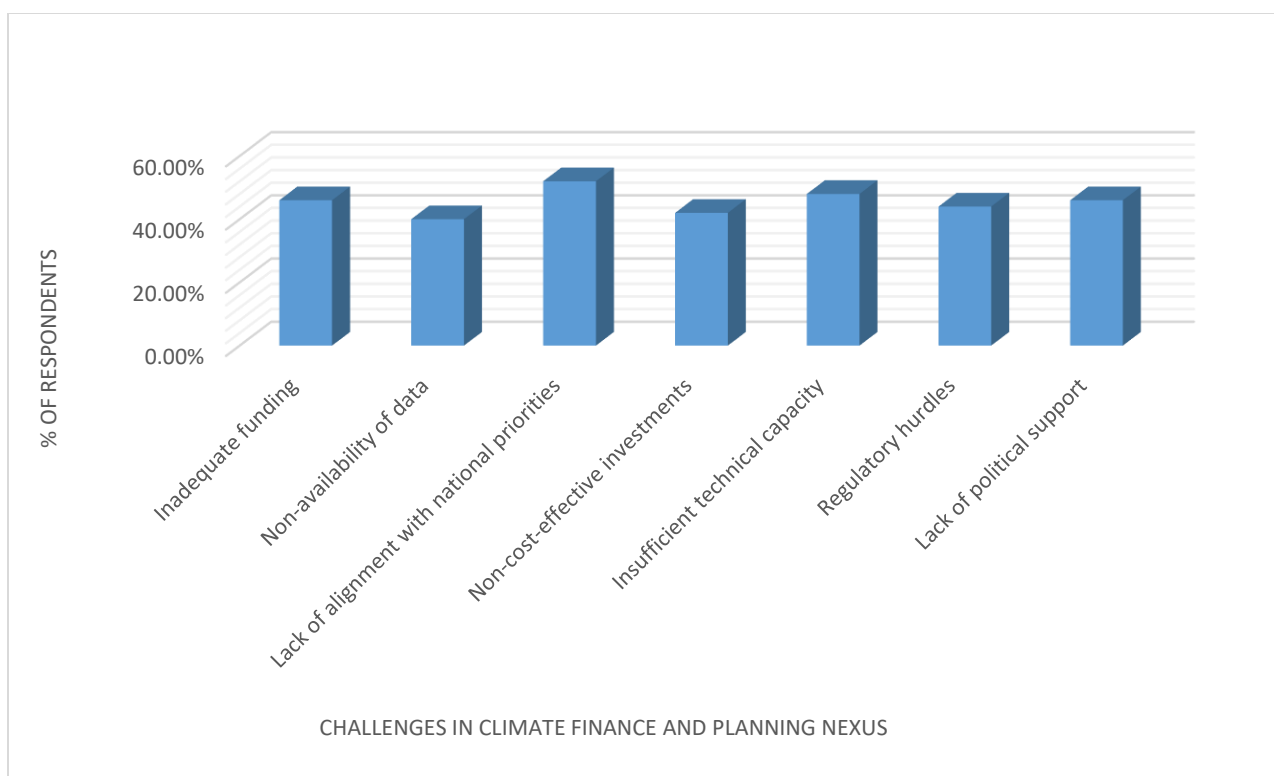


Figure 11: Challenges in Climate financing and planning nexus.

Source: field data, 2024.

The study reveals significant insights into the perceived challenges hindering climate financing and planning nexus in local authority. Among the key barriers, *centralized systems (58%)* emerged as the most significant challenge, followed closely by *lack of alignment with national priorities (52%)*, and insufficient *technical capacity (48%)*,

One respondent highlighted the practical difficulties of accessing funds, stating that:

"Locally, it's not easy to access funds. Normally, funds are only accessed during disasters such as flooding or drought. Climate financing is not prioritized. For international funds, local entities face challenges due to bureaucracy, which affects both NGOs and local governments."

Respondents also highlighted the role of political priorities in shaping climate finance outcomes. As one respondent stated:

"We have a challenge where political development results are needed immediately, while climate change interventions take longer to yield visible outcomes. Politicians tend to prioritize developmental activities that produce immediate results, such as infrastructure development."

one respondent noted:

"Most people don't know or understand planning documents like IDPs. "hence integration is often misaligned to these local documents

Another respondent said;

Challenges in accessing climate financing include complex application processes, stringent requirements, and limited awareness. The flow of funds remains insufficient, restricting the implementation of critical projects. Additionally, there is a lack of capacity and technical expertise to effectively integrate and align local climate finance with national priorities e.g CDF, creating a significant gap. Moreover, the absence of a robust tracking mechanism hinders the monitoring of funding flows and project outcomes.

The research findings reveal that centralized systems and lack of alignment with national priorities are the most significant barriers to integrating climate finance into planning. These findings align with existing literature, which highlights that rigid, top-down financial structures limit local access to climate funds, hindering effective adaptation and mitigation efforts ((Adenle et al., 2017; Dasandara et al., 2023; Funder and Dupuy, 2022; Gombera, 2023; Mungai et al., 2022; Price, 2021b). Similarly, studies on Sri Lanka's climate finance landscape confirm that a misalignment between national policies and international climate funding priorities creates inefficiencies in fund allocation (Dasandara et al., 2023). Respondents echoed these concerns, with one stating that Climate finance decisions are made at higher levels with little local input, reinforcing the impact of centralized governance. Another respondent noted that Funds often prioritize global goals over national development needs reflecting the misalignment issue even more. Addressing these challenges requires decentralizing climate finance mechanisms and ensuring that funding priorities align with local and national development goals (Decentralisation Secretary,

2023; Measham et al., 2011). Without such reforms, climate finance will continue to face structural inefficiencies, limiting its impact on sustainable development.

5.7 Suggested improvements for integrating climate financing into local planning

One respondent had this to say *“We need policies that are relevant at the local level. National-level adaptation strategies may not align with specific local contexts, leading to a misallocation of funding.”*

Respondents provided additional insights that align with the data and the broader literature. One respondent emphasized the importance of aligning planning documents across ministries to improve coherence in planning and financing:

“It’s important to have planning documents speaking to each other. For example, the Ministry of Local Government and Ministry of Green Economy should align their documents with IDPs to ensure that climate issues are prioritized at the local level.”

Another responded recommended:

"Capacity building is crucial to equip stakeholders with the knowledge and skills needed to integrate climate aspects into planning. IDP development or review should not happen in isolation; climate priorities must be included and linked to key funding mechanisms like the CDF, to help communities access climate finance. There is a gap between funders and planners, which makes coordination difficult. We also need financial literacy programs at the local level."

The most critical recommendation suggested include enhanced training and capacity building and the development of clearer guidelines. These findings align with research showing that financial accessibility is often hindered by inadequate technical expertise and the complexity of climate finance procedures (Coirolo, 2021; Funder and Dupuy, 2022; Measham et al., 2011; Mungai et al., 2022). Literature underscores the importance of equipping stakeholders with technical knowledge and skills to effectively manage and integrate climate finance (Coirolo, 2021; Funder and Dupuy, 2022; Gombera, 2023; Measham et al., 2011). For instance, the Climate Policy Initiative (2020) emphasizes that

capacity-building initiatives are foundational to addressing climate change at both national and local levels.

Additionally, the literature supports that simplification of climate finance procedures, including clearer guidelines and increased access to information, improves the efficiency of fund allocation and utilization (Tirpak et al., 2014). To address these issues, a multi-faceted approach that combines technical training, transparent processes, and stakeholder engagement is necessary. Without these interventions, climate finance will remain underutilized, limiting its impact on sustainable development and climate adaptation initiatives.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The nexus between climate financing and planning in local authorities is critical for achieving sustainable development and enhancing climate resilience. This study highlighted that while local authorities recognize the importance of climate financing, they face significant challenges in the integration of climate finance with planning at subnational level. These challenges have led to inadequate nexus between climate financing and planning and addressing these barriers requires capacity building, streamlined funding mechanisms, and improved multi-stakeholder coordination. Integrating climate financing into local planning frameworks and enhancing transparency in fund management are essential to maximize its impact. Ultimately, empowering local authorities to access and utilize climate finance effectively will foster adaptive and inclusive development, ensuring communities are better equipped to mitigate and adapt to climate change impacts, advancing sustainable development and resilience. These findings also provide a robust foundation for policy interventions aimed at bridging the gaps between financing and planning to achieve climate-resilient urban development.

6.2 Recommendations

To strengthen the integration of climate financing in local planning, the following strategies are key:

- i. **Increase Funding Commitments:** Scaling up funding levels is essential for meeting the adaptation and mitigation needs of eastern province and Zambia at large thereby achieving global climate goals. Therefore, Ministry of Finance and National Development, and Ministry of Green Economy should increase funding and fulfill their commitments to provide climate finance for IDPs and LAPS in local authorities,
- ii. **Capacity Building:** Ministry of Local Government and Rural Development, Ministry of Green Economy, Ministry of Finance and National Development and National Designate Authority should implement training programs and awareness campaigns to enhance stakeholders' understanding of climate financing options and how to effectively integrate them in local planning. Use of digital tools like

social media and community networks for effective information dissemination can be spearheaded by Ministry of Information.

- iii. Simplification and Accessibility: Ministry of Local Government and Rural Development, Ministry of Green Economy, Ministry of Finance and National Development and National Designate Authority must Streamline funding processes by simplifying eligibility criteria, standardizing application templates, and providing technical assistance.
- iv. Holistic Integration: Ministry of Local Government and Rural Development, and Ministry of Green Economy, Ministry of Finance and National Development should ensure that all local authorities have embed climate financing into Integrated Development Plans, and there is sustainable funding therein.
- v. Strengthening governance and institutional frameworks: Local Authorities and District Administration to enhance coordination among stakeholders, streamlining funding options. Central government and relevant ministry to promote decentralized governance and localized financing mechanisms to address community-specific needs efficiently.
- vi. Raising awareness: Ministry of Local Government and Rural Development, Ministry of Information, Ministry of Finance and National Development and National Designate Authority to raising awareness through multisectoral and decentralized information systems by diversifying sources beyond government reports and conferences so as to enhance access to holistic data.

6.3 Suggestions for Future Research

- i. Investigate how the existing governance structures impact the accessibility and utilization of climate financing at the local level.
- ii. Explore tailored approaches to integrating climate finance in underfunded sectors, assessing their impact on sectoral resilience and development.
- iii. Evaluate the potential of underutilized mechanisms such as Green Bonds, Climate Insurance Products, and Renewable Energy Financing Funds in driving sustainable urban and regional planning.

- iv. Study the influence of political support, regulatory frameworks, and governance systems on the equitable distribution and effectiveness of climate financing in developing regions.

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APPENDICES

Appendix A: Interview guide for the key informants from Provincial Offices

1. Introductions

I am a student at the University of Zambia doing my Masters of Spatial Planning. As part of my research course, I am requested to collect data and write a dissertation on *Climate financing and the planning nexus in Zambia*. I am kindly asking if you could participate in this interview. Kindly note that your participation is voluntary and your identity shall be treated confidential and anonymous. Proceeding to participate in this interview means you have voluntarily agreed. The survey takes less than 20 minutes. Thank you

INSTITUTION:

SEX:

2. Background Information:

1. Describe your current role and responsibilities within the institution?
2. Duration in your current position
3. Knowledge about climate change. – narrow it to impacts in Zambia and eastern province

3. Awareness and Understanding Climate Financing:

1. Levels of familiarity with climate financing options available in Zambia?
2. Mention the options you are familiar with and sources
3. How did you know about climate finance (e.g., government workshops, international organizations, or internal briefings)?
4. Do you have any climate financing program in your local authority. What are they?

4. Integration of Climate Financing into Planning Processes

1. How do u mainstream climate change in your planning documents at your institution? -state the plans
2. In your opinion, how well are climate financing mechanisms integrated into planning documents, e.g. state the documents((IDPs) or Local Area Plans, sector plans?
 1. Examples of successful collaborations or projects where climate financing was implemented

6. Challenges and Opportunities:

1. State the Top three main challenges faced in integrating climate considerations into planning processes?
2. Describe any barriers between the objectives of climate funds and the practical implementation of local development plans?
- 3.

8. Recommendations:

1. What opportunities or best practices could improve the effective nexus of climate financing and planning nexus in your district?
2. State any specific policy or institutional changes that could facilitate better integration and coordination between the two?

The end

Thank the interviewee for their time and participation.

NB: Remember to adapt the questions as needed based on the expertise and focus areas of the interviewee

Appendix B: Interview guide for the key informants- Ministry of Local Government and Rural Development

I am a student at the University of Zambia doing my Masters of Spatial Planning. As part of my research course, I am requested to collect data and write a dissertation on *Climate financing and the planning nexus in Zambia*. I am kindly asking if you could participate in this interview. Kindly note that your participation is voluntary and your identity shall be treated confidential and anonymous. Proceeding to participate in this interview means you have voluntarily agreed. The survey takes less than 20 minutes. Thank you

1. . Background Information:

3. Describe your current role and responsibilities within the Ministry of Local Government and Rural Development?
4. Duration in your current position
5. Knowledge about climate change. – narrow it to impacts in Zambia and eastern province
6. How does your department contribute to climate action and development planning at the local level?

1. Understanding Local Climate Financing Landscape

1. What sources of climate finance are accessible to local governments in Zambia?
2. How are funds allocated for climate mitigation and adaptation at the district and local level?
3. Are there specific financing mechanisms (e.g., grants, loans, partnerships) that have been particularly effective for rural or urban climate projects?

1. Integrating Climate Financing and Local Planning

1. How do local governments incorporate climate financing into development planning processes?

2. What role does the MLGRD play in ensuring that local climate action plans align with national priorities and financing options?

1. **Challenges and Barriers**

1. What challenges do local governments face in accessing climate finance for rural and urban development projects?
2. Are there any capacity gaps (e.g., technical, financial, institutional) that hinder effective use of climate finance at the local level?
3. How do delays or inefficiencies in climate finance allocation affect local development plans?

1. **Policy and Governance**

1. How does the Ministry support local governments in aligning climate finance and planning with national policies, such as Zambia's NDCs?
2. Are there policy or governance barriers that limit the effectiveness of climate financing at the local level?

1. **Recommendations**

1. What reforms or new policies would you recommend to strengthen the climate financing and planning nexus in rural and urban areas?
2. What are the key priorities for improving the integration of climate finance into local development planning?

The end

1. Thank the interviewee for their time and insights.

Appendix C: Interview guide for the key informants- NDA

Introduction:

Good [morning/afternoon], and thank you for agreeing to participate in this interview. I am conducting research on the nexus between climate financing and planning. The purpose of this interview is to understand your insights on climate financing options, their integration into planning processes, and the barriers that exist in linking the two. The interview will take about [insert time]. Your responses will be treated with confidentiality, and your identity will not be disclosed in the report unless you consent.

Section A: Background Information

1. Can you briefly describe your role and responsibilities in the Institution?

Section B: Awareness of Climate Financing Options

3. What climate financing options are you aware of? (e.g., international funds, national budgets, private sector investment, etc.)
4. Are there specific funding opportunities for climate-related projects that local authorities has accessed or explored?
5. How do you ensure the public stay informed about climate financing opportunities?

Section C: Integration of Climate Financing into Planning

7. Are there any existing frameworks, policies, or guidelines that help integrate climate financing into local planning? If yes, could you elaborate?
8. Can you share examples of projects where climate financing has been successfully been implemented and integrated into the planning frameworks like IDPs?

Section D: Barriers and challenges

9. What challenges does local government face in accessing climate financing esp from your institution?

10. Are there institutional, technical, or resource-related barriers to integrating climate financing into planning?

11. Do you think the current policies and structures adequately accommodate climate financing considerations in local authorities? Why or why not?

Section E: Recommendations and Closing

13. What strategies do you think can enhance awareness of climate financing among planners?

14. How can the integration of climate financing into planning processes be improved at the local government level?

15. Is there anything else you would like to share regarding the nexus between climate financing and planning?

Conclusion:

Thank you for your time and insights. Your input is invaluable to this research. If needed, may I contact you for clarification or follow-up questions?

Appendix D: Questionnaire

Climate financing and the planning nexus in Zambia

I am a student at the University of Zambia doing a Masters of Spatial Planning. As part of my Research course, I am requested to collect data and write a desertation of ***Climate Financing and Planning nexus in Zambia***. I request if you could participate in this survey. kindly note that your participation is voluntary and your identity shall be treated confidential and anonymous. this survey takes less tha **5 minutes** to complete. Thank you for your participation.

Untitled section

1. Name of Local authority that you work from

2. Type of planner that you are:

Mark only one oval.

- ☐ Environmental planner
- ☐ Social economic planner
- ☐ Physical planner
- ☐ Health planner
- ☐ Education planner

3. Sex

Mark only one oval.

- ☐ Male
- ☐ Female

Climate Financing Options and Levels of Awareness

4. 1. How familiar are you with climate financing options available for addressing climate change mitigation and adaptation?

Mark only one oval.

	1	2	3	4	5	
Not	☐	☐	☐	☐	☐	Very familiar

5. 2. If yes, Which of the following climate financing options are you aware of? (Tick all what apply)

Tick all that apply.

- ☐ Carbon pricing mechanisms (e.g., carbon tax, cap-and-trade, carbon trade)
- ☐ Green bonds
- ☐ Green Climate Fund (GEF)
- ☐ Climate-related grants and subsidies
- ☐ Public-private partnerships for climate projects
- ☐ Private sector funds
- ☐ National climate (Public sector) funds
- ☐ Climate insurance products
- ☐ Renewable energy financing mechanisms
- ☐ Global Environment Facility (GEF)
- ☐ Climate Investment Funds / Pilot Program for Climate Resilience (PPCR)
- ☐ Least Developed Countries Fund (LDCF)
- ☐ non

6. 3. In your opinion, are the available climate financing options sufficient to meet the needs of your local authority? (Yes/No)

Mark only one oval.

- ☐ Yes
☐ No
☐ Not sure

7. 4. What sources do you typically rely on to stay informed about climate financing options? (tick all what applies)

Tick all that apply.

- ☐ Government publications and reports
☐ Academic research and journals
☐ Conferences, meetings and workshops
☐ Non-governmental organizations (NGOs) and advocacy groups
☐ Industry publications and reports
☐ Social media (whatsapp, facebook, X, etc)
☐ Development partners (donors)
☐ Friends and workmates
☐ Other (please specify): _____

Integration of Climate Financing into Planning Processes

8. 5. Extent are climate financing options integrated into your local authority's planning processes (Sector plans) ?

Mark only one oval.

- | | | | | | | |
|-----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Not | ☐ | ☐ | ☐ | ☐ | ☐ | Fully integrated |

9. 6. Frequency of reception of funds to support climate interventions in planning documents such as Integrated Development plan, Sector plans, District implementation Plans

Mark only one oval per row.

	More frequently	Frequently	Rarely	Never
IDPs	☐	☐	☐	☐
District implementation Plan	☐	☐	☐	☐
Sector plans	☐	☐	☐	☐

10. 7. Which climate financing option have you integrated before in the planning processes?

Tick all that apply.

- ☐ Carbon pricing mechanisms (e.g., carbon tax, cap-and-trade, carbon trade)
- ☐ Green bonds
- ☐ Green Climate Fund (GEF)
- ☐ Climate-related grants and subsidies
- ☐ Public-private partnerships for climate projects
- ☐ Private sector
- ☐ Public sector
- ☐ Climate insurance products
- ☐ Renewable energy financing mechanisms
- ☐ Global Environment Facility (GEF)
- ☐ Climate Investment Funds / Pilot Program for Climate Resilience (PPCR)
- ☐ Least Developed Countries Fund (LDCF)
- ☐ None

11. 8. How frequent in a **year** does your local authority access climate finance for any of its projects?

Mark only one oval.

- ☐ Never
- ☐ Rarely (1 to 3 times a year)
- ☐ Sometimes (4 to 7 times a year)
- ☐ Often (8 to 10 times a year)
- ☐ Always

12. 9. Kindly rate the access to climate finance for each of the following sectors below? (Select all that apply)

Mark only one oval per row.

	Always	Often	Sometimes	Rarely	Never
Energy	☐	☐	☐	☐	☐
Agriculture	☐	☐	☐	☐	☐
Urban infrastructure	☐	☐	☐	☐	☐
Water	☐	☐	☐	☐	☐
Disaster risk reduction	☐	☐	☐	☐	☐
Education	☐	☐	☐	☐	☐
Forestry	☐	☐	☐	☐	☐
Health	☐	☐	☐	☐	☐

Barriers in Climate Financing and Planning

13. 10. Kindly rate the following barriers to **accessing and utilizing climate financing** in planning projects and processes?

Mark only one oval per row.

	High	Medium	Low
Limited availability of funds	☐	☐	☐
Regulatory hurdles	☐	☐	☐
Lack of Political support	☐	☐	☐
Uncertainty about return on investment	☐	☐	☐
Corruption	☐	☐	☐
Complex application processes	☐	☐	☐
Lack of awareness and understanding	☐	☐	☐
Centralized system (lack of decentralization)	☐	☐	☐

14. 11. Kindly rate the intensity of the following challenges in integrating climate finance options in planning processes and frameworks?

Mark only one oval per row.

	High	Medium	Low
Inadequate institutional capacity	☐	☐	☐
Non availability of funding sources	☐	☐	☐
Lack of alignment between funding criteria and local priorities	☐	☐	☐
Non cost-effectiveness	☐	☐	☐
Lack of Potential for scalability and long-term impact	☐	☐	☐
Insufficient local expertise	☐	☐	☐
Regulatory hurdles	☐	☐	☐
Lack of Political support	☐	☐	☐
Centralized system (lack of decentralization)	☐	☐	☐

Opportunities Presented by Climate Financing

15. 12. What improvements do you suggest to bridge the gap between climate financing and planning in your local authority?

Tick all that apply.

- ☐ Enhanced training and capacity-building for planners
- ☐ Simplification of climate finance application processes
- ☐ Better coordination between finance and planning departments
- ☐ Development of clearer guidelines for integrating climate finance into planning
- ☐ Increased access to information about available financing mechanisms
- ☐ Engagement with external experts or consultants to support financing applications
- ☐ Establishment of dedicated teams or units to handle climate financing
- ☐ Improved alignment of funding criteria with local planning priorities

Thank you for your time and valuable input!

This information will help assess the effectiveness of climate financing in supporting urban and regional planning efforts

Appendix E: Ethical clearance -letter of Approval



THE UNIVERSITY OF ZAMBIA DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

Great East Road Campus | P.O. Box 32379 | Lusaka10101 | Tel: +260-211-290 258/291 777
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APPROVAL OF STUDY

IORG No. 0005376
NASRECREC IRB No. 00006465
REF NO. NASREC: 2024-APR-038

4th November, 2024

Ms. Natasha Ndumba
The University of Zambia
P.O. Box 32379
LUSAKA

Dear Ms. Ndumba

RE: "CLIMATE FINANCING AND PLANNING NEXUS IN EASTERN PROVINCE OF ZAMBIA"

Reference is made to your protocol captioned above. The NASREC resolved to approve this study and your participation as Principal Investigator for a period of one year.

REVIEW TYPE	ORDINARY REVIEW	APPROVAL NO. NASREC-2024-APR-038
Approval and Expiry Date	Approval Date: 4 th November, 2024	Expiry Date: 3 rd November, 2025
Protocol Version and Date	Version - Nil.	3 rd November, 2025
Information Sheet, Consent Forms and Dates	• English.	To be provided
Consent form ID and Date	Version - Nil	To be provided
Recruitment Materials	Nil	Nil
Other Study Documents	Questionnaire.	

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

CONDITIONS OF APPROVAL

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to NASREC within 5 days.
- All protocol modifications must be approved by NASREC prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to NASREC within 5 working days.
- All recruitment materials must be approved by NASREC prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. NASREC will only approve a study for a period of 12 months.
- It is the responsibility of the PI to renew his/her ethics approval through a renewal application to NASREC.
- Where the PI desires to extend the study after expiry of the study period, documents for study extension must be received by NASREC at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Documents received within 30 days after expiry will be labelled "late submissions" and will incur a penalty fee of K500.00. No study shall be renewed whose documents are submitted for renewal 30 days after expiry of the certificate.
- Every 6 (six) months a progress report form supplied by The University of Zambia Natural and Applied Sciences Research Ethics Committee as an IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- When closing a project, the PI is responsible for notifying, in writing or using the Research Ethics and Management Online (REMO), both NASREC and the National Health Research Authority (NHRA) when ethics certification is no longer required for a project.
- In order to close an approved study, a Closing Report must be submitted in writing or through the REMO system. A Closing Report should be filed when data collection has ended and the study team will no longer be using human participants or animals or secondary data or have any direct or indirect contact with the research participants or animals for the study.
- Filing a closing report (rather than just letting your approval lapse) is important as it assists NASREC in efficiently tracking and reporting on projects. Note that some funding agencies and sponsors require a notice of closure from the IRB which had approved the study and can only be generated after the Closing Report has been filed.

- A reprint of this letter shall be done at a fee.
- All protocol modifications must be approved by NASREC by way of an application for an amendment prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address or methodology and methods. Many modifications entail minimal risk adjustments to a protocol and/or consent form and can be made on an Expedited basis (via the IRB Chair). Some examples are: format changes, correcting spelling errors, adding key personnel, minor changes to questionnaires, recruiting and changes, and so forth. Other, more substantive changes, especially those that may alter the risk-benefit ratio, may require Full Board review. In all cases, except where noted above regarding subject safety, any changes to any protocol document or procedure must first be approved by NASREC before they can be implemented.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of NASREC, we would like to wish you all the success as you carry out your study.

Yours faithfully,



Dr. Mususu Kaonda

VICE-CHAIRPERSON

**THE UNIVERSITY OF ZAMBIA NATURAL AND APPLIED SCIENCES RESEARCH
ETHICS COMMITTEE - IRB**

CC: Director, Directorate of Research, Innovation and Development
Assistant Director (Research), Directorate of Research, Innovation and Development
Assistant Registrar (Research), Directorate of Research, Innovation and Development