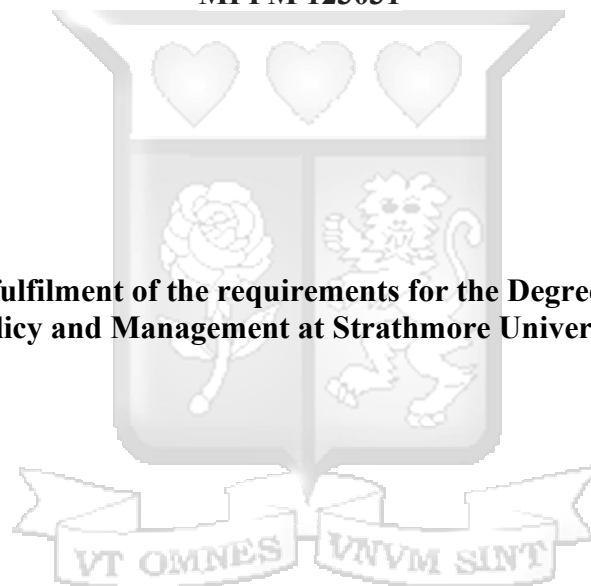


**GENDER-INCLUSIVE CLIMATE RESILIENCE AND COMMUNITY-LED
ADAPTATION IN AFFORESTATION INITIATIVES: A CASE STUDY OF THE MAU
FOREST COMPLEX, KENYA**

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Abstract

This study investigated the relationship between gender-inclusive climate resilience and community-led adaptation in afforestation initiatives within Kenya's Mau Forest Complex. Afforestation and climate resilience are vital for addressing environmental degradation and adapting to climate change. However, gender perspectives in these initiatives remain limited. This research examined the impact of gender inclusivity on adaptation activities, the distinct strategies employed, and the challenges communities face. The study aimed to: (1) Examine how gender inclusiveness influences community-led adaptation in afforestation initiatives at the Mau Forest Complex; (2) Assessed the different community-led adaptation strategies of men and women and their implications for afforestation initiatives; and (3) Identified the challenges hindering effective community-led adaptation to climate resilience among men and women in the Mau Forest Complex. A mixed-method research design was employed for this study. The study focused on community members across Bomet, Kericho, Nakuru, Nandi, Narok, and Uasin Gishu counties within the Mau Forest Complex. Quantitative data was analyzed using descriptive statistics, Pearson's correlation, and multiple regression. Qualitative data was thematically analyzed to identify recurring patterns and provide a deeper understanding of gender dynamics in adaptation practices. The findings revealed moderate awareness of the importance of gender inclusivity in climate adaptation efforts. Men and women contribute differently to afforestation: men focus on tree planting and water conservation, while women engage in sustainable agriculture. These complementary roles highlight the value of a gender-balanced approach in enhancing afforestation initiatives. However, significant challenges persist, including financial constraints and limited access to climate information. Additionally, gender-specific barriers such as restricted resource access and decision-making opportunities for women exist. These challenges hinder the effectiveness of adaptation efforts. The study concluded that a multifaceted approach is essential to build resilient, adaptive communities in the Mau Forest Complex. This approach should address financial constraints, improve access to climate information, and promote gender inclusivity. Recommendations include raising awareness of gender inclusivity and fostering collaboration between men's and women's adaptation strategies. Also, simplifying access to climate finance and dismantling gender-specific barriers. By addressing these challenges, afforestation initiatives can become more sustainable and effective, contributing to broader climate resilience in the region. Further research is suggested to explore the long-term impacts of gender-sensitive adaptation approaches, and the potential for youth and intergenerational collaboration.

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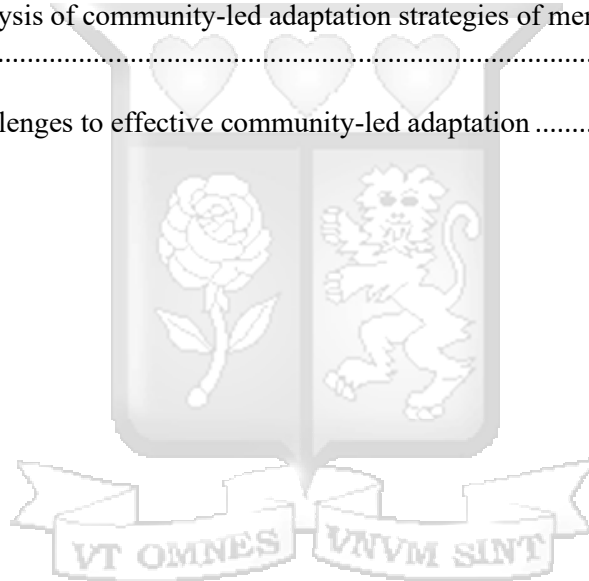
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List of Abbreviations

CCA	Climate Change Adaptation
CCCF	County Climate Change Fund
COP	Conference of Parties (Convention on Climate Change)
CSOs	Civil Society Organizations
GESI	Gender Equality and Social Inclusion
G-FLLoCA	Government Financing Locally–Led Climate Action Program
IIED	International Institute for Environment and Development
LCDs	Least Developed Countries
LIFE-AR	Least Developed Countries Initiative for Effective Adaptation and Resilience
LoCAL	Local Climate Adaptive Living Facility
NAPA	National Adaptation Programme of Action
NCCAP	National Climate Change Action Plan
NDMA	National Drought Management Authority
PBCRGs	Performance-Based Climate Resilience Grants
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change)

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Dedication

To my beloved children, Pookie 1 and Pookie 2, born and raised alongside my learning journey. You were my constant companions - my tiny study “partners” - whose presence lifted my spirit and softened my days. In your quiet strength, I found resolve. In your cuddles and giggles, I found joy, reminding me each day of the purpose behind my pursuit. This work is a testament to the delicate dance between motherhood and ambition. May it one day inspire you to chase your dreams with resilience and passion.

With all my love,

Mama

April 2025



CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter delves into the specific aspects of climate change and how it poses significant challenges to communities worldwide. Local adaptation initiatives, as highlighted by Huyer and Partey (2022), encompass a range of measures—economic, communal, physical, and ecological—that are critical for building resilience at both community and municipal levels. However, the effectiveness of these efforts is often hindered by limited citizen engagement, institutional constraints, and a lack of gender-responsive approaches. The Mau Forest Complex in Kenya, a vital ecological and water resource, faces severe environmental degradation due to climate change and human activities, emphasizing the urgent need for inclusive and community-driven adaptation strategies. This chapter introduces the study, exploring the intersection of gender-inclusive climate resilience and community-led adaptation in afforestation initiatives within the Mau Forest Complex. It outlines the background, problem statement, research objectives, and scope, setting the stage for an in-depth investigation into how gender dynamics and local participation can enhance climate adaptation efforts in this critical region.

1.2 Background of the Study

A study by Maharjan *et al.*, (2021), indicates that local adaptation initiatives encompass both proactive and reactive strategies designed to address endemic climate-related threats, such as floods, storms, and rising sea levels. These efforts span various dimensions, including economic measures like securing home insurance, communal actions such as providing warnings or assisting vulnerable neighbors, physical enhancements like reinforcing residences against extreme weather conditions, and ecological interventions like utilizing plants to enhance drainage or develop a more favorable climate. These measures are crucial not only at the community level but also play a fundamental role in enabling comprehensive adaptation at larger scales, including municipal levels.

Concurrently, local government entities encounter challenges in terms of fostering citizen involvement in climate adaptation efforts (Bryan *et al.*, 2023). Furthermore, these bodies often grapple with limitations in enforcing actions on private property due to their constrained mandates

(Gumucio *et al.*, 2020). Instances where local authorities might inadvertently hinder individual adaptation have been documented (Meah & Sharma, 2021). This underscores the pressing need for more collaborative and cooperative approaches to address these complexities and enhance the effectiveness of climate adaptation endeavors (Tesfaye *et al.*, 2022).

1.2.1 Gender-Responsive Climate Resilience

The 1995 Beijing Platform for Action marked a pivotal moment in global efforts to achieve gender equality by mandating governments to integrate gender mainstreaming into policies and programs. This institutionalization of gender considerations has been critical in advancing economic and societal progress, particularly in improving women's access to productive resources, enhancing health and nutritional standards, and boosting agricultural productivity (Prapti *et al.*, 2023). However, despite these advancements, significant gaps remain in the application of gender-responsive approaches to climate resilience, particularly in the context of community-led adaptation and afforestation initiatives.

Existing studies, such as those by Khoza *et al.*, (2021) and Larson *et al.*, (2021), do emphasize on the importance of stakeholder engagement in addressing climate change impacts on agriculture. While these studies acknowledge the need for gender-sensitive strategies, they often fail to explore how gender dynamics specifically influence the design and implementation of adaptation measures. For instance, while Tesfaye *et al.*, (2022) highlight the critical role that gender plays in shaping climate adaptation policies, there is limited empirical evidence on how these considerations translate into actionable, community-driven strategies which do take care of the unique vulnerabilities and capacities of both men and women. This gap is evident in the afforestation initiatives, where gender-specific roles, responsibilities, and access to resources are rarely examined in depth.

Research by Prapti *et al.*, (2023) underscores the disparities in resource allocation, decision-making authority, and adaptive capacities when it comes to men and women. These studies reveal that the women often face greater barriers when it comes to accessing resources and participating in decision-making processes, which bars them from practicing climate change. However, there is a lack of comprehensive analysis on how these gender-specific challenges manifest in community-

led adaptation efforts, particularly in ecologically sensitive areas like the Mau Forest Complex. A study by Wrigley-Asante *et al.*, (2021) further highlights the gendered impacts of climate change on agricultural livelihoods, but their work does not fully address how these impacts influence the effectiveness of gender-responsive adaptation strategies in afforestation initiatives.

A critical gap in literature is the limited exploration of how gender-inclusive approaches can enhance the sustainability and effectiveness of community-led adaptation efforts. Current research from Tye *et al.*, (2023) emphasizes the value of comprehending farmers' climate change viewpoints, yet a significant research gap exists regarding how gender-specific challenges impact afforestation and climate resilience initiatives. These challenges, including resource access inequality, restricted decision-making authority, and cultural expectations, create substantial obstacles to project success that remain inadequately studied. Moreover, existing studies often focus on broad gender disparities without providing actionable insights into how these disparities can be addressed through locally tailored, gender-responsive interventions (Mia *et al.*, 2023; Wanjiru, and Yatich, 2023).

This research addresses existing knowledge gaps by exploring the impact of gender-inclusive approaches on community-driven adaptation in afforestation projects throughout the Mau Forest Complex. Through analysis of the specific contributions, obstacles, and resilience capabilities across genders, this study develops a detailed perspective on how gender interactions affect climate resilience outcomes. The emphasis on gender-responsive climate strategies contributes to an underexplored area of research while delivering actionable recommendations for those developing and implementing inclusive adaptation frameworks.

1.2.2 Locally Led Adaptation

Locally Led Adaptation (LLA) has gained prominence as a key strategy for enhancing climate resilience, highlighting the importance of solutions driven by communities, rooted in local contexts, and centered on equity, inclusion, and the reinforcement of local systems and institutions (Westoby *et al.*, 2021). This approach represents a significant shift in development practices, moving away from top-down strategies to those that actively involve communities in addressing climate-related challenges (UNEP, 2021). Despite its growing recognition, there remain

substantial gaps in the implementation and understanding of LLA, particularly in how it integrates with gender-responsive strategies and addresses the unique needs of vulnerable populations.

The United Nations Framework Convention on Climate Change (UNFCCC) underscores the importance of climate adaptation as a core commitment, involving a wide range of stakeholders, including the public, private sector, and civil society (Kuiru and Mugo, 2023). However, as Arnold & Soikan (2021) note, existing policies at international, national, and local levels have struggled to keep pace with the urgent need to support community-driven actions. This disconnect is particularly evident in the insufficient financial commitments to LLA. For instance, as of 2016, international donors had committed only 10.4 billion toward climate adaptation in developing nations, far below the annual target of 10.4 billion toward climate adaptation in developing nations, far below the annual target of 300 billion by 2030 (UNEP, 2021). Furthermore, only 10% of global climate funds are allocated to mitigation and adaptation initiatives, highlighting a significant resource gap (Soanes *et al.*, 2021; UNEP, 2021).

A notable effort to address this gap was the Grand Bargain, introduced by the High-Level Panel on Humanitarian Financing, which pledged to allocate 25% of international humanitarian funding directly to local organizations. However, this commitment has fallen drastically short, with only 2.1% of funding reaching local actors (Development Initiatives, 2020). This failure to channel resources to the local level undermines the potential of LLA to drive effective and sustainable climate adaptation (Gitau *et al.*, 2020).

While initiatives like the Least Developed Countries (LDCs) Group's 'LDC 2050 Vision' and the LIFE-AR program aim to promote LLA, there is limited research on how these programs are implemented on the ground, particularly in ecologically sensitive regions like the Mau Forest Complex. For instance, Kenya's Government Financing Locally-Led Climate Action Program (G-FLLoCA) marks a major advancement in promoting decentralized climate responses, with commitments exceeding USD 600 million for locally led adaptation (IIED, 2021). Nevertheless, there remains a gap in empirical evidence regarding fund utilization, the depth of community engagement, and the gender-related impacts of these initiatives.

A critical gap in the literature is the limited exploration of how LLA intersects with gender-responsive strategies. While Arnold & Soikan (2021) argue that local communities possess valuable contextual knowledge, there is insufficient research on how gender dynamics influence the design and implementation of LLA initiatives. For example, women frequently encounter distinct challenges—such as restricted access to resources, limited influence in decision-making, and cultural limitations—that are often overlooked in Locally Led Adaptation (LLA) frameworks. Additionally, the role of women in driving innovative adaptation solutions within their communities is often overlooked, despite their critical contributions to agriculture, natural resource management, and community resilience.

Moreover, while LLA emphasizes inclusivity and equity, there is a lack of comprehensive studies on how marginalized groups, including women, youth, and indigenous communities, are integrated into adaptation planning and implementation (Gitau *et al.*, 2020). This gap is particularly evident in the context of afforestation initiatives, where gender-specific roles and responsibilities are rarely examined. For example, women often play a central role in sustainable agriculture and forest conservation, yet their perspectives and needs are frequently excluded from decision-making processes.

This study aimed to bridge existing knowledge gaps by exploring how gender-responsive approaches can enhance the effectiveness of locally led adaptation within the Mau Forest Complex. By examining the relationship between community-driven adaptation efforts and gender inclusion, the research seeks to generate practical insights for improving LLA implementation in ways that recognize and respond to the distinct vulnerabilities and strengths of both men and women. In doing so, the study not only contributes to an underexplored area of literature but also offers valuable guidance for policymakers and practitioners striving to develop more inclusive and sustainable climate adaptation strategies.

1.2.3 Mau Forest Complex

Located within Kenya's Rift Valley province, the vast Mau Forest Complex spans four districts: Bomet, Kericho, Nakuru, and Narok. Serving as a vital watershed, these forested areas are instrumental in supplying water to the western region of the country. Key rivers originating from

the Mau Forest, such as Sondu Miriu, Yala, Nzoia, and Nyando, along with the transboundary Mara River, eventually flow into Lake Victoria. Additionally, the Mau Complex plays a crucial role as the primary water source for the Ewaso Nyiro and Kerio rivers. These interconnected watercourses, in conjunction with other rivers originating from the Mau Forest, contribute to the drainage systems of Rift Valley lakes, including Natron and Nakuru (Key Biodiversity Areas, 2023).

Recent encroachments within the Mau Forest Complex have elicited significant public discontent and have concurrently compromised fundamental forest roles and offerings. Over post-independence years, the Mau Forest Complex has undergone a substantial reduction in its original expanse, with a notable decline of nearly 37%. A particularly notable depletion occurred during 2001/2002. The repercussions of these alterations are evident in Eastern Mau, where perennial rivers have shifted to seasonal flows. Analysis of satellite imagery from 2000 underscores that less than 40% of this specific forest segment holds an official gazettement (Cherono and Kipkoech, 2021; WWF, 2020).

In the southwestern part of the Mau, the very source of the Mara River, the forest cover has been extensively removed, and agricultural activities have encroached right up to the river's edge. This situation has caused severe soil erosion and a notable increase in flash floods. Approximately 43% of the communities residing in the South western Mau region perceives significant environmental challenges, yet only a quarter (25%) have implemented soil conservation measures on their farms (Auma *et al.*, 2023). The Mau Forest area is characterized by steep gradients of up to 60 degrees, resulting in the second-highest runoff in Kenya. The soils, eroded and laden with agricultural chemicals and other contaminants, eventually find their way into the Mara River. Notably, the Mara River serves as the primary water source for 62% of households within the Mau catchment basin (WWF, 2020).

In developing policies to strengthen afforestation efforts and enhance agricultural resilience against the challenges of climate change, it is essential to incorporate an understanding of gender-specific differences in abilities, needs, and priorities. This integration is vital to ensuring the efficacious execution of adaptation measures. Parpart (2023) notes that since 1995, governmental bodies and development entities have advanced in formulating guidelines, frameworks, and

modules to guide the process of considering gender aspects within strategies that are developed as well as developmental projects.

Khoza *et al.*, (2021) emphasize that after almost three decades of employing strategies for achieving gender equality, discussions among advocates, academics, and experts have emerged, questioning the degree of success of this approach. These dialogues have triggered assessments of the effectiveness of sex-focused policies and the integration of sex considerations into projects and organizations to evaluate the extent of integration and the impact of this approach (Angula *et al.*, 2021).

1.3 Problem Statement

Existing literature highlights the deficiency in integrating gender mainstreaming into policies and practices aimed at shaping both mitigation and adaptation strategies. Scholarly works by researchers such as Huyer *et al.*, (2021) collectively illustrate this prevailing shortcoming. Notably, the omission of gender references within policies, coupled with inadequacies in addressing gender inequalities through programs and projects, emerges as a potential hurdle impeding the effective execution of climate change initiatives (Dev and Manalo, 2023).

Tye *et al.*, (2023) emphasize the scarcity of research and empirical data on the factors that shape citizen participation in climate adaptation efforts. Although earlier studies recognize the significance of contextual factors that resonate with the target population's environment, a thorough understanding of the specific barriers and drivers influencing citizen engagement in adaptation processes is still insufficient (Barasa *et al.*, 2022; Angula *et al.*, 2021). Additionally, internal and subjective dimensions, such as emotions, values, beliefs, and worldviews, play critical roles in either facilitating or obstructing adaptation efforts but have received minimal focus. These subjective aspects are seldom integrated with concrete, objective factors, creating a gap in understanding how they collectively impact climate adaptation.

The Mau Forest Complex in Kenya is pivotal in regulating climate patterns as well as safeguarding natural resources. However, the intricate interplay between gender-inclusive climate-resilience strategies and community-driven adaptation efforts within afforestation initiatives remains relatively unexplored. The existing research gap fails to provide a comprehensive understanding

of how gender dynamics intersect with community-led actions in enhancing climate resilience through afforestation. As a result, critical insights into the effectiveness, challenges, and synergies between gender-responsive approaches and locally driven adaptations within the context of afforestation initiatives are lacking (Kuira and Mugo, 2023). Addressing this gap is crucial to fostering more sustainable and effective strategies for climate adaptation, particularly within the unique ecological and social framework of the Mau Forest Complex.

In the realm of East African nations, Kenya stands among those that have implemented gender mainstreaming strategies, effectively integrating them into sectoral policies and programs to address gender-related concerns (Kiogora *et al.*, 2024). However, Tesfaye *et al.*, (2022) contend that despite the inclusion of women in many recently formulated climate change policies and strategies in the broader East African context, there are discernible gaps. As such, there is a pressing need to comprehend the factors contributing to the limited positive impact of gender mainstreaming, persisting even after more than three decades since the initiation of the Beijing Platform for Action. This inquiry gains particular relevance in the context of mitigating gender inequalities, focusing specifically on Kenya.

1.4 Research Objectives

1.4.1 Overall Objective

To investigate the linkages between gender-inclusive climate resilience and community-led adaptation in afforestation initiatives at Mau Forest Complex in Kenya.

1.4.2 Specific Objectives

The specific objectives of the study were:

- i. Examine how gender-inclusiveness influences community-led adaptation in afforestation initiatives at Mau Forest Complex.
- ii. Assess the different community-led adaptation strategies of men and women and their implications on afforestation initiatives at Mau Forest Complex.
- iii. Identify the challenges that hinder effective community-led adaptation to climate resilience among men and women residing in Mau Forest Complex.

1.5 Research Questions

The study sought to answer the following research questions:

- i. To what extent does gender inclusiveness influence community-led adaptation in afforestation initiatives at Mau Forest Complex?
- ii. What are the different community-led adaptation strategies of men and women and its implications on afforestation initiatives at Mau Forest Complex?
- iii. What are the challenges that hinder effective community-led adaptation to climate resilience among men and women residing in Mau Forest Complex?

1.6 Scope of the Study

The study concentrated mainly on the Mau Forest Complex in Kenya, with additional emphasis on selected counties - Bomet, Kericho, Nakuru, Narok and Uasin Gishu. These counties, located within the Mau Forest Complex, were selected based on their relevance to the research objectives and the accessibility of reliable data. These counties served as case studies to investigate the linkages between gender-inclusive climate resilience and community-led adaptation within the context of afforestation initiatives. In addition, the study's main thematic scope was to examine the connections between gender-inclusive climate resilience and community-led adaptation efforts in the context of afforestation initiatives. This involved exploring the extent to which gender-inclusiveness influences community-led adaptation, assessing the gender-specific adaptation strategies and their implications for afforestation, and identifying challenges that hinder effective community-led adaptation among men and women in the Mau Forest Complex.

The study's temporal scope spanned from 2013 to 2021. This period aligns with the initiation of the Adaptation Consortium's support to selected County Governments to pilot the County Climate Change Fund (CCCCF) mechanism. The study also encompassed the launch of the Government of Kenya's G-FLLoCA initiative in June 2020. This timeframe provided a contextually relevant span for investigating the impact and effectiveness of gender-inclusive climate resilience and community-led adaptation efforts.

1.7 Significance of the Study

The study brought out significant implications for various stakeholders engaged in climate adaptation efforts, gender mainstreaming, and sustainable development within the Mau Forest Complex in Kenya. The research outcomes contribute valuable insights and knowledge to multiple parties, fostering positive changes in policy formulation, implementation strategies, community engagement, and gender-responsive initiatives. First, the study contributes to the existing body of knowledge and literature on climate adaptation, gender mainstreaming, and community-led initiatives. Further, the research offers nuanced insights into the complexities of such interactions. This knowledge stimulated further academic research, discussions, and debates, advancing the fields of environmental studies, gender studies, and sustainability science.

Second, the findings of this study directly inform policymakers and government agencies at the National and County levels in Kenya. Insights into the effectiveness of gender-inclusive climate-resilience strategies and community-led adaptation efforts will guide the formulation of more responsive and contextually relevant policies. Policymakers can integrate gender considerations into climate adaptation initiatives, enhancing their impact and ensuring more inclusive and equitable outcomes. Finally, local communities residing in the Mau Forest Complex, as well as community-based organizations (CBOs) involved in adaptation activities, can benefit from the study's outcomes. The research sheds light on effective adaptation strategies, gender dynamics, and challenges faced by different genders. This knowledge can empower communities to make informed decisions, develop sustainable adaptation plans, and strengthen their resilience against climate-related risks.

1.8 Chapter Summary

Introducing the research study in Chapter One involves providing a detailed overview, contextualizing the study, and outlining key elements, including background, problem statement, research objectives, research questions, scope, and the significance of the study. The Mau Forest Complex in Kenya serves as the focal point for investigating the linkages between gender-inclusive climate resilience and community-led adaptation within the context of afforestation initiatives. In summary, Chapter One provides a comprehensive introduction, laying the foundation for the

subsequent chapters' exploration of the linkages between gender-inclusive climate resilience and community-led adaptation in the Mau Forest Complex in Kenya.



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter undertakes a thorough examination of the literature related to the study's specific objectives, covering gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives. The review addresses the various aspects of the research objectives. This section scrutinizes relevant empirical studies that have examined gender dynamics within climate-resilience strategies, community-led adaptation initiatives, and afforestation projects. The section provides a summary of what the literature says. Finally, the chapter concludes with an examination of the theoretical underpinnings that guide the study's exploration of the variables of the study and develop a conceptual framework, identifying and defining the variables.

2.2 Theoretical Framework

2.2.1 Theory of Change

The Theory of Change (ToC) is a strategic framework that outlines the process through which a desired change is anticipated to happen, detailing the underlying rationale and assumptions within a given context. It maps out the causal pathways through which interventions, such as policies, programs, or projects, lead to specific outcomes, emphasizing the importance of context, stakeholder involvement, and underlying assumptions (Huyer, 2021). The ToC framework is particularly useful for planning, implementing, and evaluating complex initiatives, as it provides a clear roadmap for achieving long-term goals by identifying the necessary preconditions, activities, and outcomes. In the context of climate change adaptation, the Theory of Change offers a structured approach to understanding how gender-inclusive strategies and community-led actions can contribute to sustainable environmental conservation and agricultural resilience.

The United Nations Framework Convention on Climate Change (UNFCCC) has been instrumental in guiding nations to formulate strategies and programs for both climate adaptation and mitigation. Foundational frameworks such as the National Adaptation Programme of Action (NAPA), National Climate Change Policies, and Intended Nationally Determined Contributions (INDCs) outline the pathways countries adopt to fulfill their obligations under the UNFCCC (Paudyal *et*

al., 2019). These frameworks involve a wide array of stakeholders, including government bodies at all levels and the private sector. However, the success of these policies often hinges on their capacity to address gender inequalities and promote inclusivity - particularly in sectors like agriculture, where women have a significant role (Friedman *et al.*, 2022).

In countries where women are heavily involved in agricultural production, the degree of gender inclusivity in climate policies is critical to their success. Gender-responsive approaches ensure that adaptation, mitigation, environmental conservation, and agricultural programs address the unique needs and vulnerabilities of all stakeholders, particularly those in marginalized positions (Asher *et al.*, 2022). For example, women frequently encounter obstacles such as restricted access to resources, limited involvement in decision-making, and inadequate access to climate information, all of which can impede their capacity to adapt to climate change (Elias *et al.*, 2021). By incorporating gender perspectives into climate policies, the Theory of Change illustrates how inclusive approaches can foster more equitable and impactful results, ultimately strengthening community resilience and promoting long-term sustainability (Huyer, 2021).

The Theory of Change also emphasizes the importance of local context and stakeholder engagement in driving successful adaptation efforts. It underscores the need for policies and programs to be grounded in local realities, ensuring that they are relevant, actionable, and sustainable (Hajjar *et al.*, 2022). This aligns with the principles of locally led adaptation, which prioritize community-driven solutions and the strengthening of local networks and institutions (Westoby *et al.*, 2021). By applying the Theory of Change, this study seeks to map out the pathways through which gender-inclusive and community-led adaptation initiatives can enhance climate resilience in the Mau Forest Complex, providing a clear framework for understanding and addressing the complex interplay between gender, agriculture, environmental conservation, and climate change.

2.2.2 Integral Theory

Ken Wilber's Integral Theory is a comprehensive philosophical framework that attempts to integrate diverse fields of human knowledge and experience into a cohesive whole. At its core is the AQAL model (All Quadrants, All Levels, All Lines, All States, All Types), which provides a

multidimensional map for understanding reality. The foundational aspect of this theory is the four quadrants, representing different perspectives on reality: (1) Upper-Left Quadrant (Interior-Individual): Subjective consciousness, personal thoughts, feelings, and experiences—the "I" perspective. (2) Upper-Right Quadrant (Exterior-Individual): Objective behaviors, physical brain states, and observable phenomena—the "It" perspective. (3) Lower-Left Quadrant (Interior-Collective): Intersubjective cultural values, shared meanings, worldviews, and ethics—the "We" perspective. (4) Lower-Right Quadrant (Exterior-Collective): Interobjective systems, social structures, economic systems, and environmental factors—the "Its" perspective (Wilber, 2007).

This theory illuminates how gender dynamics operate across multiple levels when applied to gender-inclusive climate resilience and community-led afforestation initiatives (Tovar-Restrepo *et al.*, 2021). In the subjective realm, it helps us understand how different genders experience climate vulnerability based on personal values and psychological resilience. Behaviorally, it addresses gender differences in adaptation skills and practices. Culturally, it examines how shared norms and beliefs shape gender roles in environmental stewardship. Systemically, it reveals how institutions, policies, and economic structures often create unequal access to resources needed for climate adaptation. A truly integral approach to afforestation would therefore combine technical training for women (exterior-individual), consciousness-raising about gender equality (interior-individual), community dialogue to transform cultural norms (interior-collective), and policy reforms to ensure equitable resource distribution (exterior-collective) (Westholm and Arora-Jonsson, 2023). In Kenya, for example, this might manifest as initiatives that simultaneously strengthen women's land rights, build technical forestry skills, challenge traditional gender norms around tree planting, and create inclusive governance structures for community forests. By addressing all quadrants, such initiatives avoid the pitfall of one-dimensional approaches that might improve technical capacity without addressing cultural barriers or change policies without building an individual agency, ultimately leading to more sustainable and transformative outcomes for both forest ecosystems and the diverse communities that depend on them (Wanjiru and Yatich, 2023).

Beyond these quadrants, Integral Theory incorporates developmental levels (stages of growth that unfold in each quadrant), lines of development (multiple intelligences that develop somewhat independently), states of consciousness (temporary experiences like waking, dreaming, and

meditative states), and types (persistent styles or orientations such as personality types or gender). Wilber (2007) argues that most approaches to human development and social issues are partial because they focus on just one or two quadrants while neglecting others. The integral approach aims to be comprehensive by addressing all dimensions simultaneously, recognizing that sustainable transformation requires attention to individual consciousness, behavior, culture, and systems. This framework highlights the interconnectedness of individual experiences with broader social and systemic structures.



		INTERIOR	EXTERIOR
INDIVIDUAL	Upper Left (Experience)	<p>Domain: Individual interior, subjective experience</p> <p>Methodologies: phenomenology, structuralism</p> <p>Validity claims: “truthfulness” and sincerity, reflective and experiential, “thick descriptions” (e.g., Is this adaptation understood by individuals? Is it embedded in an individual’s beliefs and faith, or are they just going along with it superficially? That is, is this adaptation sincere and does it resonate with an individual’s values and worldviews?)</p>	<p>Upper Right (Behavior)</p> <p>Domain: Individual exterior, behavior and physiology</p> <p>Methodologies: empiricism and life sciences (i.e., physics, biology)</p> <p>Validity claims: “objective truth”, replicable, verifiable (e.g., Does this adaptation correctly reflect the scientific studies that suggest we need it? That is, is the adaptation effective? Can people do what is asked of them?)</p>
		I	IT
COLLECTIVE	Lower Left (Culture)	<p>Domain: Collective interior, culture</p> <p>Methodologies: hermeneutics, ethnomethodology</p> <p>Validity claims: “justness”, culturally appropriate (e.g., Does this adaptation appropriately connect with the culture, and how are the less fortunate and most impacted affected? That is, is it appropriate and just?)</p>	<p>Lower Right (Systems)</p> <p>Domain: Collective exterior, systems</p> <p>Methodologies: systems theory and systems sciences (i.e., ecology, economics)</p> <p>Validity claims: predictability, “functional fit” (e.g., Does this adaptation functionally fit in the economic, social, political, and ecological systems present? That is, will it work systemically at various levels?)</p>
		WE	ITS

Figure 2 1: Integral framework’s four domains of reality, with validity claims related to adaptation

According to Wilber (2007), Integral Theory identifies four key domains of reality that are vital to consider and integrate into adaptation strategies, such as locally led climate change adaptation. Wilber presents these domains through four quadrants, each emerging from distinct methodologies, each with its validity claims. These four domains encompass the subjective (individual inner experiences), inter-subjective (shared cultural and relational experiences),

objective (observable, external behaviors), and inter-objective (systemic and environmental interactions) perspectives. This framework emphasizes the significance of understanding phenomena from various perspectives, both internal and external, as well as individual and collective viewpoints (Brockhaus *et al.*, 2020).

Integral Theory emphasizes the importance of integrating all four viewpoints into both theoretical and practical methods to adaptation. It emphasizes the importance of taking into account various levels of consciousness, awareness, and worldviews among individuals involved in adaptation efforts (Friedman *et al.*, 2022). For example, initiatives for locally-led climate adaptation give local populations the ability to design adaptation efforts. This method entails international and national authorities providing financial support and delegating authority to local communities, allowing them to use resources to mitigate climate risks and improve resilience (Tye & Coger, 2021).

According to Friedman *et al.*, (2022), Integral Theory says that judging reality necessitates the evaluation of numerous validity claims rather than relying simply on one set. For example, measuring improvements in adaptive ability should not be limited to interior or external validity claims alone. Instead, a more successful review incorporates a variety of indicators and measurement methodologies from different perspectives. This method is a complete strategy for encouraging and expanding successful responses to locally driven adaptation to climate change.

2.2.3 Gender Equality and Social Inclusion Framework

The World Bank, in collaboration with the United Nations, created the Gender Equality and Social Inclusion (GESI) framework, a strategic approach aimed at fostering fair access to resources, services, and decision-making opportunities for all individuals, particularly women, disadvantaged groups, and marginalized communities. Originally proposed by development organizations such as the World Bank and the United Nations, the GESI framework has been widely adopted to address systemic inequalities and ensure that development efforts are both inclusive and transformative (World Bank, 2018). This framework emphasizes the importance of integrating gender equality and social inclusion into policies and programs to amplify the voices and agency

of historically marginalized groups, thereby enhancing the effectiveness and sustainability with the development initiatives.

In the context of this study, the GESI framework is applied to biodiversity conservation and climate change adaptation (CCA) interventions. It emphasizes the importance of integrating gender equality and social inclusion in a responsive manner to ensure that adaptation strategies are both fair and effective. The GESI approach offers practical recommendations for locally led adaptation, ensuring that project benefits are distributed fairly and that the voices and concerns of vulnerable and marginalized groups are incorporated into decision-making processes (World Bank, 2018). By improving access to information, generating sustainable livelihoods, and fostering knowledge-sharing between partners and local communities, the GESI framework enhances the capacity of marginalized groups to participate in and benefit from adaptation efforts.

The GESI framework offers a perspective for analyzing how gender inclusivity influences community-led adaptation efforts. It underscores the importance of addressing gender imbalances in access to resources, decision-making power, and participation in adaptation activities. By utilizing the GESI framework, this study explores how gender-responsive policies and practices can improve the effectiveness of afforestation initiatives. For instance, the framework stresses the necessity of ensuring that women, who often play a pivotal role in natural resource management, are actively engaged in planning and implementing adaptation strategies. This aligns with the study's goal of examining how gender inclusivity impacts the success of community-led adaptation efforts in the Mau Forest Complex.

The GESI framework extends beyond simple gender mainstreaming by recognizing the intersectionality of disadvantage. As Maharjan *et al.*, (2021) argue, the framework acknowledges that individuals face climate vulnerabilities based on overlapping social identities, including gender, socioeconomic status, ethnicity, age, and disability. This intersectional approach has proven particularly relevant in the context of community-led afforestation initiatives, where access to resources and decision-making power is rarely distributed equally.

Recent work by Westholm and Arora-Jonsson (2023) demonstrates how climate resilience programs have evolved from gender mainstreaming approaches to more nuanced perspectives that

consider multiple axes of power. Their analysis shows that early afforestation programs often included women as participants without addressing underlying power dynamics, while GESI-informed approaches challenge these structural barriers directly.

The GESI framework also encourages a holistic approach to gender integration, moving beyond gender-unaware or gender-aware policies to gender-sensitive and gender-transformative strategies. Gender-transformative policies, which address the root causes of gender inequality and promote systemic change, are particularly relevant to this study. By fostering ownership and participation among marginalized groups, such policies can lead to transformational change in climate adaptation efforts (UNEP, 2015).

The GESI framework has influenced governance structures in community-led afforestation initiatives by emphasizing inclusive decision-making processes. McOmber *et al.*, (2023) document how traditional forest governance systems often exclude women and marginalized groups from meaningful participation. Their conceptual framework for changing gender norms in agriculture and forest management identifies key leverage points where GESI principles can transform institutional arrangements.

In Kenya specifically, Kamau and Ngigi (2022) found that forest conservation initiatives along the coast have evolved beyond the tokenistic participation of women to employ what they term "gender transformative approaches." These approaches, informed by GESI principles, redesign governance structures to ensure marginalized groups have substantive influence over project design, implementation, and benefit distribution. Their research demonstrates how GESI-informed projects resulted in more equitable benefit-sharing arrangements and greater sustainability outcomes.

Perhaps the most significant influence of the GESI framework on afforestation initiatives relates to resource access and control. Asher *et al.* (2022) conducted a critical examination of forest governance across the Global South, finding that GESI-informed tenure reforms have successfully challenged male-dominated ownership patterns in several contexts. Their research shows that when afforestation programs explicitly address inequitable resource distribution, both ecological outcomes and community resilience improve.

Kinyanjui *et al.* (2022) investigated climate finance accessibility for women-led afforestation initiatives in Kenya's arid and semi-arid lands, highlighting how GESI principles help identify and dismantle barriers that previously prevented women from accessing critical resources. Their study documented how financial mechanisms redesigned with GESI considerations increased women's participation in afforestation by 43% while simultaneously improving project outcomes.

The GESI framework has significantly influenced how diverse knowledge systems are valued in climate resilience planning. Kariuki and Mwangi (2023) explored the integration of indigenous knowledge with gender perspectives in sustainable forest management in Kenya's Mau Forest Complex. Their participatory mapping approach, guided by GESI principles, revealed gendered differences in environmental knowledge that, when incorporated into planning, resulted in more robust afforestation strategies. This integration of diverse knowledge systems represents a key pathway through which GESI influences climate resilience. Nightingale (2023) argues that environmental initiatives must move beyond binary thinking about gender toward approaches that recognize more-than-human relationships and diverse ways of knowing. Her work demonstrates how GESI-informed afforestation initiatives that value women's and indigenous knowledge result in more context-appropriate species selection and planting techniques.

Recent literature highlights how GESI principles have transformed monitoring and evaluation approaches in climate-resilience programming. Friedman *et al.* (2022) unpacked the intersectional dimensions of forest restoration policies in Malawi, demonstrating how GESI-informed evaluation frameworks capture previously invisible impacts on marginalized groups. Their research showed that conventional metrics focused on tree coverage and carbon sequestration often missed critical social dimensions of forest restoration. Building on this insight, Mbugua and Mugo (2024) evaluated Kenya's Green Schools Initiative using a gender-transformative lens, revealing how GESI principles in monitoring systems helped identify both positive and negative unintended consequences for different social groups. Their framework provides valuable guidance for designing monitoring systems that capture differential impacts across gender and other social categories.

Despite its clear benefits, implementing GESI principles in afforestation initiatives faces significant challenges. Hajjar *et al.* (2022) identified key levers for addressing gender inequality

in forestry and tree-based systems, noting that cultural norms, time poverty, and elite capture of benefits remain persistent barriers. Their research suggests that GESI implementation requires sustained investment in changing both formal institutions and informal norms. In response to these challenges, innovative approaches have emerged. Maina *et al.* (2021) documented gender-responsive approaches to mangrove restoration in Kenya's coastal communities that address practical constraints through scheduling flexibility, childcare provisions, and appropriate technology design. Their study showed that these adaptations, informed by GESI analysis, increased women's sustained participation by 37% compared to conventional approaches.

Looking forward, emerging research suggests several promising directions for deeper integration of GESI principles into climate resilience through afforestation. Elias *et al.* (2021) identified opportunities for enhancing synergies between gender equality and biodiversity goals through GESI-informed nature-based approaches. Their work emphasizes the need for approaches that simultaneously address climate resilience, biodiversity protection, and social inequalities—a complex but necessary challenge. Monterroso *et al.* (2021) further highlight how enhancing women's resource rights through GESI-informed approaches contributes to improved resilience outcomes. Their research identifies pathways through which secure tenure and resource rights for marginalized groups translate into more sustainable and equitable forest management practices.

2.3 Empirical Review

2.3.1 Gender-Inclusive Climate Resilience

The integration of gender considerations into climate resilience strategies has gained increasing attention in recent years, as empirical evidence highlights the differential impacts of climate change on men and women. Existing literature underscores the importance of gender-inclusive approaches in enhancing the effectiveness of climate adaptation efforts, particularly in locally led initiatives. However, challenges persist in translating gender-responsive policies into actionable strategies that address structural inequalities and empower marginalized groups. This section reviews empirical studies on gender-inclusive climate resilience, focusing on the barriers, opportunities, and outcomes of integrating gender perspectives into adaptation efforts.

2.3.1.1 Considering Gender Integration in Locally Led Adaptation

Locally led adaptation (LLA) emphasizes community-driven solutions to climate change, yet its success often hinges on addressing structural inequalities that exacerbate vulnerability. Recent studies document persistent gender disparities in participation across afforestation initiatives globally. In a systematic review of 87 community forestry programs across 24 countries, Cheng *et al.* (2021) found women's formal participation averaged 34% compared to men's 66%, with notable regional variations. Kenyan studies reveal similar patterns; Wangari *et al.* (2022) documented that women constituted only 29% of leadership positions in community forest associations in central Kenya despite representing 58% of general membership.

Time poverty represents a critical barrier to women's participation. Mwangi *et al.* (2023) conducted time-use surveys with 420 households participating in community afforestation in western Kenya, finding women averaged 14.3 hours per day on combined productive and reproductive labor compared to men's 8.7 hours. This time constraint significantly limited women's ability to attend meetings and training sessions, which were often scheduled without consideration of women's daily routines.

Cultural norms further constrain participation. Njoroge *et al.* (2021) found that in patrilineal communities in Kenya's arid and semi-arid lands, customary norms restricting women's public speaking in mixed-gender settings reduced their substantive participation in afforestation planning by 47% compared to communities with less restrictive norms. Globally, Coleman and Mwangi (2020) identified similar patterns across 18 countries, noting that participatory exclusions were especially pronounced in contexts where tree planting was culturally coded as a masculine activity.

2.3.1.2 Maputo Declaration on Agriculture and Food Security

The Maputo Declaration, adopted by AU member states in 2003, represents a significant commitment to agricultural development and food security. The declaration mandates that at least 10% of national budgets be allocated to agriculture, aiming to achieve a 6% annual growth rate in the sector (Bassey & Amaraihu, 2018). However, empirical evidence reveals mixed outcomes, with only a few countries consistently meeting the target. For example, Rahman *et al.* (2022) found that countries like Ethiopia, Ghana, and Malawi, which allocated more than 10% of their budgets to agriculture, experienced significant agricultural growth.

Despite these achievements, challenges persist in ensuring gender-inclusive agricultural policies. A study by Njuki *et al.*, (2021) reveals that women, who make up a substantial part of the agricultural workforce in Africa, often encounter obstacles such as limited access to land, credit, and technology. These barriers impede their ability to adapt to climate change and contribute to food security. The study advocates for gender-responsive policies that address these inequalities and foster greater participation of women in agricultural decision-making.

2.3.1.3 SDG 5: Achieve Gender Equality and Empower All Women and Girls

Sustainable Development Goal (SDG) 5 stresses the significance of gender equality and women's empowerment in enabling the achievement of sustainable development. Empirical research underscores the link between gender equality and climate resilience, highlighting that women's vulnerability to climate change is often intensified by existing inequalities (UN Women, 2022). For example, women's roles in securing water and food make them particularly vulnerable to climate-induced resource scarcity (Westholm and Arora-Jonsson, 2023).

Recent research underscores the potential of gender-responsive climate policies to enhance resilience. A study by Djoudi *et al.* (2021) found that strengthening women's property rights and access to natural resources significantly improved their adaptive capacities and livelihood opportunities. Similarly, UNEP (2022) highlights the importance of integrating gender perspectives into environmental policies to address the root causes of inequality and promote sustainable development.

Empirical evidence demonstrates that gender-inclusive climate resilience strategies are essential for effective adaptation, particularly in locally led initiatives. However, challenges such as inconsistent policy implementation, limited resource allocation, and structural inequalities hinder progress. Addressing these barriers requires sustained collaboration, gender-responsive budgeting, and institutional reforms that empower marginalized groups. By integrating gender perspectives into climate policies, stakeholders can enhance the sustainability and inclusivity of adaptation efforts, contributing to broader development goals.

2.3.1. Innovative Approaches to Gender-Inclusive Participation

Several promising approaches have emerged to address participation barriers. In Kenya's coastal region, Ochola *et al.* (2022) evaluated women-only planning forums that preceded mixed-gender meetings, finding this approach increased women's substantive contributions in subsequent community-wide discussions by 64%. These forums provided space for women to articulate priorities and develop collective positions before engaging in broader community processes. Several approaches have emerged to integrate diverse knowledge systems. In central Kenya, Mbuti *et al.* (2023) evaluated, knowledge dialogues, structured processes where men's and women's distinct knowledge about tree species was explicitly documented and synthesized. Afforestation initiatives employing these approaches demonstrated 37% higher tree survival rates and 44% greater biodiversity compared to conventional approaches.

Flexible participation mechanisms show particular promise. Maathai Institute (2024) documented how community afforestation initiatives in central Kenya that offered multiple participation pathways, including home-based nursery operations, flexible timing of activities, and provision of childcare during meetings, increased women's active engagement by 76% compared to conventional approaches. Similarly, Agarwal (2021) found that community forestry groups in South Asia that adapted participation requirements to accommodate women's time constraints demonstrated 58% higher female retention rates. Participatory technology development shows particular promise. Langat *et al.* (2022) documented how women-managed tree nurseries in Kenya's highland regions developed innovative propagation techniques for difficult indigenous species by adapting traditional knowledge. When these techniques were incorporated into

community-wide afforestation efforts, germination success increased by 58% for key indigenous species compared to conventional approaches.

Digital tools are increasingly enabling inclusive participation. Wekesa *et al.* (2023) evaluated mobile-based tree monitoring systems in four Kenyan counties, finding that initiatives with gender-responsive design features (voice rather than text-based interfaces, local language options, picture-based navigation) achieved near gender parity in technology adoption and use (48% women users compared to 29% in conventional apps). Digital knowledge repositories are increasingly important. Okumu *et al.* (2024) evaluated a mobile-based indigenous tree knowledge platform in Kenya that explicitly documented gender-differentiated knowledge about 120 native tree species. Community afforestation groups using this platform selected 42% more diverse species mixes and achieved 29% higher two-year survival rates compared to groups without access to this knowledge resource.

Gender-inclusive approaches generate broader social benefits. Chaudhary *et al.* (2022) conducted a five-country comparative study finding that community afforestation with gender-balanced governance demonstrated 43% stronger social cohesion metrics, 37% more equitable benefit distribution, and 29% greater resilience to governance challenges compared to conventional approaches. In Kenya's Aberdare region, Koech *et al.* (2021) found that gender-inclusive forest management groups reported 52% fewer conflicts over resource access and demonstrated 41% stronger institutional sustainability after external project support ended.

Economic returns also improve with gender-inclusive approaches. In a cost-benefit analysis of 18 community afforestation initiatives across Kenya, Wanjala and Kimani, (2023) found that gender-inclusive projects generated 37% higher economic returns over a 10-year period, primarily due to more diverse product portfolios and better maintenance regimes. They noted that while male-dominated initiatives focused predominantly on timber (representing 82% of projected value), gender-inclusive initiatives developed more diversified value streams including fruits, honey, medicinal products, and ecosystem services (timber representing only 43% of total economic value).

Gender-inclusive approaches influence broader policy landscapes. In eastern Africa, Kuiru, and Mugo, 2023) documented how women's forest networks successfully advocated for gender-responsive forest policies, resulting in five countries adopting specific provisions for women's participation in national afforestation programs between 2020-2024. In Kenya specifically, Ndegwa *et al.* (2022) analyzed how women-led community forestry initiatives in water tower ecosystems catalyzed county-level policy reforms, with seven counties adopting gender-responsive budgeting for forest restoration activities between 2021-2024.

Despite substantial progress, significant research gaps remain. First, longitudinal studies examining gender-inclusive afforestation outcomes beyond typical 3–5-year project cycles remain rare but essential for understanding sustainability. Second, more nuanced analysis of intersectionality is needed, as current studies often treat women and men as homogeneous categories despite significant variations based on age, socioeconomic status, ethnicity, and other factors. Wangui and Kimaiyo (2024) have pioneered promising approaches for intersectional analysis in Kenya's pastoral communities, finding that age and clan affiliation significantly moderated gendered forestry outcomes. Methodological innovations are needed. While many studies document differential participation, fewer employ robust methods for attributing ecological outcomes to gender factors specifically. Rigorous counterfactual analysis remains rare, though Kariuki *et al.* (2024) demonstrated promising quasi-experimental approaches in Kenya's Mau ecosystem, controlling for confounding variables while isolating gender effects on forest outcomes.

2.3.2 Community-Led Adaptation

Community-led adaptation (CLA) has emerged as a critical approach to addressing climate change, emphasizing the importance of local knowledge, participation, and decision-making in designing and implementing adaptation strategies. This section reviews empirical studies on CLA, focusing on its principles, implementation challenges, and outcomes, particularly in the context of gender dynamics and regional experiences.

2.3.2.1 Global Learning on Locally Led Climate Action

In recent years, there has been a growing global emphasis on locally led climate action, with initiatives like the Eight Principles for Locally Led Adaptation gaining significant support. Endorsed at the Climate Adaptation Summit in 2021, these principles focus on addressing inequalities in climate change efforts, particularly for vulnerable and marginalized groups, including women and youth (Marek Soanes *et al.*, 2021). Despite this progress, challenges remain in translating these principles into practice. For instance, the Grand Bargain's failure to allocate 25% of funding to local stakeholders highlights the need for innovative strategies and multi-stakeholder collaboration to ensure the success of CLA (Brink and Wamsler, 2019).

The Local Climate Adaptive Living Facility (LoCAL) offers important insights into the implementation of CLA. It combines performance-based climate resilience grants (PBCRGs) with technical support and capacity-building initiatives, empowering local governments to effectively tackle climate challenges (Gumucio *et al.*, 2020). Empirical evidence from LoCAL demonstrates that PBCRGs enhance local governments' capacity to manage climate finance, underscoring the critical role of decentralized governance in climate adaptation (Marek Soanes *et al.*, 2021).

Recent studies also highlight the gendered nature of participation in adaptation efforts. Brink and Wamsler (2019) found that women are more motivated to engage in adaptation activities when they benefit vulnerable community members, emphasizing the importance of values and worldviews in shaping adaptive behavior. This aligns with findings from other studies, which suggest that women's participation in CLA can lead to more inclusive and sustainable outcomes (Djouidi *et al.*, 2021).

2.3.2.2 Regional Experience with Locally Led Climate Action

Regional experiences with CLA reveal significant variations in adaptation strategies between men and women. Recent studies document how men and women often perceive and prioritize different climate-related risks, which subsequently shapes their adaptation strategies in afforestation initiatives. In a multi-country study spanning Kenya, Ethiopia, and Tanzania, Kioko and Muriithi (2023) found women consistently ranked slow-onset climate impacts such as declining soil fertility, reduced water availability, and decreased food security as higher priorities (by an average of 38% higher importance ratings) compared to men, who tended to prioritize sudden extreme events like droughts and floods. These divergent risk perceptions directly influenced species selection preferences, with women preferring more diverse, drought-adapted, and multi-purpose species portfolios. In Kenya's dryland ecosystems, Opiyo *et al.* (2022) conducted risk mapping exercises with 420 community members across four counties, finding women identified 67% more "everyday" climate risks affecting household wellbeing compared to men, while men identified 42% more risks related to livestock and income generation. The study found these divergent risk assessments translated into women advocating for afforestation strategies focused on water conservation, soil protection, and food security, while men prioritized strategies emphasizing livestock fodder production and commercial timber value.

In Kenya, the Government Financing Locally-Led Climate Action (G-FLLoCA) program, launched in 2020, exemplifies the application of CLA principles. G-FLLoCA decentralizes climate finance and decision-making to local levels, empowering communities to design and implement adaptation strategies tailored to their needs (Republic of Kenya, 2021). Counties implementing the County Climate Change Fund (CCCF) model have reported significant progress, particularly in supporting vulnerable and marginalized groups (Crick *et al.*, 2020).

Recent empirical studies further underscore the importance of integrating gender perspectives into CLA. For example, a study by Ampaire *et al.* (2020) in East Africa found that gender-responsive policies enhance the effectiveness of adaptation initiatives by addressing structural inequalities and empowering women. Similarly, research by Djoudi *et al.* (2021) highlights the role of women's leadership in driving sustainable adaptation outcomes, particularly in natural resource management.

Recent studies document how gender influences the social organization of adaptation strategies. In Kenya's central region, Kariuki and Mwangi (2023) found that women were 64% more likely than men to pursue afforestation through collective arrangements involving shared labor, resources, and benefits. Women's collectives enabled members to overcome individual resource constraints through pooled savings, labor rotation systems, and collective negotiation with authorities. Men demonstrated stronger preferences for individual implementation (53% higher rates of individual management) with clearer boundaries around labor contributions and benefit rights.

These patterns appear consistently across diverse contexts. Rahman *et al.* (2022) analyzed social organization strategies in community forestry across 12 countries, finding that women formed collective implementation arrangements at rates 42-78% higher than men across all study regions. The researchers documented how these collective approaches enabled women to overcome resource constraints, share risks, and develop stronger negotiating positions within community institutions.

Despite significant advances in understanding gender-differentiated adaptation strategies, important research gaps remain. First, longitudinal studies tracking how gender-differentiated strategies evolve over time remain rare but essential for understanding adaptive learning processes. Second, while many studies document differences between men's and women's strategies, more nuanced analysis of intra-gender variation based on age, socioeconomic status, ethnicity, and other factors remains underdeveloped. Wangui and Kimaiyo's (2024) pioneering work on intersectional analysis in Kenya's pastoral communities offers promising methodological approaches for addressing this gap.

2.3.3 Factors Impeding Community-Led Adaptation

Despite the growing recognition of the importance of community-led adaptation (CLA), several barriers continue to hinder its effective implementation. Empirical studies highlight a range of challenges, including limited awareness of climate risks, inadequate funding mechanisms, institutional constraints, and gender disparities. This section reviews these barriers, drawing on recent empirical evidence to provide a comprehensive understanding of the factors impeding CLA.

2.3.3.1 Limited Awareness and Capacity

Gender disparities in access to resources fundamentally constrain adaptive capacity. Gumucio *et al.*, (2020) conducted a systematic review of 112 studies across developing countries and found persistent gender gaps in access to agricultural extension services (32% gap), climate-smart technologies (28% gap), and agricultural credit (37% gap).

In Kenya's arid and semi-arid regions, Kogo *et al.* (2021) documented how women-headed households had 41% less access to drought-resistant seeds and 53% less access to irrigation technologies compared to male-headed households. Similarly, Nyukuri (2020) found that women farmers in central Kenya received only 18% of climate adaptation training despite constituting 65% of the agricultural workforce.

A significant barrier to CLA is the limited awareness of climate risks and uncertainties among local actors. Ampaire *et al.* (2020) argue that this lack of awareness hampers the ability of communities to organize, manage, and implement adaptation financing effectively. Empowering local institutions and individuals through capacity-building initiatives is essential for overcoming this barrier. For instance, a study by Patel *et al.* (2020) found that communities with access to climate information and training were better equipped to design and implement adaptation strategies tailored to their specific needs.

2.3.3.2 Funding Gaps and Institutional Constraints

Funding mechanisms for CLA often fail to meet the needs of local actors. Kogo *et al.* (2021) highlight the existence of a "missing middle" in institutional development funding, where resources to support the incubation of local institutions are scarce. Public adaptation funding is typically offered in the form of small grants or large loans, neither of which is suitable for building the long-term capacity of local actors (Ampaire *et al.* (2020)). This funding gap prevents local institutions from establishing a proven track record in financial management, thereby limiting their access to larger funding opportunities.

Recent studies highlight persistent gaps between policy rhetoric and implementation regarding gender integration. Nyasimi *et al.* (2023) analyzed Kenya's climate policies and found that while

80% mentioned gender considerations, only 23% allocated specific resources for gender-responsive implementation. Similarly, Ampaire *et al.* (2022) documented how climate policy development in East Africa remains dominated by technical experts with limited gender expertise, resulting in gender-blind adaptation strategies.

The institutional architecture of climate resilience often undermines meaningful gender integration. Prapti *et al.* (2023) examined 91 countries and found that female representation in national environmental ministries correlated positively with climate policy strength but remained significantly lower than male representation globally. In Kenya specifically, Omolo *et al.* (2021) found that women constituted only 28% of county-level climate committees, despite policies mandating gender-balanced representation.

2.3.3.3 Gender Disparities in Adaptation

Gender disparities are another significant barrier to CLA. Women, who frequently play a central role in agriculture and natural resource management, encounter unique challenges, including limited access to financial resources, labor, and extension services (Assan *et al.*, 2020). A study by Djoudi *et al.*, (2021) demonstrated that gender-responsive adaptation strategies can significantly strengthen the resilience of farming households by addressing these inequalities. For instance, offering women access to credit and training in sustainable agricultural practices can enhance their adaptive capacity and decision-making power.

Gendered social norms significantly influence vulnerability and adaptive capacity. Oloo and Ochola (2022) documented how land tenure insecurity among women in western Kenya limited their ability to implement long-term climate adaptation strategies like agroforestry. Their study found that women had secure rights to only 9% of agricultural land despite providing 60-80% of agricultural labor.

Differential access to information represents another critical barrier. Kogo *et al.* (2021) found that climate information services in sub-Saharan Africa reached 43% fewer women than men, primarily due to gendered differences in mobile phone ownership, literacy levels, and time constraints from unpaid care responsibilities. In northern Kenya, Wanjirunjal and Yatich, (2023) documented how

pastoralist women's exclusion from traditional decision-making forums limited their access to drought early warning information.

Recent studies have further examined the obstacles to CLA and suggested innovative solutions. For example, a study by Ampaire *et al.*, (2020) in East Africa found that participatory climate adaptation approaches, which engage local communities in decision-making, significantly improve the effectiveness of adaptation strategies. Similarly, research by Crick *et al.*, (2020) highlights the success of the CCCF model in Kenya, which decentralizes climate finance and decision-making to local levels, empowering communities to develop and implement adaptation strategies that are tailored to their specific needs.

Empirical evidence demonstrates that multiple barriers impede the effectiveness of community-led adaptation, including limited awareness, funding gaps, institutional constraints, and gender disparities. Addressing these barriers requires a multifaceted approach that includes capacity-building, innovative financing mechanisms, and gender-responsive policies. By empowering local actors and addressing structural inequalities, CLA can enhance climate resilience and contribute to sustainable development.

2.3.4 Opportunities for Gender-Inclusive Climate Resilience

2.3.4.1 Policy and Governance Innovations

Recent literature documents promising policy frameworks that enhance gender integration. Kenya's Climate Change Act of 2021 represents a significant advance by mandating gender-responsive budgeting for climate programs. Wafula and Ongugo (2023) analyzed early implementation and found a 32% increase in funding for gender-specific climate initiatives between 2021-2023, though they noted implementation gaps at county levels.

Globally, Dazé and Terton (2021) identified emerging good practices in National Adaptation Plans, highlighting Bangladesh, Fiji, and Kenya as exemplars for institutionalizing gender analysis throughout the adaptation planning cycle. Their comparative study found that plans with robust gender integration resulted in 27% more adaptation projects addressing gender-specific vulnerabilities.

2.3.4.2 Innovative Financing Mechanisms

Gender-responsive climate financing has expanded significantly. Nyasimi *et al.* (2023) documented how Kenya's County Climate Change Funds pioneered gender-responsive approaches by requiring 30% of adaptation investments benefit women specifically. Their longitudinal study across five counties found these mechanisms increased women's participation in adaptation decision-making by 47% over four years.

Internationally, Climate Investment Funds' (2022) evaluation of gender-tagged climate finance found an 18% increase in gender-responsive financing between 2020-2022, though only 12% of total climate finance explicitly addressed gender inequality. Bryan *et al.* (2021) demonstrated how gender-sensitive microfinance products in Kenya's coastal regions enabled women entrepreneurs to invest in climate-resilient businesses, with 78% reporting increased adaptive capacity.

2.3.4.3 Technology and Knowledge Innovations

Digital innovations have created new pathways for gender-inclusive resilience. Asher *et al.* (2022) evaluated mobile-based climate information services designed specifically for women farmers in Kenya and found 68% higher adoption of climate-smart agricultural practices among participants compared to non-participants. The study highlighted the importance of addressing structural barriers like phone ownership alongside information provision.

Indigenous and local knowledge integration represents another promising frontier. Kimonyo and Ntawuruhunga (2024) documented how centering women's traditional ecological knowledge in community-based adaptation in Rwanda and Kenya enhanced both gender equity and ecological outcomes. Projects that explicitly valued women's specialized knowledge about seed varieties, water sources, and medicinal plants demonstrated 24% higher climate resilience metrics.

This review demonstrates substantial evidence that gender-inclusive approaches enhance climate resilience outcomes across economic, social, and environmental dimensions. However, persistent barriers, institutional, sociocultural, and resource-based, continue to limit gender integration in climate resilience efforts in Kenya and globally. The literature points to several critical paths forward. First, strengthening institutional capacity for gender-responsive climate governance

emerges as a prerequisite for effective implementation. Second, addressing structural barriers like land tenure insecurity and resource access appears fundamental for sustainable outcomes. Third, valuing diverse knowledge systems, particularly women's traditional ecological knowledge, represents an underutilized resource for innovation.



2.5 Summary of Gaps

Despite growing evidence for gender-inclusive approaches, significant knowledge gaps remain. First, longitudinal studies documenting sustained impacts beyond project timeframes are scarce. Second, intersectional analyses examining how gender interacts with other social factors (age, disability, ethnicity) remain limited, though emerging research by Mwangi and Johnson (2024) in Kenya's coastal communities demonstrates promising methodological innovations. Third, rigorous comparative studies quantifying the differential outcomes of gender-responsive versus conventional approaches remain insufficient for informing policy at scale. The empirical review of gender-inclusive climate resilience and CLA reveals significant progress in understanding the importance of integrating gender perspectives and local knowledge into climate adaptation strategies. However, several gaps remain in literature, limiting the effectiveness and inclusivity of these approaches. This section summarizes the key gaps identified in previous studies and highlights how this study aims to address them.

Table 2.1: Summary of Previous Studies, Findings, and Gaps

Author/Year	Focus of Study	Methodology	Findings	Identified Gaps	Focus of the Current Study
Ampaire <i>et al.</i> (2020)	Gender integration in climate policies in East Africa.	Policy analysis, interviews, and case studies.	Inconsistent implementation of gender-responsive policies.	Lack of focus on gender-transformative approaches.	Exploring gender-transformative approaches to address structural inequalities.
Mwangi and Johnson (2024)	Gender differences in adaptation strategies among farmers in Ghana.	Surveys, interviews, and focus group discussions.	Men focus on on-farm practices; women engage in off-farm activities.	Limited exploration of how gender dynamics influence CLA success.	Investigating the interplay between gender dynamics and CLA in the Mau Forest Complex.
Anwer (2021) and Mwakesi <i>et al.</i> (2022)	Financing locally led adaptation.	Literature review and case studies.	Funding gaps and lack of capacity hinder CLA.	Limited research on innovative financing mechanisms.	Proposing innovative financing mechanisms and institutional reforms.
Nabukalu <i>et al.</i> (2022)	Intersection of gender with other factors in shaping vulnerability.	Qualitative analysis and case studies.	Intersectionality shapes vulnerability and adaptive capacities.	Lack of empirical evidence on intersectionality in adaptive capacities.	Examining intersectionality to provide a nuanced understanding of adaptive capacities.

Crick <i>et al.</i> (2020)	The success of the CCCF model in Kenya.	Case study analysis and stakeholder interviews.	Decentralized climate finance empowers local communities.	Limited focus on adapting the model to other contexts.	Providing context-specific insights for CLA in the Mau Forest Complex.
Djoudi <i>et al.</i> (2021) and Asher <i>et al.</i> (2022)	Strengthening women's property rights and access to resources.	Mixed-methods approach, including surveys and interviews.	Strengthening women's rights enhances adaptive capacity.	Need for context-specific insights on gender-responsive CLA.	Integrating gender-responsive strategies into CLA for sustainable outcomes.



2.6 Conceptual Framework

The conceptual framework for this study is designed to explore the linkages between gender-inclusiveness, community-led adaptation strategies, and challenges in the context of afforestation initiatives at the Mau Forest Complex in Kenya. The framework is grounded in the understanding that gender dynamics play a critical role in shaping the effectiveness of community-led adaptation efforts, while various challenges can either hinder or facilitate these efforts. The framework aligns with the research objectives and operationalizes the variables to provide a clear pathway for analysis.

Table 2.2: Conceptual Framework Table

Independent Variables	Linkage with Conceptual Framework (CF)	Linkage with Research Objectives	Expected Influence on Dependent Variable (Community-Led Adaptation to Climate Resilience)
1. Gender-Inclusiveness	Gender perspectives in adaptation influence participation and decision-making.	Examine how gender-inclusiveness influences community-led adaptation (Objective 1).	Higher inclusiveness leads to increased participation and more equitable afforestation efforts.
2. Men's and Women's Adaptation Strategies	Different adaptation strategies contribute differently to afforestation initiatives.	Assess gender-specific adaptation strategies and their implications (Objective 2).	Diverse adaptation strategies enhance afforestation effectiveness.
3. Challenges to Effective Adaptation	Financial, social, and policy-related barriers affect the success of adaptation efforts.	Identify challenges hindering community-led adaptation (Objective 3).	Overcoming barriers can enhance community participation and sustainability.

2.7 Operationalization of Variables

The table below presents the operationalization of variables for the study, including the variable type, constructs, operational definition, and measurement scale.

Variable Type	Variable	Constructs	Operational Definition	Measurement Scale
Independent Variables				
1. Gender-Inclusiveness	Women's participation in decision-making	Percentage of women involved in planning and implementing afforestation initiatives.	Measured through surveys and interviews.	Nominal (e.g., Yes/No) and Ratio (e.g., percentage of women).
	Access to resources	Availability of resources (e.g., land, tools, funding) for women.	Measured through surveys and focus group discussions.	Likert Scale (e.g., 1 = Strongly Disagree to 5 = Strongly Agree).
	Gender-responsive policies	Presence of policies promoting gender equality in adaptation efforts.	Assessed through document analysis and stakeholder interviews.	Nominal (e.g., Yes/No) and Qualitative (e.g., policy content analysis).
2. Men's and Women's Adaptation Strategies	Tree planting	A number of tree-planting initiatives are led by men and women.	Measured through surveys and field observations.	Ratio (e.g., number of trees planted).
	Water conservation	Adoption of water conservation practices by men and women.	Measured through surveys and focus group discussions.	Likert Scale (e.g., 1 = Never to 5 = Always).
	Sustainable agriculture	Use of sustainable agricultural practices by men and women.	Measured through surveys and interviews.	Likert Scale (e.g., 1 = Not at all to 5 = Extensively).
	Community awareness programs	Participation in awareness programs by men and women.	Measured through surveys and attendance records.	Ratio (e.g., number of participants).
3. Challenges to Effective Community-Led Adaptation	Financial constraints	Perceived lack of financial resources for adaptation efforts.	Measured through surveys and interviews.	Likert Scale (e.g., 1 = Not a challenge to 5 = Major challenge).
	Lack of information	Perceived lack of access to climate information and awareness.	Measured through surveys and focus group discussions.	Likert Scale (e.g., 1 = Not a challenge to 5 = Major challenge).
	Gender-specific challenges	Perceived barriers faced by women, such as unequal access to resources.	Measured through surveys and interviews.	Likert Scale (e.g., 1 = Not a challenge to 5 = Major challenge).

Variable Type	Variable	Constructs	Operational Definition	Measurement Scale
	Limited community participation	Perceived lack of community involvement in adaptation efforts.	Measured through surveys and focus group discussions.	Likert Scale (e.g., 1 = Not a challenge to 5 = Major challenge).
Dependent Variable				
Community-Led Adaptation to Climate Resilience	Number of afforestation initiatives	Several afforestation projects were initiated and completed by the community.	Measured through surveys and field observations.	Ratio (e.g., number of initiatives).
	Change in tree cover	Percentage increase or decrease in tree cover over time.	Measured through satellite imagery and field data.	Ratio (e.g., percentage change).
	Community participation rates	Percentage of community members involved in adaptation efforts.	Measured through surveys and attendance records.	Ratio (e.g., percentage of participants).



2.8 Chapter Summary

Chapter 2 delves into the theoretical underpinnings, empirical studies, and the conceptual framework that form the foundation of the research on gender-inclusive climate resilience and community-led adaptation within the Mau Forest Complex's afforestation initiatives in Kenya.

The theoretical framework incorporates three key perspectives. The Theory of Change elucidates how countries structure their climate change adaptation strategies, emphasizing the pivotal role of gender inclusiveness in achieving successful outcomes. The Integral Theory by Ken Wilber broadens the understanding of reality by considering both interior and exterior dimensions, providing a comprehensive lens to analyze adaptation challenges and solutions. The Gender Equality and Social Inclusion (GESI) Framework emphasizes the importance of inclusive policies, particularly in biodiversity and climate change adaptation interventions, advocating for improved access to livelihood assets for all, including women and marginalized populations.

The empirical review critically assesses existing literature, shedding light on the challenges faced in locally led adaptation, the Maputo Declaration's significance in enhancing agricultural productivity in African countries, and the pivotal role of Sustainable Development Goal 5 (SDG 5) in achieving gender equality and empowering women and girls in the context of climate change. The section also explores global and regional experiences with locally led climate action, emphasizing the need to address inequalities and vulnerabilities among marginalized communities.

The conceptual framework encapsulates the study's core elements, focusing on the interplay between gender-inclusive climate resilience, community-led adaptation strategies, and challenges within the Mau Forest Complex. The dependent variable, Community-led Adaptation to Climate Resilience, becomes the focal point, representing the myriad actions and measures adopted by the local community. Gender-inclusiveness, adaptation strategies (distinct for men and women), and challenges serve as the independent variables, forming a complex web of relationships that the study aims to analyze. This conceptual framework provides a roadmap for understanding the nuanced dynamics of climate resilience and adaptation within the unique context of the Mau Forest Complex.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology used to answer the research questions and meet the study's objectives. It acts as a guide for the investigation, detailing the approach, design, data collection techniques, and analytical methods employed to gather and interpret data. The chapter also explains the reasoning behind selecting this methodology and offers a structured framework for carrying out the research.

3.2 Research Philosophy

The research philosophy adopted for this study was **pragmatism**, which emphasizes the practical application of ideas and multiple approaches to address research problems. Pragmatism is particularly suited to this study because it aligns with the mixed-methods research design, allowing for the integration of both quantitative and qualitative data to provide a comprehensive understanding of the research topic. Pragmatism prioritizes research that addresses real-world problems and provides actionable solutions, making it ideal for exploring the practical challenges of gender-inclusive climate resilience and community-led adaptation in afforestation initiatives.

This study aimed at generating actionable insights that can inform both policy and practice, ensuring that the findings are not only theoretically robust but also practically relevant. Furthermore, pragmatism supports the use of diverse methods to capture the complexity of social phenomena, which is crucial for addressing the multifaceted nature of the research questions. This approach ensures that the study remains flexible and adaptable to the dynamic and complex realities of the Mau Forest Complex.

By combining structured questionnaires (quantitative) and in-depth interviews (qualitative), the study captures both numerical trends and rich qualitative insights, providing a holistic understanding of the research problem. The pragmatic philosophy underpins the study's objectives by enabling the identification of practical challenges through a combination of numerical data (e.g., financial constraints) and contextual insights (e.g., gender-specific barriers). Ultimately, pragmatism ensures that the research is problem-centered rather than method-centered, aligning

with the study's goal of contributing to sustainable climate resilience and adaptation efforts in the Mau Forest Complex.

3.3 Research Design

The study used a mixed-methods research design, combining both quantitative and qualitative approaches to thoroughly examine the connections between gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives in the Mau Forest Complex, Kenya. The quantitative component involved structured questionnaires to collect numerical data on key variables such as gender-inclusiveness, adaptation strategies, and challenges, enabling statistical analysis to identify trends and correlations. The qualitative component involved in-depth interviews with key informants to collect detailed, contextual insights into stakeholders' experiences, perceptions, and challenges. This dual approach facilitated data triangulation, improving the validity and reliability of the findings while offering a comprehensive understanding of the research problem. The mixed-methods design aligns with the study's conceptual framework and operationalization of variables, ensuring that both measurable outcomes and contextual nuances are captured, ultimately contributing to a robust and actionable analysis.

3.4 Target Population

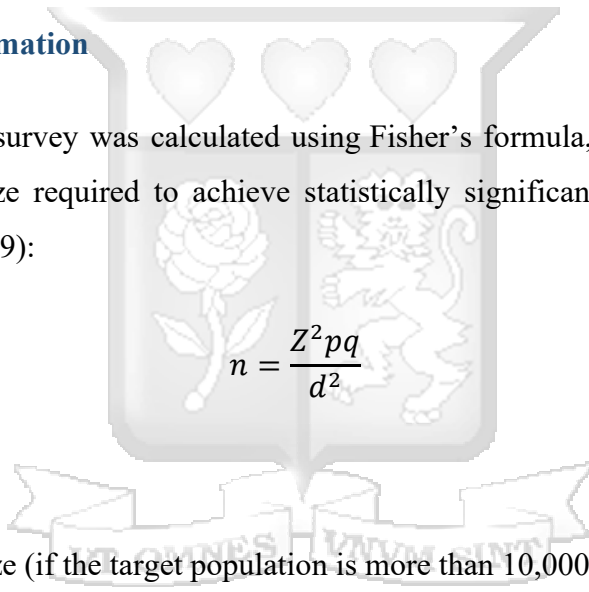
The target population for this study included two main groups: adult residents (384) from local communities within the Mau Forest Complex were targeted and 64 participants per county. The key informants to be selected were 24 from national (6) and county government agencies (6 per county), as well as local experts involved in environmental conservation and agricultural programs. The adult residents were selected from the counties surrounding the Mau Forest Complex, specifically Bomet, Kericho, Nakuru, Nandi, Narok, and Uasin Gishu. These participants were chosen based on their involvement in afforestation activities or their role as primary decision-makers for their households, particularly in farming and natural resource management. The study focused on individual residents rather than entire households to capture diverse perspectives and experiences. The target sample size was 384 adult residents, calculated using Fisher's formula to ensure statistical reliability.

The second group of participants, key informants, included representatives from national and county government agencies, advisory committees, humanitarian organizations, and local experts. The participants were purposively selected for their expertise and active involvement in locally-led climate action initiatives. Key informants included representatives from programs such as the Government Financing Locally–Led Climate Action (G-FLLoCA) and the County Climate Change Fund (CCCF), as well as members of advisory bodies like the multi-sectoral Program Steering Committee (PSC) and the inter-agency Climate Change Technical Advisory Committee (CF-TAC).

3.5 Sampling Design

3.5.1 Sample Size Estimation

The sample size for the survey was calculated using Fisher’s formula, which is widely used to determine the sample size required to achieve statistically significant results. The formula is expressed as (Daniel, 1999):


$$n = \frac{Z^2 pq}{d^2}$$

Where;

n = the desired sample size (if the target population is more than 10,000)

z = the standard normal deviation at the required confidence level of 1.96.

d = the level of statistical significance set which is 0.05

p = the proportion in the characteristics being measured i.e., the proportion of local communities benefiting from the locally-led climate action program in Mau Forest Complex was estimated to be 50% (0.50). There is no estimate available of the proportion in the target population.

$$q = 1 - p \quad (1 - 0.5 = 0.5)$$

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$

$$n = 384 \text{ respondents}$$

Using this formula, the study aimed to survey 384 adult residents from the counties surrounding the Mau Forest Complex (Bomet, Kericho, Nakuru, Nandi, Narok, and Uasin Gishu) and the number was equally distributed across the 6 counties to have 64 participants targeted per county. A total of 370 respondents participated, achieving a high response rate of 96.35%, which enhances the representativeness and reliability of the findings.

For the qualitative component, key informants were purposively selected based on their expertise and involvement in locally-led climate action programs. A maximum of 25 key informants were targeted, but the study successfully interviewed 14 key informants, including representatives from national and county governments (e.g., G-FLLoCA and CCCF), advisory committees, humanitarian organizations, and local experts from households, farms, and schools. These participants provided in-depth insights into the challenges and opportunities in implementing gender-inclusive and community-led adaptation efforts.

3.5.2 Sampling Strategy and Technique

The study employed a two-stage cluster sampling design to ensure equal representation of residents across the counties within the Mau Forest Complex. In the first stage, counties were treated as domains, and wards within each county were selected using the Probability Proportional to Size (PPS) method. This method ensured that wards with larger populations had a higher chance of being included in the sample, reflecting the demographic distribution of the region.

In the second stage, selected wards were divided into rural and urban segments of approximately equal size, which served as the primary sampling units. Households within these segments were then selected using systematic random sampling, ensuring that every household had an equal chance of being included. Within each household, adult residents (both men and women) who were primary decision-makers or actively involved in afforestation activities were identified and

invited to participate in the survey. This approach ensured a balanced representation of gender perspectives, as both men and women were systematically included in the sample.

For the key informant interviews, the researcher first mapped the target population, which included representatives from national and county governments, development partners, and community leaders actively engaged in climate action programs such as PROCOL Kenya. Potential key informants were carefully selected based on their expertise, involvement in relevant programs, and ability to provide valuable insights. Priority was given to individuals from homesteads, farms, and schools, particularly those involved in PROCOL projects, as their firsthand experience offered rich contextual understanding.

3.6 Data Collection Method

The survey targeted adult residents from local communities, focusing on individuals involved in afforestation activities or household decision-making, to capture broad trends and patterns related to gender-inclusiveness, adaptation strategies, and challenges. In contrast, the interviews targeted key informants with specialized knowledge and expertise in climate action programs, including government representatives, advisory committee members, development partners, and local experts. These participants provided detailed, context-specific insights that complemented the quantitative data, offering a deeper understanding of the underlying dynamics and motivations behind gender-inclusive and community-led adaptation efforts. This dual approach ensured a comprehensive analysis of the research problem, combining broad quantitative trends with rich qualitative insights.

3.6.1 Structured Questionnaire

The structured questionnaire was designed to collect quantitative data from adult residents in the local communities surrounding the Mau Forest Complex, specifically from the counties of Bomet, Kericho, Nakuru, Nandi, Narok, and Uasin Gishu. The target respondents were men and women who are primary decision-makers in their households or actively involved in afforestation activities. The questionnaire included a combination of closed-ended questions (e.g., multiple-choice and Likert scale questions) and open-ended questions to allow respondents to provide detailed answers.

The questionnaire was divided into sections:

1. **Sociodemographic Information:** Capturing data on gender, age, education, occupation, and years of residency.
2. **Gender-Inclusiveness and Community-Led Adaptation:** Exploring awareness and perceptions of gender-inclusive practices and their impact on adaptation efforts.
3. **Adaptation Strategies:** Assessing the different strategies employed by men and women and their implications for afforestation initiatives.
4. **Challenges:** Identifying barriers such as financial constraints, lack of information, and gender-specific challenges.

Before the main data collection, a **pre-test** was conducted with a small group of 30 respondents similar to the target population of the Kakamega forest. Feedback from the pre-test was used to refine the questionnaire, ensuring clarity, relevance, and consistency.

3.6.2 In-depth Interview Guide

In addition to the structured questionnaires, in-depth interviews were conducted with key informants to gather qualitative insights. The target participants for the interviews were experts and stakeholders involved in locally-led climate action programs, including:

- **Government Representatives:** From programs such as the Government Financing Locally-Led Climate Action (G-FLLoCA) and the County Climate Change Fund (CCCF).
- **Advisory Committees:** Members of the multi-sectoral Program Steering Committee (PSC) and the inter-agency Climate Change Technical Advisory Committee (CF-TAC).
- **Development Partners:** Representatives from humanitarian organizations and projects like the Prosperity Collaboration Lab Kenya (PROCOL Kenya).
- **Local Experts:** Individuals from households, farms, and schools actively engaged in afforestation and climate adaptation activities.

The interview guide consisted of a structured script with open-ended questions aligned with the research objectives. The interviews began with factual questions to build rapport and gradually delved into the informants' opinions, experiences, and beliefs. The guide was flexible, allowing the researcher to ask follow-up questions and encourage elaboration on specific points. This

approach ensured that the interviews were dynamic and responsive to the informants' contributions, providing rich, contextual insights into the challenges and opportunities in implementing gender-inclusive and community-led adaptation efforts.

3.7 Research Quality

Maintaining research quality was paramount to ensuring the credibility and rigour of the study's findings. Two key concepts, validity and reliability, were meticulously addressed throughout the research process to enhance the quality and trustworthiness of the study.

3.7.1 Validity

To ensure content validity, the structured questionnaire and interview guide were carefully designed to align with the research objectives, covering all relevant aspects of gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives. The research instruments were reviewed by experts in the field, including academic advisors and practitioners, to verify their relevance and comprehensiveness. Before the main data collection, a small group (10 respondents) was used for pilot testing from the target population, including adult residents from local communities and key informants involved in climate action programs.

These participants reviewed the questionnaire and interview guide for clarity, appropriateness, and ease of understanding. Their feedback highlighted areas for improvement, such as ambiguous wording and complex phrasing, which were subsequently refined to enhance the instruments' clarity and relevance. The pilot test responses were analyzed to identify and address potential issues, ensuring that the final tools were well-suited for capturing accurate and meaningful data from the target population. This process strengthened the validity of the research instruments, ensuring they effectively measured the intended constructs.

3.7.2 Reliability

To assess the test-retest reliability of the structured questionnaire, a subset of participants was asked to complete the questionnaire twice, with a time gap between the two administrations. The responses from both sessions were then compared to evaluate the consistency of the participants' answers. This process ensured that the instrument yields stable results over time. For sections of

the questionnaire with multiple items measuring the same construct (e.g., Likert scale questions), and the use of Cronbach's alpha coefficient was key to determining the internal consistency. A high alpha value indicated that the items are reliably measuring the same underlying concept.

3.8 Data Analysis

The data gathered from the structured questionnaires and in-depth interviews were subjected to an extensive analysis process to extract valuable insights and address the study's research objectives. Both the quantitative and qualitative data were analyzed using suitable methods to ensure a comprehensive examination of the key research themes.

3.8.1 Quantitative Data Analysis

Quantitative data gathered from the structured questionnaires were analyzed using IBM SPSS Statistics software, employing a range of statistical techniques. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were calculated to summarize the demographic characteristics of the respondents and key variables related to gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives. Pearson's correlation coefficient was used to examine relationships between variables, helping to identify potential associations, such as the connection between gender perspectives and participation in adaptation efforts. Additionally, multiple regression analysis was performed to investigate predictive relationships between dependent and independent variables, such as determining whether demographic factors like age, gender, and education affect attitudes toward afforestation initiatives.

3.8.2 Qualitative Data Analysis

Qualitative data gathered from in-depth interviews were analyzed thematically to identify recurring patterns, themes, and insights. The process of qualitative data analysis involved several steps: First, interview recordings were transcribed verbatim to accurately convert spoken words into text, ensuring a faithful representation of participants' responses. Researchers then familiarized themselves with the interview data by reading and re-reading the transcripts to develop a comprehensive understanding of the content. During open coding, researchers identified and labeled initial codes that captured key concepts, ideas, and themes present in the data. This

process involved breaking down the data into smaller meaningful units; Researchers categorized and grouped related codes to form overarching themes and subthemes. This process helped in organizing and structuring the data; throughout the analysis, researchers compared new data with previously coded data to ensure consistency and refine emerging themes. This iterative process allowed for the development of a comprehensive understanding of the data; and once themes were established, researchers interpreted the findings within the context of the research objectives. This involved drawing connections between themes and discussing their implications.

3.8.3 Triangulation

The study used a triangulation approach, combining both quantitative and qualitative data analysis methods to strengthen the reliability and validity of the findings. Quantitative data offered numerical insights into the prevalence of specific attitudes, behaviors, and relationships between variables, while qualitative data delved into the depth of participants' experiences, providing a richer understanding of the underlying reasons and motivations. By integrating these approaches, the research aimed to achieve a comprehensive understanding of the complex dynamics related to gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives. Triangulation allowed for cross-validation of findings, identification of converging patterns, and a more nuanced perspective on the research themes. This combined methodology strengthened the credibility and robustness of the study's conclusions, yielding valuable insights for both theory and practice.

3.9 Ethical Considerations

The researcher received ethical approval from the National Commission for Science, Technology, and Innovation (NACOSTI), in accordance with the guidelines established by Strathmore University's Institutional Ethics Review Committee (SU-IERC). Permission to contact national and county government offices, as well as other relevant development partners' offices, was obtained from the respective sectoral and departmental heads. Respondents who agreed to participate in the research were assured of anonymity and confidentiality to ensure the accuracy of the information provided. This was clearly communicated before administering the questionnaires or conducting interviews and was documented in writing where applicable.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.0 Introduction

This chapter presents the findings from the analysis of the collected data, structured into two main sections. The first section outlines the results from the quantitative analysis, addressing the research-specific objectives. The second section presents the qualitative findings, based on interviews with key informants from national and county government agencies involved in locally-led climate action programs, as well as local experts engaged in environmental conservation and agricultural initiatives within the Mau Forest Complex.

4.1 Response Rate

The study targeted a sample size of 384 adult residents, which was equally distributed (64) across the 6 counties surrounding the Mau Forest Complex, specifically Bomet, Kericho, Nakuru, Nandi, Narok, and Uasin Gishu. A total of 370 respondents participated, achieving a high response rate of 96.35%, which reflects strong community engagement and enhances the credibility and representativeness of the findings. The sample was distributed proportionately across the counties based on population size and geographical representation, with Nakuru having the highest number of respondents (112, 30.3%) due to its larger population, followed by Narok and Uasin Gishu (60 each, 16.2%), Kericho (47, 12.7%), Bomet (45, 12.2%), and Nandi (46, 12.4%). The selection criteria focused on adults who were primary decision-makers in their households or actively involved in afforestation activities, ensuring that the sample captured diverse perspectives from both men and women. The high response rate minimizes the risk of non-response bias, as the characteristics of non-respondents are unlikely to differ significantly from those who participated, thereby strengthening the reliability of the results.

For the qualitative component, the study targeted a maximum of 25 key informants but successfully interviewed 14 participants, including representatives from national and county governments (e.g., G-FLLoCA and CCCF), advisory committees, humanitarian organizations, and local experts from households, farms, and schools. The response rate for interviews was 60%,

which is considered satisfactory for qualitative research, as it allowed for in-depth insights from a diverse range of stakeholders. The key informants were purposively selected based on their expertise and involvement in locally-led climate action programs, ensuring that their perspectives were relevant and valuable. While the interview response rate was lower than the survey, the quality and depth of the data collected from these participants provided rich, contextual insights that complemented the quantitative findings, ensuring a comprehensive understanding of the research problem.

4.2 Quantitative and Qualitative Analysis

The quantitative data collected through structured questionnaires were analyzed to identify patterns, trends, and relationships among key variables related to gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the sociodemographic characteristics of respondents and their responses to key questions. Additionally, Pearson's correlation coefficient was employed to explore relationships between variables, such as the influence of gender-inclusiveness on adaptation efforts. This statistical analysis provided a robust foundation for understanding the quantitative dimensions of the research problem, complementing the qualitative insights and contributing to a comprehensive analysis of the study's objectives.

To analyze the qualitative data, thematic analysis was employed, enabling the identification of recurring patterns, themes, and issues across the interviews. This method allows for systematic categorization of the responses, offering a comprehensive view of how gender inclusivity, community-led adaptation strategies, and the associated challenges and barriers are perceived and addressed by those directly involved. The insights gained from this analysis are invaluable in understanding the complexities of afforestation initiatives in the Mau Forest Complex, particularly in relation to the roles of men and women and the impact of gender-specific approaches on the success and sustainability of these efforts.

4.2.1 Sociodemographic Characteristics

The sociodemographic characteristics of the selected adult residents from the study on gender-inclusive climate resilience and community-led adaptation in afforestation initiatives at the Mau Forest Complex reveal insightful patterns regarding the population's composition. Among the 370 respondents, the majority were male, accounting for 68.1% (252 respondents), while females made up 31.9% (118 respondents). This indicates a significant gender imbalance, suggesting that men were more actively involved in or available for the survey, which may reflect traditional gender roles in this region, especially in agricultural or decision-making activities related to afforestation.

Table 4. 1: Sociodemographic factors of the selected adult residents

Sociodemographic Factors	Number	Percent (%)
Gender		
Male	252	68.1
Female	118	31.9
Age		
18-25	160	43.2
26-35	120	32.4
36-50	59	15.9
>50	31	8.4
Educational Background		
No formal education	3	.8
Primary education	16	4.3
Secondary education	51	13.8
Tertiary education	300	81.1
Occupation		
Farmer	79	21.4
Government employee	57	15.4
Private sector employee	57	15.4
Self-employed	90	24.3
Student	87	23.5
County		
Bomet	45	12.2
Kericho	47	12.7
Nakuru	112	30.3
Nandi	46	12.4
Narok	60	16.2

Uasin Gishu	60	16.2
Years of Residency in Mau Forest Complex		
Less than 1 year	17	4.6
1-5 years	69	18.6
6-10 years	32	8.6
11-15 years	27	7.3
More than 15 years	225	60.8

Source: Research Data (2024)

In terms of age distribution, the largest age group was 18-25 years, representing 43.2% (160 respondents) of the sample. This substantial representation of younger adults suggests that afforestation and climate resilience efforts are drawing interest from the youth, potentially due to growing environmental awareness. The second-largest age group was 26-35 years, comprising 32.4% (120 respondents), followed by individuals aged 36-50 years (15.9%, or 59 respondents) and those above 50 years (8.4%, or 31 respondents). This demographic profile highlights the dominant presence of younger and middle-aged adults in community-led adaptation efforts, possibly indicating that these age groups are more actively involved in or concerned with long-term environmental sustainability.

In terms of education, a notable majority (81.1%) of the respondents had attained tertiary education, indicating a relatively high level of educational attainment among the study participants. This finding could suggest that more educated individuals may have a greater awareness of environmental issues and the importance of climate adaptation efforts. A smaller percentage had secondary education (13.8%), and even fewer had primary education (4.3%) or no formal education (0.8%). This educational profile suggests that the surveyed community members were well-educated overall, potentially influencing their engagement and understanding of afforestation initiatives and climate resilience strategies.

The occupational distribution of the participants was relatively diverse. The largest group was self-employed individuals, constituting 24.3% of the sample, followed closely by students at 23.5%. Farmers represented 21.4%, which reflects the area's agricultural orientation and its direct relevance to afforestation initiatives. Government employees and private-sector employees each made up 15.4% of the respondents. The occupational diversity shows that the study captured a

broad spectrum of livelihoods, which may contribute to varied perspectives on afforestation and community adaptation efforts.

Geographically, the sample was drawn from six counties within the Mau Forest Complex. Nakuru County had the highest representation, with 30.3% (112 respondents), followed by Narok and Uasin Gishu counties, each with 16.2% (60 respondents), and Kericho with 12.7% (47 respondents). Bomet and Nandi counties were also represented, contributing 12.2% (45 respondents) and 12.4% (46 respondents), respectively. This distribution reflects the geographical spread of the Mau Forest Complex and provides a broad view of community adaptation across different regions of the forest.

Finally, the years of residency data showed that the majority of respondents (60.8%) had lived in the Mau Forest Complex for more than 15 years, suggesting a strong level of long-term attachment to the area. Residents who had lived in the region for 1-5 years made up 18.6%, while 8.6% had resided there for 6-10 years. A smaller proportion, 7.3%, had lived in the area for 11-15 years, and only 4.6% had been residents for less than one year. This indicates that a significant portion of the population had long-standing ties to the Mau Forest, which may influence their commitment to afforestation and adaptation initiatives due to their familiarity with the area's environmental challenges and opportunities.

4.2.2 Gender-Inclusiveness and Community-Led Adaptation

A systematic questionnaire was used to collect responses from the participants, and the results were summarized using means and standard deviations. The interpretation of the mean values followed a specific criterion: a mean score of less than 1.49 indicated strong disagreement, 1.50 to 2.49 represented disagreement, 2.50 to 3.49 signified moderate agreement, 3.50 to 4.19 indicated agreement, and a score greater than 4.20 was interpreted as strong agreement.

4.2.2.1 Analysis of gender-inclusiveness and community-led adaptation

Familiarity with Gender-Inclusive Practices (Mean = 2.09, Std. Deviation = 1.165)

The mean score of 2.09 indicates that participants generally lack familiarity with gender-inclusive practices in community-led adaptation efforts within the Mau Forest Complex. This score falls within the "disagree" range, suggesting that most respondents either have limited awareness or are unaware of the gender-inclusive strategies being implemented in afforestation initiatives. The relatively high standard deviation of 1.165 points to considerable variation in the responses, implying that while some individuals may know gender-related issues, others are less informed. This highlights the need for increased awareness and education on the topic (see Table 4.2).

Table 4. 2: Analysis of gender-inclusiveness and community-led adaptation in afforestation initiatives

Variables	N	Mean	Std. Deviation
1. How familiar are you with gender-inclusive practices in community-led adaptation efforts within Mau Forest Complex?	370	2.09	1.165
2. In your observation, do you believe gender perspectives are adequately integrated into the planning and implementing afforestation initiatives?	370	3.65	0.974
3. To what extent do you think gender inclusivity contributes to the success of community-led adaptation efforts in the context of afforestation?	370	4.05	0.914
4. Have you personally witnessed any positive outcomes or benefits resulting from gender-inclusive practices in community-led adaptation within the Mau Forest Complex?	370	3.91	1.091
5. Do you think there is a need for more emphasis on gender-inclusive approaches to further enhance the effectiveness of community-led adaptation in afforestation initiatives?	370	4.33	0.620

Source: Research Data (2024)

Integration of Gender Perspectives in Afforestation Initiatives (Mean = 3.65, Std. Deviation = 0.974)

A mean score of 3.65 indicates a general agreement among respondents that gender perspectives are adequately integrated into the planning and implementing afforestation initiatives. This finding suggests that many participants believe that afforestation efforts in the Mau Forest Complex are inclusive of gender considerations, though not without some room for improvement. The moderate standard deviation (0.974) implies a reasonable level of consensus among respondents, though there are differing views, likely due to varying levels of engagement or observation of these initiatives.

The above results are in line with one informant who emphasized the importance of including women in decision-making processes and highlighted the current gaps:

“Although there have been attempts to integrate gender perspectives, the process is still largely dominated by men. Women are often seen as beneficiaries rather than active participants in decision-making. For example, in many afforestation projects, women are involved in activities such as tree planting or community mobilization, but when it comes to leadership roles or strategic planning, men are the ones making decisions. This not only limits the scope of women's contributions but also affects the sustainability of these initiatives. Women bring a unique perspective, especially regarding the use of forest resources, but this potential is often underutilized.” (Key Informant, County Forester)

Contribution of Gender Inclusivity to the Success of Community-Led Adaptation (Mean = 4.05, Std. Deviation = 0.914)

With a mean of 4.05, participants largely agree that gender inclusivity plays a significant role in the success of community-led adaptation efforts, particularly in afforestation. This emphasizes the recognized value of incorporating gender perspectives to enhance the effectiveness of local adaptation strategies. The relatively low standard deviation (0.914) suggests strong consensus on this point, reflecting widespread recognition that inclusive practices contribute positively to afforestation initiatives and overall climate resilience in the Mau Forest Complex.

Positive Outcomes from Gender-Inclusive Practices (Mean = 3.91, Std. Deviation = 1.091)

The mean score of 3.91 indicates that many respondents have personally witnessed positive outcomes from gender-inclusive practices in community-led adaptation efforts. This suggests that tangible benefits have been observed, such as increased participation of both men and women, improved cooperation, or better implementation of afforestation initiatives. However, the higher standard deviation (1.091) shows some variation in personal experiences, implying that while positive results are apparent to many, some individuals may not have directly observed these outcomes or may view them less favorably.

Need for More Emphasis on Gender-Inclusive Approaches (Mean = 4.33, Std. Deviation = 0.620)

A strong agreement (mean = 4.33) is reflected in participants' belief that there is a need for more emphasis on gender-inclusive approaches to enhance the effectiveness of community-led adaptation in afforestation initiatives. This result suggests a strong consensus on the importance of continuing to integrate and prioritize gender perspectives to improve the sustainability and success of these efforts. The low standard deviation (0.620) highlights a near-unanimous recognition of the need for further efforts to enhance gender inclusivity, pointing to an area of significant potential improvement in future policies and practices.

4.2.2.2 Correlation Analysis of gender-inclusiveness and community-led adaptation

The correlation analysis, conducted using Spearman's rho, explores the relationships between variables related to gender-inclusiveness and community-led adaptation in afforestation initiatives within the Mau Forest Complex. This analysis aligns with Objective 1: Examine how gender-inclusiveness influences community-led adaptation in afforestation initiatives at Mau Forest Complex. The independent variable is gender-inclusiveness, and the dependent variable is a community-led adaptation to climate resilience. The results, summarized in Table 4.3, reveal significant relationships that provide insights into how gender-inclusive practices impact adaptation efforts.

Key Findings

Familiarity with Gender-Inclusive Practices:

A significant negative correlation ($r = -0.267$, $p < 0.01$) was found between familiarity with gender-inclusive practices and the perceived integration of gender perspectives in afforestation initiatives. This suggests that individuals who are more familiar with gender-inclusive practices tend to be more critical of the extent to which gender perspectives are integrated into adaptation efforts. A weaker but still significant negative correlation ($r = -0.105$, $p < 0.05$) indicates that greater familiarity with gender-inclusive practices is associated with lower perceived contributions of these practices to adaptation success. This may reflect a heightened awareness of gaps or challenges in implementation. A stronger negative correlation ($r = -0.441$, $p < 0.01$) reveals that familiarity with gender-inclusive practices is linked to fewer observed positive outcomes, highlighting a potential disconnect between knowledge and perceived effectiveness. A significant negative correlation ($r = -0.177$, $p < 0.01$) suggests that those familiar with gender-inclusive approaches are less likely to advocate for greater emphasis on these strategies, possibly indicating a belief that other areas require more attention.

Table 4. 3: Correlation analysis of gender-inclusiveness and community-led adaptation in afforestation initiatives (Spearman's rho)

		Familiarity with gender-inclusive practices in community-led adaptation	Gender perspectives integrated into the planning & implementation of afforestation initiatives	Gender inclusivity contributing to community-led adaptation efforts	Positive outcomes from gender-inclusive practices in community-led adaptation	Emphasis on gender-inclusive approaches to enhance community-led adaptation
Familiarity with gender-inclusive practices in community-led adaptation	Correlation Coefficient Sig. (2-tailed) N	N/A	-.267** .000 370	-.105* .044 370	-.441** .000 370	-.177** .001 370
Gender perspectives integrated into the planning &	Correlation Coefficient Sig. (2-tailed)	-.267** .000	N/A	.281** .000	.399** .000	.080 .124

implementation of N afforestation initiatives		370		370	370	370
Gender inclusivity contributing to community-led adaptation efforts	Correlation Coefficient	-.105*	.281**		.360**	.363**
	Sig. (2- tailed)	.044	.000	N/A	.000	.000
	N	370	370		370	370
Positive outcomes from gender- inclusive practices in community-led adaptation	Correlation Coefficient	-.441**	.399**	.360**		.202**
	Sig. (2- tailed)	.000	.000	.000	N/A	.000
	N	370	370	370		370
Emphasis on gender-inclusive approaches to enhance community-led adaptation	Correlation Coefficient	-.177**	.080	.363**	.202**	
	Sig. (2- tailed)	.001	.124	.000	.000	N/A
	N	370	370	370	370	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data (2024)

Integration of Gender Perspectives:

A significant positive correlation ($r = 0.281$, $p < 0.01$) shows that participants who perceive gender perspectives as well-integrated into afforestation initiatives also believe that gender inclusivity significantly contributes to adaptation success. A stronger positive correlation ($r = 0.399$, $p < 0.01$) indicates that greater integration of gender perspectives is associated with more observed positive outcomes from gender-inclusive practices. However, there is no significant correlation ($r = 0.080$, $p > 0.05$) between the perceived integration of gender perspectives and the need for greater emphasis on gender inclusivity, suggesting that those who view current integration as adequate may not see the need for further focus.

Contribution of Gender Inclusivity to Adaptation Success:

A moderately strong positive correlation ($r = 0.360, p < 0.01$) indicates that participants who believe gender inclusivity contributes to adaptation success are more likely to observe positive outcomes from gender-inclusive practices. A similar positive correlation ($r = 0.363, p < 0.01$) suggests that those who perceive gender inclusivity as essential to adaptation success also advocate for greater emphasis on gender-inclusive approaches.

Positive Outcomes from Gender-Inclusive Practices:

Based on the findings, there was a strong positive correlation ($r = 0.399, p < 0.01$) shows that participants who witness positive outcomes from gender-inclusive practices are more likely to perceive gender perspectives as well-integrated into afforestation initiatives. A weaker but still significant positive correlation ($r = 0.202, p < 0.01$) indicates that positive experiences with gender-inclusive practices reinforce the belief in the need for greater emphasis on inclusivity.

Emphasis on Gender-Inclusive Approaches:

A significant positive correlation ($r = 0.363, p < 0.01$) suggests that participants who advocate for greater emphasis on gender-inclusive approaches also believe that gender inclusivity contributes to adaptation success. A weaker but significant positive correlation ($r = 0.202, p < 0.01$) indicates that those who emphasize gender-inclusive approaches are more likely to have observed positive outcomes from these practices.

The correlation analysis reveals complex relationships between gender-inclusiveness and community-led adaptation. While greater familiarity with gender-inclusive practices is associated with critical views on their integration and effectiveness, the perceived integration of gender perspectives is positively linked to adaptation success and observed positive outcomes. The study generated findings that were key to addressing gaps in awareness and implementation to strengthen the role of gender-inclusiveness in enhancing community-led adaptation efforts. The results additionally had valuable insights directed to policymakers and practitioners aiming to promote gender-responsive climate resilience initiatives in the Mau Forest Complex.

Additional findings from a key informant were in sync with the study findings on the importance of women's involvement in shaping long-term strategies:

“Women, especially those involved in daily forest activities like fuelwood collection and herbal medicine gathering, have a deep understanding of the forest's regenerative capacity. They are often the first to notice environmental changes and the ones directly impacted by deforestation. When actively engaged in decision-making, the adaptation strategies are more holistic. For example, in one of our projects, when women were involved, they advocated for agroforestry practices that not only increased tree cover but also provided food security. This dual benefit would have been overlooked if only men were at the table.” (Key Informant, CSO Representative).

4.2.3 Community-Led Adaptation Strategies of Men and Women

4.2.3.1 Adaptation strategies are predominantly undertaken by men and women

Tree planting stands out as the most popular adaptation strategy for both men and women, with 58.9% of men and 43.8% of women involved. This indicates that men are more actively engaged in tree planting than women, possibly due to gendered roles or access to resources needed for such activities.

Water conservation efforts are undertaken by 27.0% of men and 24.1% of women, showing relatively balanced participation in this essential environmental strategy. However, men are slightly more involved than women, potentially reflecting traditional male responsibilities tied to managing larger environmental or infrastructural tasks. Interestingly, sustainable agriculture practices show a reverse trend, with 38.1% of women participating compared to 33.0% of men. This higher involvement of women may reflect their significant role in food production and household subsistence farming, particularly in rural communities where women are primary caretakers of food security.

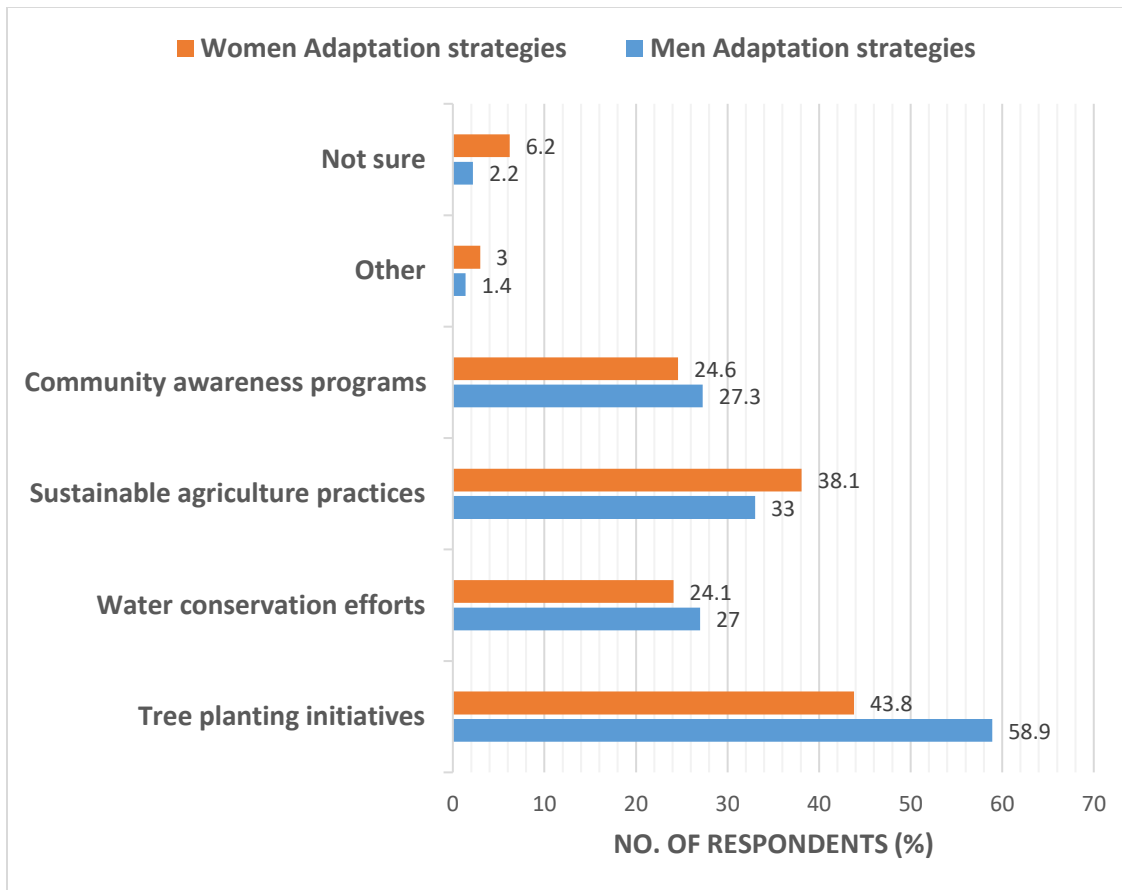


Figure 4. 1: Adaptation strategies predominantly undertaken by men and women

Source: Research Data (2024)

In community awareness programs, men (27.3%) slightly outnumber women (24.6%), though the gap is narrow, indicating that both genders play active roles in promoting environmental awareness within the community. The slight male dominance here could be due to men being more present in public forums or leadership roles within the community. For the “other” category, 1.4% of men and 3.0% of women participated, with women showing more involvement in unspecified adaptation activities. This may represent women’s participation in informal or unrecognized efforts. Lastly, a notable 6.2% of women and 2.2% of men reported being unsure about their engagement in adaptation strategies, suggesting that women may feel less informed or more uncertain about their roles in these initiatives.

These findings agreed with the opinion given by a county agricultural officer on the distinct approaches used by men and women:

“Men tend to focus on larger-scale, physical activities like tree planting in areas with high degradation, while women are more engaged in ongoing maintenance and sustainable agriculture practices. For instance, women incorporate agroforestry methods that not only support tree growth but also ensure food security through crop cultivation. In many cases, women are the ones maintaining the health of the planted trees, ensuring they are watered and protected from livestock. Meanwhile, men are more likely to participate in community meetings where major decisions are made, but the follow-through often depends heavily on the contributions of women.” (Key Informant, Sub-County Agricultural Officer)

4.2.3.2 Analysis of community-led adaptation strategies of men and women

The analysis of community-led adaptation strategies of men and women in the Mau Forest Complex reveals that both genders contribute significantly to the success of afforestation initiatives, with slightly varying perceptions of their impact.

Table 4. 4: Analysis of community-led adaptation strategies of men and women

Variables	N	Mean	Std. Deviation
1. In your opinion, how do the different adaptation strategies employed by men contribute to the success of afforestation initiatives in the Mau Forest Complex?	370	4.06	1.002
2. Likewise, how do the different adaptation strategies employed by women contribute to the success of afforestation initiatives in the Mau Forest Complex?	370	4.00	1.089
3. Do you believe that integrating both men's and women's adaptation strategies is essential for the overall success of afforestation initiatives in the Mau Forest Complex?	370	4.29	0.885

Source: Research Data (2024)

For the first variable, respondents rated the contribution of men’s adaptation strategies to the success of afforestation initiatives with a mean score of 4.06 and a standard deviation of 1.002. This indicates a strong agreement among participants that men's strategies, such as tree planting, water conservation, and community leadership roles, are highly influential in driving afforestation efforts forward. The relatively low standard deviation suggests a general consensus on this perception.

Similarly, for the second variable, the contribution of women's adaptation strategies to afforestation initiatives was rated with a mean score of 4.00 and a slightly higher standard deviation of 1.089. This reflects a strong agreement that women's strategies, such as sustainable agriculture practices and local resource management, are also vital to the success of afforestation. The slightly higher standard deviation could suggest some variability in opinions, possibly due to differing views on the recognition of women's roles in these efforts.

The third variable highlights the importance of integrating both men's and women's adaptation strategies, receiving the highest mean score of 4.29 and a lower standard deviation of 0.885. This strong agreement suggests that respondents overwhelmingly believe that the success of afforestation initiatives in the Mau Forest Complex relies on the combined efforts of both genders. The relatively low standard deviation indicates widespread consensus on the critical need for gender-inclusive approaches in community-led adaptation strategies.

These findings agreed with what a program manager from a local conservation initiative indicated that:

"We've seen that when men and women work together, the outcomes are much better. Men's involvement brings the labor needed for large-scale planting, while women's knowledge of sustainable farming helps ensure the trees are nurtured and protected. In one project, women were instrumental in teaching the community about the benefits of agroforestry, which increased tree survival rates. Without women's participation, a lot of these trees would not have survived." (Key Informant, Program Manager)

4.2.3.3 Correlation analysis of community-led adaptation strategies of men and women

The correlation analysis, conducted using Spearman's rho, examines the relationships between the adaptation strategies employed by men and women and their combined impact on the success of afforestation initiatives in the Mau Forest Complex. This analysis aligns with Objective 2: Assess the different community-led adaptation strategies of men and women and their implications on afforestation initiatives at Mau Forest Complex. The independent variables are men's and women's adaptation strategies, and the dependent variable is community-led adaptation to climate

resilience. The results, summarized in Table 4.5, reveal significant relationships that highlight the complementary roles of men and women in enhancing adaptation efforts.

Key Findings

Correlation Between Men’s and Women’s Adaptation Strategies:

A strong positive correlation ($r = 0.626$, $p < 0.01$) was found between the adaptation strategies employed by men and those employed by women. This indicates that the strategies of both genders are closely related and complementary, contributing jointly to the success of afforestation initiatives. The finding underscores the importance of recognizing and integrating the distinct yet interconnected roles of men and women in adaptation efforts.

Correlation Between Men’s Strategies and the Need for Integration:

A significant positive correlation ($r = 0.416$, $p < 0.01$) shows that the more respondents recognize the value of men’s adaptation strategies, the more they agree that integrating both men’s and women’s strategies is essential for success. This reflects an understanding that men’s contributions, such as tree planting and water conservation, need to be complemented by women’s efforts, such as sustainable agriculture and community awareness programs, to achieve sustainable outcomes.

Table 4. 5: Correlation analysis of community-led adaptation strategies of men and women (Spearman's rho)

		Different adaptation strategies employed by men contributing to the success of afforestation initiatives	Different adaptation strategies employed by women contributing to the success of afforestation initiatives	Integrating both men's and women's adaptation strategies is essential for the overall success of afforestation initiatives
Different adaptation strategies employed by men contributing to	Correlation Coefficient Sig. (2-tailed)	N/A	.626** .000	.416** .000

the success of afforestation initiatives	N		370	370
Different adaptation strategies employed by women contributing to the success of afforestation initiatives	Correlation Coefficient	.626**		.403**
	Sig. (2-tailed)	.000	N/A	.000
	N	370		370
Integrating both men's and women's adaptation strategies is essential for the overall success of afforestation initiatives	Correlation Coefficient	.416**	.403**	
	Sig. (2-tailed)	.000	.000	N/A
	N	370	370	

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research Data (2024)

Correlation Between Women’s Strategies and the Need for Integration:

A significant positive correlation ($r = 0.403$, $p < 0.01$) indicates that the more respondents value women’s adaptation strategies, the more they perceive the need for a holistic, gender-inclusive approach. This highlights the critical role of women’s strategies in enhancing adaptation efforts and reinforces the importance of integrating gender perspectives into afforestation initiatives.

The correlation analysis demonstrates a strong interdependence between the adaptation strategies of men and women, with both contributing significantly to the success of afforestation initiatives. The findings reveal that while men and women may adopt different approaches, their strategies are complementary and work in tandem to enhance the effectiveness of community-led adaptation. The positive correlations between the recognition of men’s and women’s strategies and the belief in the necessity of integration underscore the importance of a gender-inclusive approach to achieving sustainable outcomes. These results provide valuable insights for policymakers and practitioners aiming to strengthen community-led adaptation efforts in the Mau Forest Complex by leveraging the unique contributions of both men and women.

4.2.4 Challenges to Effective Community-Led Adaptation

4.2.4.1 Analysis of challenges to effective community-led adaptation

The analysis of challenges to effective community-led adaptation in the Mau Forest Complex highlights several significant barriers that impact the success of climate resilience efforts. These

challenges, as rated by respondents, show varying degrees of severity but collectively underscore the obstacles that local communities face in their adaptation strategies.

A lack of financial resources is identified as one of the most pressing challenges, reflected by a mean score of 3.97 and a standard deviation of 1.218. This indicates that financial constraints are widely recognized as a major hurdle to effective adaptation. Many community-led initiatives, including afforestation and conservation activities, require funding for resources, tools, and training. The high mean score reflects the perception that without adequate financial support, local communities struggle to implement and sustain climate resilience strategies.

Insufficient information and awareness also pose a notable challenge, with a mean score of 3.80 and a standard deviation of 1.097. This suggests that many community members may lack access to the necessary information and knowledge to effectively engage in adaptation efforts. Awareness campaigns and educational programs are crucial in equipping people with the skills and understanding required for climate resilience. The relatively high standard deviation reflects some variability in respondents' experiences, indicating that while some communities may have access to information, others may be more marginalized in this regard.

Table 4. 6: Analysis of challenges to effective community-led adaptation

Variables	N	Mean	Std. Deviation
1. In your experience, how significant is the challenge of a lack of financial resources in hindering effective community-led adaptation to climate resilience in the Mau Forest Complex?	370	3.97	1.218
2. To what extent do you perceive insufficient information and awareness as a challenge to community-led adaptation efforts in the Mau Forest Complex?	370	3.80	1.097
3. How prevalent do you think gender-specific challenges, such as unequal access to resources, impact the success of community-led adaptation among men and women in the Mau Forest Complex?	370	3.89	.956
4. In your opinion, how does limited community participation hinder effective community-led adaptation to climate resilience in the Mau Forest Complex?	370	3.99	.986

Source: Research Data (2024)

Gender-specific challenges, such as unequal access to resources, were also identified as significant barriers, with a mean score of 3.89 and a standard deviation of 0.956. This finding highlights the persistent gender inequalities that affect community-led adaptation efforts. Women, in particular, may face more obstacles in accessing land, finances, and decision-making platforms, which in turn limits their ability to contribute fully to adaptation initiatives. The relatively lower standard deviation suggests more consistent agreement among respondents that gender disparities are a widespread issue.

Lastly, limited community participation was rated as another significant challenge, with a mean score of 3.99 and a standard deviation of 0.986. This finding suggests that despite the importance of collective action, not all community members are actively involved in adaptation efforts. Factors such as a lack of engagement, leadership structures, or incentives may deter participation, which undermines the effectiveness of community-led strategies. The relatively low standard deviation indicates that this is a commonly perceived challenge across different communities.

The above findings were in sync with the opinion given by a key informant, a civil society leader working on environmental conservation, who highlighted these challenges in a powerful statement:

“One of the biggest challenges is access to resources. Men often have more control over land and finances, which means they can take part in larger-scale projects like tree planting. Women, on the other hand, are typically left out of these decisions because they lack the resources. Even when women are actively involved in maintaining the forest, they are still marginalized when it comes to making important decisions. We also see cultural barriers, where the belief that men should lead makes it difficult for women to voice their opinions or participate fully in community meetings. Gender roles also play a part, as women are often burdened with household responsibilities, leaving them with little time to participate in community initiatives.” (Key Informant, Community Environmentalist).

4.2.4.2 Challenges posing the most significant obstacle to successful community-led adaptation

The analysis of the most significant obstacles to successful community-led adaptation in the Mau Forest Complex reveals a clear hierarchy of challenges, as reported by the participants. Each challenge was evaluated based on how frequently it was identified as the primary obstacle by respondents, with percentages calculated to provide a clearer understanding of their relative importance.

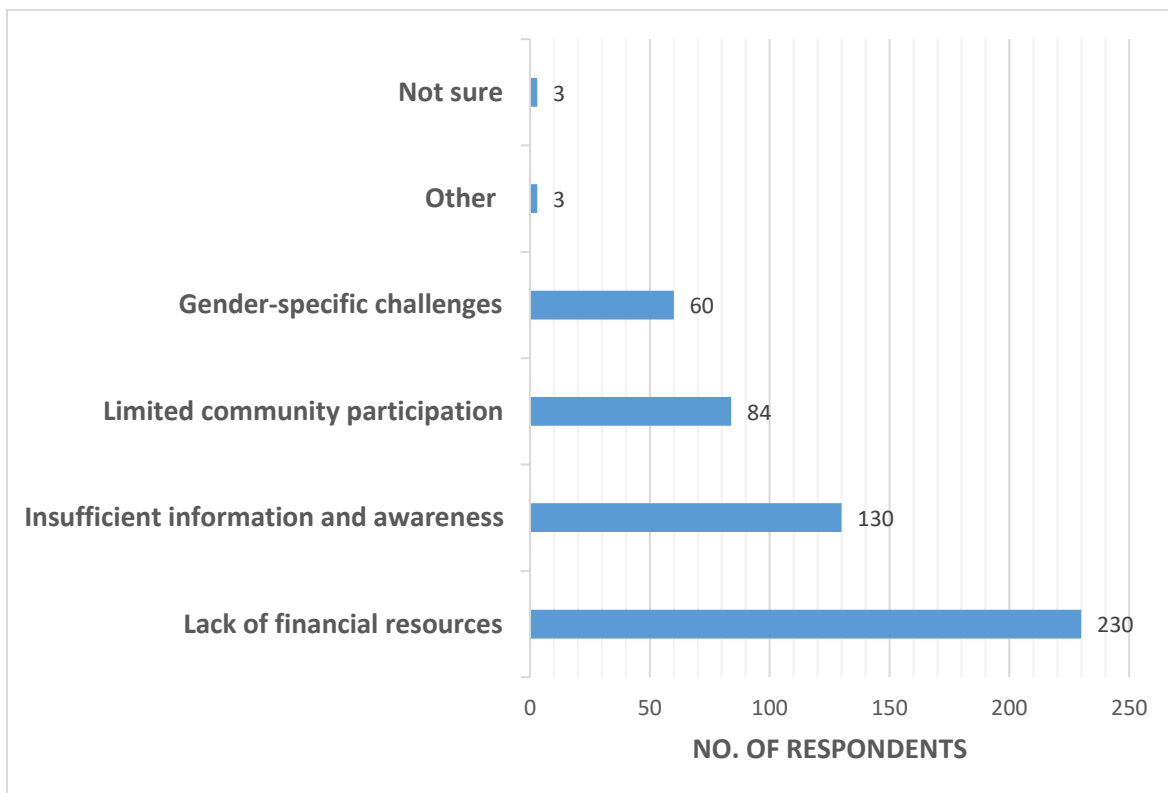


Figure 4. 2: Challenges posing the most significant obstacle to successful community-led adaptation

Source: Research Data (2024)

The **lack of financial resources** stands out as the most significant obstacle, identified by 230 respondents, which constitutes **62.2%** of the total. This overwhelming figure reflects the critical role that financial support plays in facilitating climate adaptation efforts, particularly in afforestation initiatives. Financial constraints affect access to tools, training, seedlings, and other resources necessary for effective adaptation strategies. The large majority of participants citing

this challenge emphasizes the urgent need for more funding and financial assistance for local communities to sustain their adaptation efforts.

Insufficient information and awareness were the second most frequently reported challenge, with 130 respondents representing **35.1%** of the total. This underscores the importance of knowledge dissemination and capacity-building efforts within the community. Many participants feel that they lack the necessary information to implement effective adaptation strategies or understand the broader impacts of climate change. Addressing this gap through targeted educational programs, outreach, and awareness campaigns would be crucial to improving local climate resilience.

Limited community participation was noted by 84 respondents, accounting for **22.7%** of the sample. While not as dominant as financial or informational challenges, limited participation still represents a considerable barrier. This challenge could arise from a lack of incentives, leadership, or organizational structures to encourage collective action. Community involvement is vital for the success of adaptation initiatives, and low levels of participation can hinder these efforts, limiting widespread engagement in key activities like afforestation and water conservation.

Gender-specific challenges, such as unequal access to resources and decision-making platforms, were reported by 60 respondents, making up **16.2%** of the total. This finding highlights ongoing gender disparities that hinder effective community-led adaptation. Women, in particular, may face more obstacles in securing land, finances, and equal participation in adaptation initiatives, which can reduce the overall effectiveness of these efforts. Addressing these gender inequalities is crucial for fostering inclusive and sustainable adaptation strategies.

A small proportion of respondents (3 individuals each, **0.8%**) identified "other" challenges or were "not sure" of the primary obstacle. These minimal responses suggest that the majority of community members have a clear understanding of the most pressing challenges they face, with a focus on financial, informational, participatory, and gender-related issues. In summary, the lack of financial resources emerges as the most critical barrier to successful community-led adaptation, followed by insufficient information, limited participation, and gender-specific challenges. These

findings highlight the areas where support and interventions are most needed to enhance the effectiveness of adaptation strategies within the Mau Forest Complex.

Another key informant, a county forester, reinforced the gender-specific nature of these challenges:

“Women are key to the success of afforestation because they are the ones maintaining the trees and integrating sustainable practices into their daily lives. However, they face significant barriers, such as limited access to land, which is often controlled by men. In addition, women’s contributions are undervalued in community discussions, which leads to a lack of representation in decision-making bodies. If these issues are not addressed, it’s difficult for the community to truly benefit from afforestation efforts.” (Key Informant, County Forester)



CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the study provides a comprehensive discussion of the research findings, drawing conclusions based on the data collected in relation to the study's objectives. The chapter critically evaluates the extent to which gender-inclusiveness influences community-led adaptation in afforestation initiatives, explores the distinct adaptation strategies employed by men and women, and identifies the key challenges that hinder effective participation in climate resilience efforts within the Mau Forest Complex. The conclusions are formulated from the analysis of these findings, and practical recommendations are provided to enhance the effectiveness of afforestation and community-led adaptation strategies. The chapter also outlines potential areas for further research, offering insights for future studies aimed at strengthening gender-inclusive climate resilience.

5.1 Discussion of Findings

5.1.1 Gender-Inclusiveness and Community-Led Adaptation in Afforestation Initiatives

The findings of this study reveal a critical gap in the familiarity and integration of gender-inclusive practices within CLA efforts in the Mau Forest Complex. The findings falling within the "disagree" range (mean score of 2.09) indicate a general lack of awareness of gender-sensitive strategies among community members. This aligns with previous research that highlights the persistent under-emphasis of gender considerations in climate adaptation initiatives, particularly in rural and forest-dependent communities (Bryan et al., 2016). The negative correlation ($r = -0.177$, $p < 0.01$) between familiarity with gender-inclusive practices and perceptions of their integration further underscores a disconnect between awareness and implementation. This suggests that while some individuals may be aware of gender-sensitive approaches, they perceive existing efforts as insufficiently inclusive, reflecting a gap between knowledge and practice.

From the perspective of the Theory of Change (ToC), this disconnect can be attributed to the lack of a clear causal pathway linking gender inclusivity to tangible outcomes in afforestation

initiatives. The ToC emphasizes the importance of context-specific interventions and stakeholder engagement in achieving long-term goals (Huyer, 2021). In the Mau Forest Complex, the limited integration of gender perspectives may stem from inadequate stakeholder involvement, particularly of women and marginalized groups, in the planning and implementation of adaptation strategies. This aligns with the findings of Westholm and Arora-Jonsson (2023), who indicate that gender-responsive policies often fail to address structural inequalities, resulting in superficial or symbolic efforts rather than transformative change.

The Integral Theory framework provides further insights into this issue by highlighting the interplay between individual and collective experiences in shaping adaptation outcomes. The subjective and inter-subjective domains of the Integral Theory emphasize the importance of individual awareness and shared cultural norms in driving gender-inclusive practices (Wilber, 2007). In the context of the Mau Forest Complex, the lack of familiarity with gender-inclusive practices may reflect limited individual awareness and cultural norms that undervalue women's roles in environmental conservation. This is consistent with the findings of Djoudi *et al.* (2021), who note that women's contributions to forest management are often overlooked due to entrenched gender biases and unequal power dynamics.

Despite these challenges, the study reveals a moderate (mean score of 3.65) agreement that gender perspectives are being integrated into afforestation initiatives, albeit incompletely. This aligns with global trends where gender considerations are increasingly recognized in environmental governance, particularly in community-driven projects (Arnold & Soikan, 2021; Broto, 2017). However, the moderate agreement also indicates significant room for improvement, particularly in ensuring that gender inclusivity is not merely a checkbox exercise but a transformative process that addresses structural inequalities. The positive correlation between perceived integration and the contribution of gender inclusivity to adaptation success underscores the importance of deeper engagement with gender-sensitive approaches. This finding is supported by Wanjiru and Yatich (2023), who argues that gender-responsive strategies enhance community resilience by ensuring equitable participation and benefit-sharing.

The Gender Equality and Social Inclusion (GESI) framework offers a robust lens for understanding these dynamics. The GESI framework emphasizes the need for gender-transformative policies that address root causes of inequality and promote systemic change (World Bank, 2018). In the Mau Forest Complex, the observed positive ($r = 0.281$, $p < 0.01$) outcomes from gender-inclusive practices suggest that such approaches can enhance the effectiveness of afforestation initiatives. However, the strong agreement on the need for further emphasis on gender inclusivity highlights a recognition of the gap between current efforts and the potential for more impactful outcomes. This aligns with the findings of Soanes *et al.* (2021), who argue that gender mainstreaming in climate adaptation requires not only increased awareness but also the dismantling of systemic barriers that limit women's access to resources and decision-making power.

An unexpected finding is the strong negative correlation ($r = -0.267$, $p < 0.01$) between familiarity with gender-inclusive practices and the observation of positive outcomes. This suggests that individuals with greater awareness of gender-sensitive strategies may hold higher expectations and are, therefore, more critical of existing efforts. This mirrors the findings of Westoby *et al.* (2021), who argue that increased awareness often leads to heightened sensitivity to the shortcomings of gender mainstreaming initiatives. From the perspective of Integral Theory, this critical perspective reflects the interplay between individual consciousness (subjective domain) and systemic structures (inter-objective domain). Individuals with greater awareness may recognize the limitations of current efforts in addressing systemic inequalities, leading to a more critical assessment of outcomes.

The weak correlation between the perceived integration of gender perspectives ($r = -0.105$, $p < 0.05$) and the need for further emphasis on gender inclusivity further highlights the importance of deeper engagement with gender-sensitive strategies. This finding supports the argument that surface-level efforts may be perceived as sufficient by those who are not deeply involved in implementation, while those with greater awareness recognize the need for more comprehensive approaches (O'Brien & Hochachka, 2010). This underscores the importance of fostering greater community engagement with gender-inclusive strategies, as emphasized by the GESI framework.

In conclusion, the findings highlight the critical role of gender inclusivity in enhancing the effectiveness of community-led adaptation efforts in the Mau Forest Complex. However, significant gaps remain in awareness, implementation, and systemic integration of gender-sensitive approaches. The Theory of Change and Integral Theory provide valuable frameworks for understanding these gaps and designing interventions that address both individual and systemic dimensions of gender inequality. The GESI framework further emphasizes the need for gender-transformative policies that promote equitable participation and benefit-sharing. Future efforts should focus on raising awareness, fostering deeper community engagement, and addressing systemic barriers to ensure that gender inclusivity is not merely symbolic but results in tangible benefits for all community members.

5.1.2 The Different Community-Led Adaptation Strategies of Men and Women

The analysis of CLA strategies in the Mau Forest Complex reveals distinct yet complementary roles played by men and women in afforestation and broader environmental efforts. These gendered patterns of participation (58.9% of men and 43.8% of women involved) are deeply rooted in social norms, traditional divisions of labour, and access to resources, which shape how men and women engage with climate adaptation initiatives. The findings align with the Theory of Change, which emphasizes the importance of context-specific interventions and stakeholder engagement in achieving sustainable outcomes (Vogel, 2012). In the Mau Forest Complex, the gendered division of labour reflects broader societal structures that influence how men and women contribute to environmental conservation and adaptation efforts.

Men in the Mau Forest Complex are predominantly involved (mean score of 4.06 and a standard deviation of 1.002) in activities such as tree planting and water conservation, which often require physical labour and access to land and resources. This aligns with traditional gender roles that assign men to tasks perceived as requiring greater physical strength or technical expertise (Bernier et al., 2015). From the perspective of the Integral Theory, these roles can be understood through the objective and inter-objective domains, which focus on observable behaviours and systemic structures (Wilber, 2006). Men's involvement in tree planting and water conservation reflects their access to land and decision-making power, which are often tied to patriarchal systems that privilege male participation in public and resource-intensive activities (Djoudi et al., 2021).

However, this also highlights the need to address systemic barriers that limit women's access to similar opportunities, as emphasized by the GESI framework (GESI Working Group, 2017).

In contrast, women in the Mau Forest Complex are more actively engaged (mean score of 4.00 and a slightly higher standard deviation of 1.089) in sustainable agriculture, a finding consistent with their traditional roles in subsistence farming and household food security (Peterman et al., 2014). This reflects the subjective and inter-subjective domains of the Integral Theory, which focus on individual experiences and shared cultural norms (Wilber, 2006). Women's involvement in sustainable agriculture is often driven by their responsibility for household food production and their intimate knowledge of local ecosystems. However, their contributions are frequently undervalued or overlooked due to gendered power dynamics that prioritize men's roles in commercial agriculture and decision-making (Arora-Jonsson, 2011). The GESI framework underscores the importance of recognizing and addressing these disparities to ensure that women's contributions are fully integrated into adaptation strategies (GESI Working Group, 2017).

The complementary nature of men's and women's adaptation strategies (mean score of 4.29 and a lower standard deviation of 0.885) highlights the potential for gender-inclusive approaches to enhance the effectiveness of afforestation initiatives. While men may focus on tree planting and water conservation, women's engagement in sustainable agriculture ensures that adaptation efforts address both ecological and livelihood needs. This aligns with the Theory of Change, which emphasizes the importance of diverse stakeholder contributions in achieving sustainable outcomes (Huyer, 2021). However, the gendered division of labor also reflects systemic inequalities that limit women's access to resources, information, and decision-making opportunities. For example, women's lower participation in water conservation may be attributed to barriers such as limited access to technical knowledge or tools, as well as societal norms that restrict their involvement in public or resource-intensive activities (UNEP, 2021). Addressing these barriers is critical to ensuring that women can fully participate in and benefit from adaptation efforts.

The Integral Theory provides further insights into the gendered dynamics of adaptation strategies by highlighting the interplay between individual experiences and systemic structures. Women's higher uncertainty about their engagement in adaptation strategies may reflect limited access to information and decision-making opportunities, as well as societal norms that undervalue their

contributions (O'Brien & Hochachka, 2010). This underscores the importance of fostering greater awareness and empowerment among women, as emphasized by the GESI framework. By addressing these barriers, adaptation initiatives can ensure that women's roles in sustainable agriculture and other activities are fully recognized and supported.

The findings also highlight the need for gender-transformative approaches ($r = 0.403$, $p < 0.01$) that go beyond addressing surface-level inequalities to challenge the root causes of gender disparities. The GESI framework emphasizes the importance of promoting equitable access to resources, information, and decision-making opportunities for all community members, particularly women and marginalized groups (GESI Working Group, 2017). In the context of the Mau Forest Complex, this could involve providing training and resources to support women's participation in water conservation and other activities traditionally dominated by men. It could also involve creating spaces for women to participate in decision-making processes, ensuring that their voices are heard, and their contributions are valued.

In conclusion, the gendered patterns of participation in community-led adaptation strategies in the Mau Forest Complex reflect broader societal structures and norms that shape men's and women's roles in environmental conservation and adaptation efforts. While men and women contribute differently to afforestation initiatives, their complementary roles highlight the potential for gender-inclusive approaches to enhance the effectiveness and sustainability of adaptation efforts. The Theory of Change, Integral Theory, and GESI framework provide valuable lenses for understanding these dynamics and designing interventions that address systemic inequalities and promote equitable participation. Future efforts should focus on fostering greater awareness, empowerment, and access to resources for women, ensuring that their contributions are fully recognized and supported in climate adaptation initiatives.

5.1.3 Challenges for Community-Led Adaptation to Climate Resilience among Men and Women

The challenges faced by communities in the Mau Forest Complex in achieving climate resilience through CLA are multifaceted and deeply intertwined with systemic, social, and economic factors. These challenges—ranging from financial constraints and limited access to information to gender-

specific barriers and low community participation—reflect broader structural inequalities that hinder effective adaptation. By examining these challenges through the lenses of the Theory of Change, Integral Theory, and the GESI framework, this discussion highlights the interconnected nature of these barriers and underscores the need for holistic, inclusive, and context-specific solutions.

Financial Constraints

Financial limitations (62.2%) emerged as the most significant barrier to effective community-led adaptation, a finding consistent with global research on climate finance (Crick *et al.*, 2020). From the perspective of the Theory of Change, financial constraints represent a critical precondition that must be addressed to enable successful adaptation outcomes (Huyer, 2021). Without adequate funding, communities lack the resources necessary for tools, training, and infrastructure, which are essential for implementing afforestation and conservation initiatives. This aligns with the work of Soanes *et al.* (2021), who argue that decentralized and accessible climate finance mechanisms are crucial for empowering local communities. However, the current funding landscape often fails to reach grassroots initiatives, perpetuating a cycle of underfunded and unsustainable adaptation efforts. Addressing this challenge requires not only increased financial support but also the simplification of funding mechanisms to ensure that resources are accessible to marginalized groups, including women and vulnerable populations.

Insufficient Information and Awareness

The lack of access to information and awareness (35.1%) about climate risks and adaptation strategies is another critical barrier. This challenge is particularly pronounced in marginalized communities, where limited access to education and resources exacerbates vulnerability (Tye & Coger, 2021). The Integral Theory provides a useful framework for understanding this issue by highlighting the interplay between individual awareness (subjective domain) and systemic structures (inter-objective domain) (Wilber, 2006). In the Mau Forest Complex, the uneven distribution of information reflects systemic inequalities that limit the capacity of certain groups, particularly women, to participate effectively in adaptation efforts. Tailored educational programs and capacity-building initiatives are essential to bridge this gap, as emphasized by Fast and Bennet

(2020). These programs should be designed to address the specific needs of different community members, ensuring that women and other marginalized groups have equal access to knowledge and resources.

Gender-Specific Barriers

Gender-specific challenges, such as unequal access to resources, decision-making power, and participation opportunities (16.2%), further complicate efforts to build climate resilience. These barriers are deeply rooted in cultural norms and systemic inequalities that disproportionately affect women and marginalized groups (Tovar-Restrepo *et al.*, 2021). The GESI framework underscores the importance of addressing these disparities to ensure that adaptation strategies are equitable and inclusive (World Bank, 2018). In the Mau Forest Complex, women's contributions to adaptation efforts are often undervalued or overlooked, despite their critical roles in sustainable agriculture and resource management. This reflects broader societal structures that privilege male participation in public and resource-intensive activities, while relegating women to informal and unpaid roles (Westholm and Arora-Jonsson, 2023). Addressing these challenges requires gender-transformative approaches that go beyond surface-level interventions to challenge the root causes of inequality. This includes promoting women's access to land, finance, and leadership opportunities, as well as fostering cultural shifts that recognize and value their contributions.

Limited Community Participation

Low levels of community participation (22.7%) represent another significant barrier to effective adaptation. Community engagement is essential for the success of CLA, as it ensures that adaptation strategies are context-specific, inclusive, and sustainable (Tye & Coger, 2021). However, in the Mau Forest Complex, participation remains limited due to factors such as lack of leadership, insufficient incentives, and organizational capacity constraints (Kamau and Ngigi, 2022). The Theory of Change highlights the importance of stakeholder engagement in driving successful adaptation outcomes, emphasizing the need for participatory approaches that empower local communities (Huyer, 2021). Enhancing community participation requires creating spaces for meaningful engagement, particularly for women and marginalized groups, and ensuring that their voices are heard in decision-making processes. This aligns with the principles of locally led

adaptation, which prioritize community-driven solutions and the strengthening of local networks and institutions (Westoby *et al.*, 2021).

Interconnected Challenges and Holistic Solutions

The challenges identified in this study are deeply interconnected, reflecting the complex interplay between individual, systemic, and cultural factors. For example, financial constraints and limited access to information exacerbate gender-specific barriers, while low community participation undermines efforts to address these challenges. The Integral Theory provides a comprehensive framework for understanding these interconnections by emphasizing the importance of addressing challenges from multiple perspectives—subjective, inter-subjective, objective, and inter-objective (Wilber, 2007). This holistic approach is essential for designing adaptation strategies that are inclusive, equitable, and sustainable.

In conclusion, overcoming the barriers to community-led adaptation in the Mau Forest Complex requires a multifaceted approach that addresses financial, informational, gender-specific, and participatory challenges. The Theory of Change, Integral Theory, and GESI framework provide valuable lenses for understanding these challenges and designing interventions that promote equity, inclusivity, and resilience. Future efforts should focus on increasing access to climate finance, enhancing information dissemination, addressing gender disparities, and fostering meaningful community participation. By adopting a holistic and inclusive approach, adaptation initiatives can build resilient communities that are better equipped to face the challenges of climate change.

5.2 Conclusions

This study offers significant insights into the gender dynamics and community-led adaptation strategies within afforestation efforts in the Mau Forest Complex, revealing both progress and persistent challenges in fostering climate resilience. The data highlights that while some steps have been taken toward integrating gender perspectives into afforestation and climate adaptation initiatives, substantial gaps remain in both awareness and practice. The findings demonstrate that while there is moderate agreement on the importance of gender inclusivity in planning and implementation, many community members are unfamiliar with gender-sensitive approaches,

resulting in incomplete integration. The negative correlation between familiarity with gender-inclusive practices and the perception of positive outcomes suggests that those who are more knowledgeable about these issues are often more critical of the existing efforts, indicating a gap between theoretical understanding and practical application.

The analysis also underscores the importance of addressing the differentiated roles that men and women play in adaptation strategies. Men were found to be more involved in activities like tree planting and water conservation, while women were more engaged in sustainable agriculture. This division reflects traditional gender roles but also highlights the complementary nature of these efforts. The strong correlation between men's and women's adaptation strategies suggests that a gender-balanced approach can enhance the effectiveness of afforestation and broader environmental initiatives. However, the data points to an underutilization of women's potential, particularly in areas where they face barriers to resources, information, and decision-making power. Thus, increasing access to leadership opportunities and climate-related knowledge for women is critical to realizing the full potential of community-led adaptation strategies.

The challenges identified in the study- financial constraints, insufficient information, limited community participation, and gender-specific barriers- mirror those found in broader research on climate resilience in developing regions. Financial barriers were the most commonly cited challenge, reflecting a global issue in the mobilization and distribution of climate finance at the local level. Without adequate funding, even the most well-intentioned adaptation initiatives are likely to falter. The lack of information and awareness, particularly among women, further complicates efforts to build resilience, as many community members remain uninformed about the resources and strategies available to them. This uneven access to information not only limits participation but also undermines the long-term sustainability of adaptation efforts. Tailored educational programs and capacity-building initiatives are, therefore, crucial for fostering a more informed and active community.

Interestingly, while gender-specific challenges were recognized, they ranked lower than financial or informational barriers in the minds of respondents. This could suggest a lack of visibility or prioritization of gender issues in adaptation discourse despite their recognized importance in the literature. Cultural norms that marginalize gender concerns and the informal roles that women

often play in climate resilience may contribute to this underestimation. Addressing these barriers will require more than just financial and informational support; it will necessitate a cultural shift toward greater gender equity and inclusivity in decision-making processes.

In conclusion, the findings of this study highlight the need for a comprehensive and gender-sensitive approach to climate adaptation in the Mau Forest Complex. While progress has been made in integrating gender perspectives and fostering community participation, significant challenges remain, particularly in terms of resource allocation, awareness, and gender equity. A multifaceted approach that addresses financial constraints, increases access to information, and promotes gender inclusivity is essential for building a more resilient and adaptive community. Future policy efforts should focus on deepening the integration of gender-sensitive practices into local adaptation strategies and ensuring that these approaches translate into tangible benefits for all members of the community, regardless of gender. Addressing these challenges will not only improve the effectiveness of afforestation initiatives but also contribute to broader climate resilience in the region.

5.3 Recommendations

Based on the findings of this study and its specific objectives, the following policy recommendations are proposed to enhance gender inclusivity, improve adaptation strategies, and address challenges in community-led afforestation initiatives in the Mau Forest Complex. These recommendations are tailored to Kenya's regulatory context and environmental realities, ensuring their feasibility and relevance.

1. Integrate Gender Mainstreaming into National and County Climate Policies

Kenya's Climate Change Act (2016) and the National Climate Change Action Plan (NCCAP) provide a strong foundation for climate action. However, gender considerations remain inadequately addressed in these frameworks. The government should amend these policies to explicitly mandate gender mainstreaming in all climate adaptation and afforestation programs. This includes requiring gender-disaggregated data collection, gender-responsive budgeting, and the inclusion of women in decision-making processes at all levels. County governments should

also develop localized gender action plans to ensure that climate initiatives address the specific needs of women and marginalized groups in the Mau Forest Complex.

2. Establish Gender-Responsive Climate Finance Mechanisms

Access to climate finance is a critical barrier for communities in the Mau Forest Complex. The Kenyan government, in collaboration with development partners, should establish gender-responsive climate finance mechanisms that prioritize women and marginalized groups. This could include creating a dedicated fund for women-led afforestation initiatives, simplifying application processes, and providing capacity-building programs to help women access and manage funds. The National Treasury and the Climate Change Directorate should work with county governments to ensure that these funds are decentralized and reach grassroots communities effectively.

3. Strengthen Land Tenure Rights for Women

Land ownership and access are significant barriers for women in the Mau Forest Complex, limiting their participation in afforestation and sustainable agriculture. The government should enforce and expand the provisions of the Land Act (2012) and the Community Land Act (2016) to strengthen women's land tenure rights. This includes promoting joint land ownership, providing legal support for women to claim land rights, and raising awareness about existing legal protections. County governments should also work with local communities to allocate communal land for women-led afforestation and agricultural projects.

4. Enhance Access to Climate Information and Capacity Building

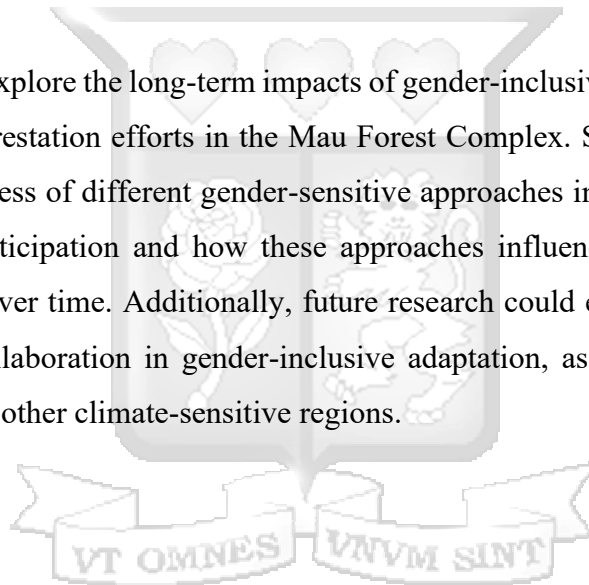
Limited access to climate information and technical knowledge hinders effective adaptation. The Kenya Meteorological Department and the Climate Change Directorate should develop gender-sensitive climate information systems that provide localized, accessible, and actionable data to communities in the Mau Forest Complex. This could include mobile-based platforms, community radio programs, and workshops tailored to women's needs. Additionally, the government should partner with NGOs and academic institutions to provide training programs on sustainable agriculture, forest conservation, and climate-resilient practices, with a focus on empowering women and youth.

5. Promote Women’s Leadership in Climate Governance

Women's involvement in decision-making is crucial to ensuring that climate adaptation strategies are both inclusive and fair. The Kenyan government should adopt affirmative action policies to boost women's representation in climate governance at the national, county, and community levels. This can be achieved by reserving seats for women on climate-related committees, such as the County Climate Change Planning Committees, and offering leadership development programs. Additionally, the Ministry of Environment, Climate Change, and Forestry should create a gender desk to monitor the implementation of gender-responsive climate policies and programs.

5.4 Suggestion for Further Research

Further research should explore the long-term impacts of gender-inclusive adaptation strategies on the sustainability of afforestation efforts in the Mau Forest Complex. Specifically, studies could investigate the effectiveness of different gender-sensitive approaches in overcoming cultural and structural barriers to participation and how these approaches influence the overall success of afforestation initiatives over time. Additionally, future research could examine the role of youth and intergenerational collaboration in gender-inclusive adaptation, as well as the potential for scaling such strategies in other climate-sensitive regions.



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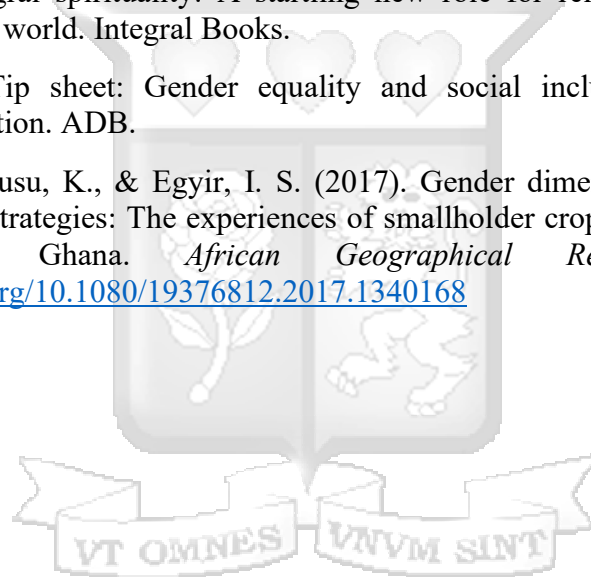
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APPENDICES

A1: Participant Information and Consent Form

Title: Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives at Mau Forest Complex in Kenya

SECTION 1: INFORMATION SHEET

Principal Investigator: Gladys Mueni Mutuku; E-mail gladysmueni@gmail.com / Gladys.mutuku@strathmore.edu; Phone: +254 722 482 782.

Institutional affiliation: Public Policy and Management at Strathmore University

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: Why is this study being carried out?

This research proposal seeks to explore the intricate interrelationships among gender-inclusive climate resilience, community-led adaptation, and afforestation initiatives within the context of the Mau Forest Complex. As climate change intensifies, local communities are facing heightened vulnerabilities, necessitating adaptive measures that integrate diverse perspectives. Employing a mixed-methods approach, this study aims to investigate how gender dynamics influence individuals' engagement in adaptation efforts and their perceptions of afforestation initiatives.

2.2: Do I have to take part?

No. Participation in this study is completely voluntary, and the decision is entirely up to you. If you choose to participate, you will be asked to complete a questionnaire to gather information on 'Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives.' If you are unable to answer all the questions successfully on the first attempt, you may be invited to attend another informational session before being asked to answer the questions again. You are free to withdraw from the study at any time, without providing any reasons.

2.3: Who is eligible to take part in this study?

1. Adult residents (male and female)
2. The local communities of Counties within Mau Forest Complex (Bomet, Kericho, Nakuru and Narok Counties)
3. Adult residents (above 40 years) within Mau Forest Complex
4. Key informants from national and county government agencies responsible for implementing locally-led climate action programs as well as local experts implementing environmental conservation and agricultural programmes in Mau Forest Complex

2.4: What will taking part in this study involve for me?

The researcher and trained research assistants will approach you and invite you to participate in the study. If you are confident that you fully understand the objectives of the study, you will be asked to sign the informed consent form (this form) before being guided through the completion of a questionnaire.

2.5: Are there any risks or dangers in taking part in this study?

There are no risks associated with participating in this study. All the information you provide will be kept confidential and will not be used in any way without your explicit consent.

2.6: Are there any benefits of taking part in this study?

The information will be used to improve gender-inclusive climate resilience and community-led adaptation in afforestation initiatives at Mau Forest Complex in Kenya.

2.7: What will happen to me if I refuse to take part in this study?

Participation in this study is completely voluntary. If you initially choose to participate but later decide to withdraw, you are free to do so at any time without needing to provide an explanation.

2.8: Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. The information may be transcribed into our database, which will be fully encrypted and password-protected. Only individuals directly involved in this study will have access to your information, and all your data will be kept confidential.

2.9: What is the procedure that will be followed to keep participants informed of the progress and outcome of the research?

Upon completion of the research study, participants will be informed of the progress and outcomes through various channels. The dissemination plan includes the following steps:

1. **Final Report:** A comprehensive final report summarizing the findings of the research will be prepared. This report will be made available to all participants who expressed interest in receiving it.
2. **Participant Meetings:** Meetings will be organized with participants who wish to receive detailed information about the study's outcomes. During these meetings, researchers will present the key findings, discuss their implications, and address any questions or concerns raised by participants.
3. **Information Sessions:** Information sessions or workshops will be conducted to disseminate the research findings to a broader audience, including community members, stakeholders, and relevant organizations. These sessions will provide an opportunity for participants to

engage with the research findings and discuss potential actions or interventions based on the results.

4. **Written Communication:** Participants will receive written communication, such as newsletters or brief summaries, outlining the main findings and their implications. This written material will be distributed via email, postal mail, or hand-delivered to participants based on their preferred mode of communication.
5. **Online Platforms:** Research findings will be shared on online platforms, such as project websites, social media channels, and academic repositories. Participants will have access to these platforms to stay updated on the progress and outcomes of the research.
6. **Feedback Mechanism:** A feedback mechanism will be established to allow participants to provide input on the dissemination process and suggest additional ways to share the research findings effectively. This mechanism will include surveys, focus groups, or individual feedback sessions.

2.10: Provision for participants incapable of reading and signing

If a participant is unable to read or sign the consent form, verbal consent will be sought. This verbal consent process will be conducted in the presence of a witness who will confirm that the participant has understood the study information and voluntarily agrees to participate. The witness will then sign the consent form to attest to the participant's consent.

2.11: Who can I contact in case I have further questions?

You can contact me, Gladys Mueni Mutuku, at the Public Policy and Management at Strathmore University, or by e-mail gladysmueni@gmail.com / Gladys.mutuku@strathmore.edu , or by phone +254 722 482 782. You can also contact my supervisor, Prof. Jacqueline McGlade, at the Strathmore Business School, Nairobi, or by e-mail jmcglade@strathmore.edu or by phone +254 716 397799.

If you want to ask someone independent anything about this research please contact:

The Secretary–Strathmore University Institutional Ethics Review Board, P.O. Box 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034 375

I, _____, have had the study explained to me. I have understood all that I have read and have explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

I AGREE to take part in this research

I DO NOT AGREE to take part in this research

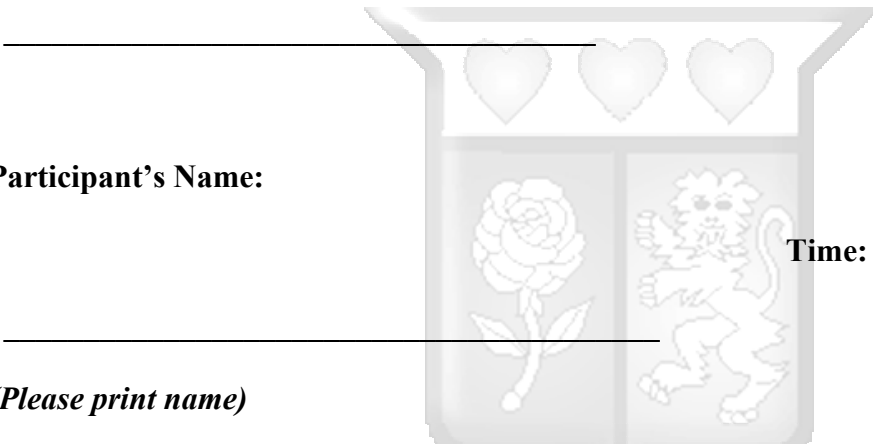
Storage of information on the completed questionnaire

I AGREE to have my completed questionnaire stored for future data analysis

I DO NOT AGREE to have my completed questionnaire stored for future data analysis

Participant's (Witness') Signature/Thumbprint:

Date: _____ / _____ / _____



DD / MM / YEAR

Participant's Name:

Time: _____ / _____

(Please print name)

HR / MN

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been allowed to ask questions which have been answered satisfactorily.

Investigator's Signature:

Date: _____ / _____ / _____

DD / MM / YEAR

Investigator's Name:

Time: _____ / _____

(Please print name)

HR / MN

A2: Participant Information and Consent Form (Swahili)

Kichwa: Ustahimilivu wa Hali ya Hewa Unaojumuisha Jinsia na Marekebisho Yanayoongozwa na Jamii katika Mipango ya Upandaji miti katika Kiwanja cha Msitu wa Mau nchini Kenya.

SEHEMU YA 1: KARATASI YA HABARI

Mpelelezi Mkuu: Gladys Mueni Mutuku; Barua pepe gladysmueni@gmail.com / Gladys.mutuku@strathmore.edu; Simu: +254 722 482 782.

Ushirikiano wa kitaasisi: Sera ya Umma na Usimamizi katika Chuo Kikuu cha Strathmore

SEHEMU YA 2: KARATASI YA HABARI-SOMO

2.1: Kwa nini utafiti huu unafanywa?

Pendekezo hili la utafiti linalenga kuchunguza mahusiano tata kati ya ustahimilivu wa hali ya hewa unaojumuisha jinsia, makabiliano yanayoongozwa na jamii, na mipango ya upandaji miti katika muktadha wa Kiwanda cha Msitu wa Mau. Kadiri mabadiliko ya hali ya hewa yanavyoongezeka, jumuiya za wenyeji zinakabiliwa na udhaifu mkubwa, na hivyo kuhitaji hatua za kukabiliana ambazo huunganisha mitazamo mbalimbali. Kwa kutumia mbinu mchanganyiko, utafiti huu unalenga kuchunguza jinsi mienendo ya kijinsia inavyoathiri ushiriki wa watu binafsi katika juhudi za kukabiliana na hali hiyo na mitazamo yao ya mipango ya upandaji miti.

2.2: Je, ni lazima nishiriki?

Hapana. Kushiriki katika utafiti huu ni hiari kabisa na uamuzi unategemea wewe tu. Ukiamua kushiriki, utaombwa kujaza dodoso ili kupata taarifa kuhusu 'Ustahimilivu wa Hali ya Hewa Unaojumuisha Jinsia na Marekebisho ya Kuongozwa na Jamii katika Mipango ya Upandaji miti.' Iwapo hutaweza kujibu maswali yote kwa mafanikio mara ya kwanza, unaweza kuulizwa kuketi kupitia kipindi kingine cha habari ambacho baada ya hapo unaweza kuulizwa kujibu maswali mara ya pili. Uko huru kukataa kushiriki katika utafiti huu wakati wowote bila kutoa sababu zozote.

2.3: Ni nani anastahili kushiriki katika utafiti huu?

1. Wakazi wa watu wazima (wanaume na wanawake)
2. Jamii za mitaa za Kaunti zilizo ndani ya Msitu wa Mau Complex (Kaunti za Bomet, Kericho, Nakuru na Narok)
3. Wakazi wa watu wazima (zaidi ya miaka 40) ndani ya Msitu wa Mau Complex
4. Watoa habari wakuu kutoka kwa mashirika ya serikali ya kitaifa na kaunti yenye jukumu la kutekeleza mipango ya kukabiliana na hali ya hewa inayoongozwa na wenyeji pamoja na wataalam wa ndani wanaotekeleza mipango ya uhifadhi wa mazingira na kilimo katika Msitu wa Mau Complex.

2.4: Kushiriki katika utafiti huu kutahusisha nini kwangu?

Utafiwa na mtafiti na wasaidizi wa utafiti waliofunzwa na kuombwa kushiriki katika utafiti. Iwapo umeridhika kwamba unaelewa kikamilifu malengo ya utafiti huu, utaombwa kutia sahihi kwenye fomu ya idhini iliyo na taarifa (fomu hii) na kisha kuchukuliwa kupitia dodoso ili kujaza.

2.5: Je, kuna hatari au hatari zozote katika kushiriki katika utafiti huu?

Hakuna hatari katika kushiriki katika utafiti huu. Taarifa zote utakazotoa zitachukuliwa kuwa siri na hazitatumika kwa njia yoyote bila ruhusa yako ya moja kwa moja.

2.6: Je, kuna manufaa yoyote ya kushiriki katika utafiti huu?

Taarifa hizo zitatumika kuboresha uwezo wa kustahimili hali ya hewa unaojumuisha jinsia na makabiliano yanayoongozwa na jamii katika mipango ya upandaji miti katika eneo la Mau Forest Complex nchini Kenya.

2.7: Je, nini kitatokea kwangu ikiwa nitakataa kushiriki katika utafiti huu?

Kushiriki katika utafiti huu ni kwa hiari kabisa. Hata ukiamua kushiriki mwanzoni lakini baadaye ukabadili mawazo, unaweza kujitoka wakati wowote bila maelezo.

2.8: Ni nani atapata taarifa zangu wakati wa utafiti huu?

Rekodi zote za utafiti zitahifadhiwa katika makabati yaliyofungwa kwa usalama. Taarifa hiyo inaweza kuandikwa kwenye hifadhidata yetu lakini hii itasimbwa kwa njia fiche vya kutosha na kulindwa kwa nenosiri. Watu ambao wanahusika kwa karibu na utafiti huu pekee ndio wataweza kufikia maelezo yako. Taarifa zako zote zitawekwa siri.

2.9: Je, ni utaratibu gani utakaofuatwa ili kuwafahamisha washiriki maendeleo na matokeo ya utafiti?

Baada ya kukamilisha utafiti, washiriki watajulishwa maendeleo na matokeo kupitia njia mbalimbali. Mpango wa usambazaji ni pamoja na hatua zifuatazo:

1. Ripoti ya Mwisho: Ripoti ya mwisho ya kina yenye muhtasari wa matokeo ya utafiti itatayarishwa. Ripoti hii itatolewa kwa washiriki wote walioonyesha nia ya kuipokea.

2. Mikutano ya Washiriki: Mikutano itaandaliwa na washiriki wanaotaka kupokea taarifa za kina kuhusu matokeo ya utafiti. Wakati wa mikutano hii, watafiti watawasilisha matokeo muhimu, kujadili athari zao, na kushughulikia maswali au wasiwasi wowote uliotolewa na washiriki.

3. Vikao vya Taarifa: Vikao vya habari au warsha zitafanywa ili kusambaza matokeo ya utafiti kwa hadhira pana zaidi, ikiwa ni pamoja na wanajamii, washikadau, na mashirika husika. Vipindi hivi vitatoa fursa kwa washiriki kujihusisha na matokeo ya utafiti na kujadili hatua zinazoweza au afua kulingana na matokeo.

4. Mawasiliano ya Maandishi: Washiriki watapokea mawasiliano ya maandishi, kama vile majarida au muhtasari mfupi, unaoeleza matokeo makuu na athari zake. Nyenzo hii iliyoandikwa itasambazwa kupitia barua pepe, barua pepe, au kuwasilishwa kwa mkono kwa washiriki kulingana na njia wanayopendelea ya mawasiliano.

5. Mifumo ya Mtandaoni: Matokeo ya utafiti yatashirikiwa kwenye majukwaa ya mtandaoni, kama vile tovuti za mradi, njia za mitandao ya kijamii na hazina za kitaaluma. Washiriki wataweza kufikia majukwaa haya ili kusasishwa kuhusu maendeleo na matokeo ya utafiti.

6. Utaratibu wa Maoni: Utaratibu wa maoni utaanzishwa ili kuruhusu washiriki kutoa maoni kuhusu mchakato wa usambazaji na kupendekeza njia za ziada za kushiriki matokeo ya utafiti kwa ufanisi. Utaratibu huu utajumuisha tafiti, vikundi lengwa, au vikao vya mtu binafsi vya maoni.

2.10: Utoaji kwa washiriki wasio na uwezo wa kusoma na kusaini

Ikiwa mshiriki hawezi kusoma au kusaini fomu ya idhini, idhini ya mdomo itaombwa. Mchakato huu wa idhini ya mdomo utafanywa mbele ya shahidi ambaye atathibitisha kwamba mshiriki ameelewa taarifa za utafiti na anakubali kwa hiari kushiriki. Kisha shahidi atatia saini fomu ya idhini ili kuthibitisha kibali cha mshiriki.

2.11: Je, ninaweza kuwasiliana na nani iwapo nitakuwa na maswali zaidi?

Unaweza kuwasiliana nami, Gladys Mueni Mutuku, katika Sera ya Umma na Usimamizi katika Chuo Kikuu cha Strathmore, au kwa barua pepe gladysmueni@gmail.com / Gladys.mutuku@strathmore.edu, au kwa simu +254 722 482 782. Pia unaweza wasiliana na msimamizi wangu, Prof. Jacqueline McGlade, katika Shule ya Biashara ya Strathmore, Nairobi, au kwa barua pepe jmcglade@strathmore.edu au kwa simu +254 716 397799.

Ikiwa ungependa kumuuliza mtu asiyejitegemea chochote kuhusu utafiti huu tafadhali wasiliana na:

Katibu–Bodi ya Mapitio ya Maadili ya Kitaasisi ya Chuo Kikuu cha Strathmore, P.O. Box 59857, 00200, Nairobi, barua pepe ethicsreview@strathmore.edu Nambari ya simu: +254 703 034 375

Mimi, _____, nimefananuliwa utafiti. Nimeelewa yote niliyosoma na nimeeleza na kujibiwa maswali yangu kwa njia ya kuridhisha. Ninaelewa kuwa ninaweza kubadilisha mawazo yangu katika hatua yoyote.

Tafadhali weka alama kwenye visanduku vinavyotumika kwako;

Kushiriki katika utafiti wa utafiti

NAKUBALI kushiriki katika utafiti huu

SIKUBALI kushiriki katika utafiti huu

Uhifadhi wa taarifa kwenye dodoso lililojazwa

NAKUBALI dodoso langu lililokamilishwa lihifadhiwe kwa uchanganuzi wa data wa siku zijazo

SIKUBALI dodoso langu lililojazwa lihifadhiwe kwa uchanganuzi wa data wa siku zijazo

Saini/Alama ndogo ya Mshiriki (Shahidi):

Tarehe: _____ / _____ / _____

DD / MM / MWAKA

Jina la Mshiriki:

Saa: _____ / _____

(Tafadhali chapisha jina) HR / MN

Mimi, _____ (Jina la mtu anayekubali) nathibitisha kwamba nimefuata SOP ya utafiti huu na nimeeleza maelezo ya utafiti kwa mshiriki aliyetajwa hapo juu, na kwamba ameelewa asili na madhumuni ya utafiti na ridhaa. kwa ushiriki katika utafiti. Ameruhusiwa kuuliza maswali ambayo yamejibiwa vya kuridhisha.

Saini ya Mpelelezi:

Tarehe: _____ / _____ / _____

DD / MM / MWAKA

Jina la Mpelelezi:

Muda: _____ / _____

(Tafadhali chapisha jina) HR / MN

A3: Structured Questionnaire

Structured Questionnaire: Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives at Mau Forest Complex, Kenya

Dear Participant,

Thank you for participating in our research study on Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives at Mau Forest Complex, Kenya. Your insights are invaluable and will contribute to a deeper understanding of the intricate relationships between gender dynamics, community-led actions, and afforestation initiatives within the unique context of the Mau Forest Complex.

Instructions:

Kindly read each question carefully and choose the response that best reflects your thoughts or experiences. Your input is vital, and we appreciate the time and effort you dedicate to completing this questionnaire.

Section 1: Sociodemographic Information

1.1. Gender:

- Male
- Female

1.2. Age:

- 18-25
- 26-35
- 36-45
- 46-55
- 56 and above

1.3. Educational Background:

- No formal education
- Primary education
- Secondary education
- Tertiary education

1.4. Occupation:

- Farmer



- Government employee
- Private sector employee
- Self-employed
- Student
- Other (please specify)

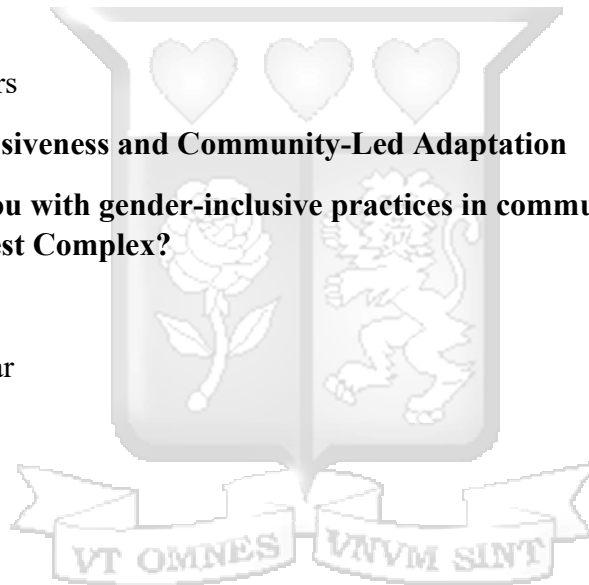
1.5. Years of Residency in Mau Forest Complex:

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-15 years
- More than 15 years

Section 2: Gender-Inclusiveness and Community-Led Adaptation

2.1. How familiar are you with gender-inclusive practices in community-led adaptation efforts within Mau Forest Complex?

- Very familiar
- Somewhat familiar
- Neutral
- Not very familiar
- Not familiar at all



2.2. In your observation, do you believe that gender perspectives are adequately integrated into the planning and implementation of afforestation initiatives?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

2.3. To what extent do you think gender inclusivity contributes to the success of community-led adaptation efforts in the context of afforestation?

- Extremely significant

- Significant
- Neutral
- Insignificant
- Extremely insignificant

2.4. Have you personally witnessed any positive outcomes or benefits resulting from gender-inclusive practices in community-led adaptation within the Mau Forest Complex?

- Yes, significantly
- Yes, to some extent
- Neutral
- No, to some extent
- No, not at all

2.5. Do you think there is a need for more emphasis on gender-inclusive approaches to further enhance the effectiveness of community-led adaptation in afforestation initiatives?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree



Section 3: Community-Led Adaptation Strategies of Men and Women

3.1. What community-led adaptation strategies have you observed predominantly undertaken by men within the Mau Forest Complex?

- Tree planting initiatives
- Water conservation efforts
- Sustainable agriculture practices
- Community awareness programs
- Other (please specify)
- Not sure

3.2. Similarly, which adaptation strategies have you observed being predominantly undertaken by women within the Mau Forest Complex?

- Tree planting initiatives

- Water conservation efforts
- Sustainable agriculture practices
- Community awareness programs
- Other (please specify)
- Not sure

3.3. In your opinion, how do the different adaptation strategies employed by men contribute to the success of afforestation initiatives in the Mau Forest Complex?

- Significantly
- To some extent
- Neutral
- Minimally
- Not at all

3.4. Likewise, how do the different adaptation strategies employed by women contribute to the success of afforestation initiatives in the Mau Forest Complex?

- Significantly
- To some extent
- Neutral
- Minimally
- Not at all

3.5. Do you believe that integrating both men's and women's adaptation strategies is essential for the overall success of afforestation initiatives in the Mau Forest Complex?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Section 4: Challenges to Effective Community-Led Adaptation

4.1. In your experience, how significant is the challenge of a lack of financial resources in hindering effective community-led adaptation to climate resilience in the Mau Forest Complex?



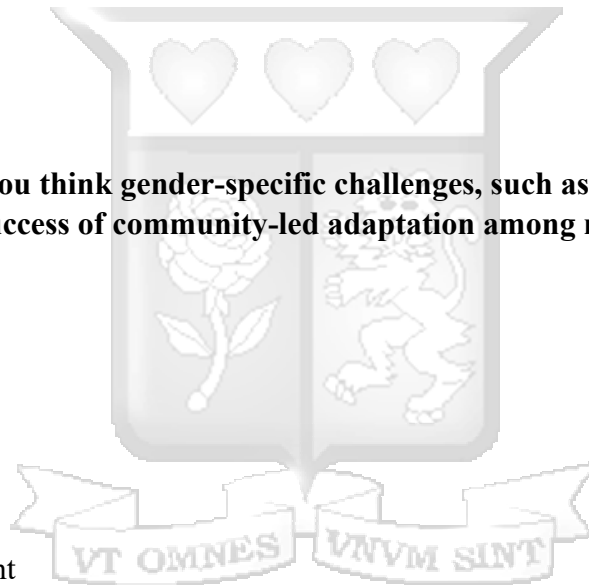
- Extremely significant
- Significant
- Neutral
- Insignificant
- Extremely insignificant

4.2. To what extent do you perceive insufficient information and awareness as a challenge to community-led adaptation efforts in the Mau Forest Complex?

- Very high extent
- High extent
- Neutral
- Low extent
- Very low extent

4.3. How prevalent do you think gender-specific challenges, such as unequal access to resources, impact the success of community-led adaptation among men and women in the Mau Forest Complex?

- Very prevalent
- Prevalent
- Neutral
- Not prevalent
- Not at all prevalent



4.4. In your opinion, how does limited community participation hinder effective community-led adaptation to climate resilience in the Mau Forest Complex?

- Hugely hinders
- Hinders
- Neutral
- Does not hinder much
- Does not hinder at all

4.5. Which of the following challenges do you believe poses the most significant obstacle to successful community-led adaptation in the context of afforestation initiatives within Mau Forest Complex?

Lack of financial resources

Insufficient information and awareness

Limited community participation

Gender-specific challenges

Other (please specify)

Not sure

Thank you once again for your valuable contribution to advancing our understanding of gender-inclusive climate resilience and community-led adaptation in the Mau Forest Complex.



A4: Structured Questionnaire (Swahili)

Mpendwa Mshiriki,

Asante kwa kushiriki katika utafiti wetu wa Ustahimilivu wa Hali ya Hewa Unaojumuisha Jinsia na Marekebisho Yanayoongozwa na Jamii katika Mipango ya Upandaji miti katika Mau Forest Complex, Kenya. Mawazo yako ni ya thamani sana na yatachangia katika uelewa wa kina wa mahusiano ya ndani kati ya mienendo ya kijinsia, vitendo vinavyoongozwa na jamii, na mipango ya upandaji miti ndani ya muktadha wa kipekee wa Kiwanda cha Msitu wa Mau.

Maagizo:

Tafadhali soma kila swali kwa makini na uchague jibu linaloakisi mawazo au uzoefu wako vyema. Maoni yako ni muhimu, na tunathamini muda na juhudi unazotoa ili kukamilisha dodoso hili.

SEHEMU YA 1: TAARIFA ZA KIJAMII

1.1. Jinsia:

- Mwanaume
- Mwanamke

1.2. Umri:

- 18-25
- 26-35
- 36-45
- 46-55
- 56 na zaidi

1.3. Historia ya elimu:

- Hakuna elimu rasmi
- Elimu ya msingi
- Elimu ya sekondari
- Elimu ya juu



1.4. Kazi:

- Mkulima
- Mfanyakazi wa serikali
- Mfanyakazi wa sekta binafsi
- Kazi binafsi
- Mwanafunzi
- Nyingine (tafadhali taja)

1.5. Miaka ya Ukaazi katika Kiwanja cha Msitu wa Mau:

- Chini ya mwaka 1
- Miaka 1-5
- Miaka 6-10
- Miaka 11-15
- Zaidi ya miaka 15

SEHEMU YA 2: USHIRIKISHWAJI WA JINSIA NA MAREKEBISHO YANAYOONGOZWA NA JAMII

2.1. Je, unafahamu kwa kiasi gani desturi zinazojumuisha jinsia katika juhudi za kukabiliana na hali zinazoongozwa na jamii ndani ya Msitu wa Mau Complex?

- Kufahamika sana
- Kufahamika kwa kiasi fulani
- Kuegemea upande wowote
- Sio kawaida sana
- Siyo mazoea hata kidogo

2.2. Katika uchunguzi wako, unaamini kuwa mitazamo ya kijinsia imeunganishwa vya kutosha katika upangaji na utekelezaji wa mipango ya upandaji miti?

- Kubali sana

- Kubali
- Kuegemea upande wowote
- Usikubali
- Sikubaliani kabisa

2.3. Je, unadhani ushirikishwaji wa kijinsia unachangia kwa kiasi gani katika mafanikio ya juhudi zinazoongozwa na jamii katika muktadha wa upandaji miti?

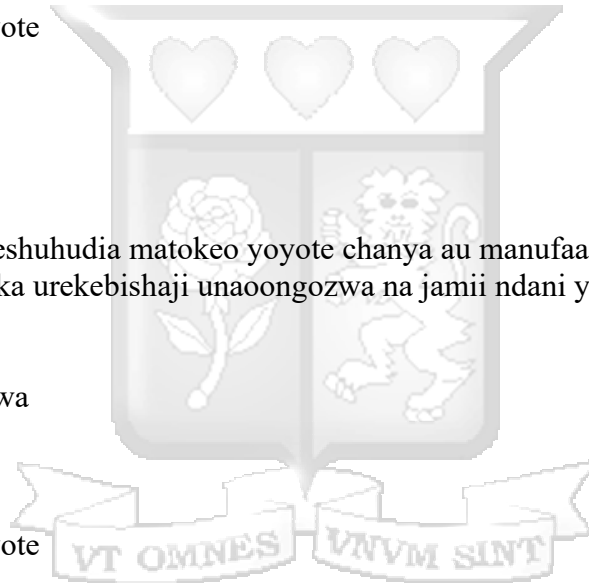
- Muhimu sana
- Muhimu
- Kuegemea upande wowote
- Isiyo na maana
- Sio muhimu sana

2.4. Je, wewe binafsi umeshuhudia matokeo yoyote chanya au manufaa yanayotokana na mazoea ya kujumuisha jinsia katika urekebishaji unaoongozwa na jamii ndani ya Msitu wa Mau Complex?

- Ndiyo, kwa kiasi kikubwa
- Ndiyo, kwa kiasi fulani
- Kuegemea upande wowote
- Hapana, kwa kiasi fulani
- Hapana, hata kidogo

2.5. Je, unafikiri kuna haja ya kutilia mkazo zaidi mbinu zinazojumuisha jinsia ili kuimarisha zaidi ufanisi wa kukabiliana na mabadiliko yanayoongozwa na jamii katika mipango ya upandaji miti?

- Kubali sana
- Kubali
- Kuegemea upande wowote
- Usikubali



- Sikubaliani kabisa

SEHEMU YA 3: MIKAKATI YA KUKABILIANA NA JAMII YA WANAUME NA WANAWAKE

3.1. Ni ipi kati ya mikakati ifuatayo ya kukabiliana na hali inayoongozwa na jamii ambayo umeona ikifanywa zaidi na wanaume ndani ya Kiwanda cha Msitu wa Mau?

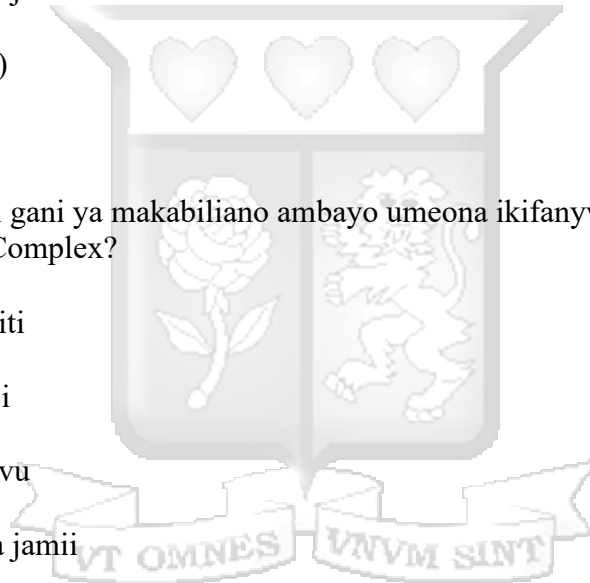
- Mipango ya upandaji miti
- Juhudi za kuhifadhi maji
- Mbinu za kilimo endelevu
- Programu za kuelimisha jamii
- Nyingine (tafadhali taja)
- Sina uhakika

3.2. Vile vile, ni mikakati gani ya makabiliano ambayo umeona ikifanywa zaidi na wanawake ndani ya Msitu wa Mau Complex?

- Mipango ya upandaji miti
- Juhudi za kuhifadhi maji
- Mbinu za kilimo endelevu
- Programu za kuelimisha jamii
- Nyingine (tafadhali taja)
- Sina uhakika

3.3. Kwa maoni yako, mbinu tofauti za kukabiliana na hali hiyo zinazotumiwa na wanaume zinachangia vipi katika mafanikio ya mipango ya upandaji miti katika Kiwanda cha Msitu wa Mau?

- Kwa kiasi kikubwa
- Kwa kiasi fulani
- Kuegemea upande wowote
- Kidogo



- Hapana kabisa

3.4. Vile vile, mikakati tofauti ya kukabiliana na hali hiyo iliyotumiwa na wanawake inachangia vipi katika mafanikio ya mipango ya upandaji miti katika Kiwanda cha Msitu wa Mau?

- Kwa kiasi kikubwa
- Kwa kiasi fulani
- Kuegemea upande wowote
- Kidogo
- Hapana kabisa

3.5. Je, unaamini kuwa kujumuisha mikakati ya kukabiliana na hali ya wanaume na wanawake ni muhimu kwa mafanikio ya jumla ya mipango ya upandaji miti katika Kiwanda cha Msitu wa Mau?

- Kubali sana
- Kubali
- Kuegemea upande wowote
- Usikubali
- Sikubaliani kabisa

SEHEMU YA 4: CHANGAMOTO ZA MAREKEBISHO MAZURI YA KUONGOZWA NA JUMUIYA

4.1. Katika tajriba yako, changamoto ya ukosefu wa rasilimali fedha ni muhimu kwa kiasi gani katika kuzuia makabiliano madhubuti yanayoongozwa na jamii kwa ustahimilivu wa hali ya hewa katika Msitu wa Mau Complex?

- Muhimu sana
- Muhimu
- Kuegemea upande wowote
- Isiyo na maana
- Sio muhimu sana

4.2. Je, ni kwa kiwango gani unaona uhaba wa taarifa na ufahamu kama changamoto kwa juhudi zinazoongozwa na jamii za kukabiliana na hali katika Msitu wa Mau Complex?

- Kiwango cha juu sana
- Kiwango cha juu
- Kuegemea upande wowote
- Kiwango cha chini
- Kiwango cha chini sana

4.3. Je, unafikiri changamoto zinazohusu jinsia, kama vile ukosefu wa usawa wa upatikanaji wa rasilimali, zimeenea kiasi gani, zinaathiri mafanikio ya kukabiliana na mabadiliko yanayoongozwa na jamii miongoni mwa wanaume na wanawake katika Msitu wa Mau Complex?

- Imeenea sana
- Inaenea
- Kuegemea upande wowote
- Si imeenea
- Haijaenea hata kidogo

4.4. Kwa maoni yako, ni kwa jinsi gani ushiriki mdogo wa jamii unazuia makabiliano madhubuti yanayoongozwa na jamii kwa ustahimilivu wa hali ya hewa katika Msitu wa Mau Complex?

- Inazuia sana
- Vikwazo
- Kuegemea upande wowote
- Haizuii sana
- Haizuii hata kidogo

4.5. Je, ni changamoto gani kati ya zifuatazo unaamini inaleta kikwazo kikubwa zaidi kwa ufanisi wa kukabiliana na mabadiliko ya jamii katika muktadha wa mipango ya upandaji miti ndani ya Msitu wa Mau Complex?

- Ukosefu wa rasilimali fedha

- Taarifa na ufahamu usiotosha
- Ushiriki mdogo wa jamii
- Changamoto za jinsia mahususi
- Nyingine (tafadhali taja)
- Sina uhakika

Asante tena kwa mchango wako muhimu katika kuendeleza uelewa wetu wa ustahimilivu wa hali ya hewa unaojumuisha jinsia na makabiliano yanayoongozwa na jamii katika Msitu wa Mau Complex.



A5: In-depth Interview Guide

Interview Guide for Key Informants: Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives at Mau Forest Complex, Kenya

Introduction: Thank you for participating in this interview. Your insights as a key informant are crucial to our understanding of gender-inclusive climate resilience and community-led adaptation in the context of afforestation initiatives at the Mau Forest Complex. The interview will focus on your experiences, perspectives, and recommendations related to these themes.

Section 1: Background and Expertise

- 1.1. Can you provide an overview of your role and responsibilities about locally-led climate action programs within the Mau Forest Complex?
- 1.2. How long have you been involved in climate-related initiatives, specifically those related to afforestation and community-led adaptation in the Mau Forest Complex?
- 1.3. In your experience, what are the key objectives and goals of the programs or projects you have been involved in within the Mau Forest Complex?

Section 2: Gender-Inclusiveness in Climate Resilience

- 2.1. From your perspective to what extent are gender perspectives integrated into the planning and execution of climate resilience initiatives, especially those related to afforestation?
- 2.2. How have you observed the involvement of women in decision-making processes regarding afforestation initiatives? Are there specific examples you can share?
- 2.3. In your opinion, what role does gender inclusivity play in the overall success and sustainability of community-led adaptation efforts in the Mau Forest Complex?

Section 3: Community-Led Adaptation Strategies

- 3.1. What community-led adaptation strategies have you observed being particularly effective in the context of afforestation within the Mau Forest Complex?
- 3.2. Can you highlight any differences or unique characteristics in the adaptation strategies adopted by men and women in the community?
- 3.3. From your perspective, how do these community-led adaptation strategies contribute to the goals of afforestation initiatives and overall climate resilience?

Section 4: Challenges and Barriers

- 4.1. Based on your experience, what challenges or barriers do men and women in the community face when actively participating in and implementing community-led adaptation efforts, especially those related to afforestation?

4.2. Are there any specific gender-related challenges that you have observed impacting the success of community-led adaptation initiatives?

4.3. In your opinion, how can these challenges be addressed to enhance the effectiveness of community-led adaptation in the Mau Forest Complex?

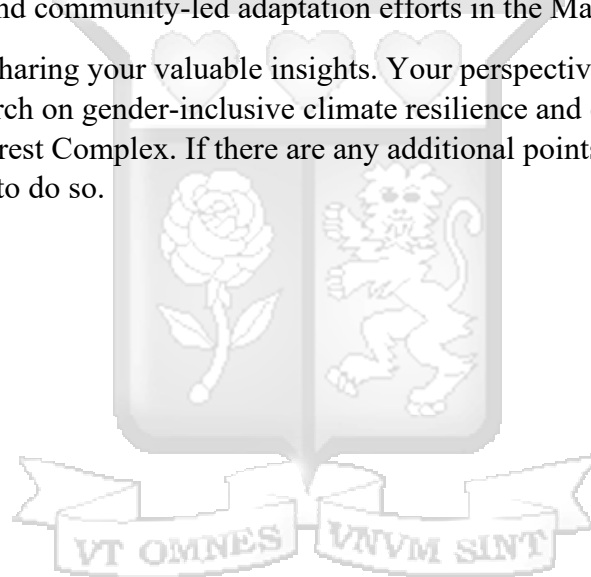
Section 5: Recommendations and Way Forward

5.1. Based on your expertise, what recommendations do you have for improving the integration of gender-inclusive approaches in community-led adaptation efforts within the Mau Forest Complex?

5.2. How can locally-led climate action programs better address the unique needs and perspectives of both men and women in the community?

5.3. In your view, what are the key factors for ensuring the long-term sustainability of afforestation initiatives and community-led adaptation efforts in the Mau Forest Complex?

Closing: Thank you for sharing your valuable insights. Your perspectives will contribute significantly to our research on gender-inclusive climate resilience and community-led adaptation in the Mau Forest Complex. If there are any additional points you'd like to highlight or share, please feel free to do so.



A6: In-depth Interview Guide (Swahili)

Utangulizi: Asante kwa kushiriki katika mahojiano haya. Mawazo yako kama mtoa habari mkuu ni muhimu kwa uelewa wetu wa ustahimilivu wa hali ya hewa unaojumuisha jinsia na makabiliano yanayoongozwa na jamii katika muktadha wa mipango ya upandaji miti katika Kiwanda cha Msitu wa Mau. Mahojiano yatazingatia uzoefu wako, mitazamo, na mapendekezo yanayohusiana na mada hizi.

Sehemu ya 1: Usuli na Utaalamu

1.1. Je, unaweza kutoa muhtasari wa jukumu na wajibu wako kuhusu programu za kukabiliana na hali ya hewa zinazoongozwa na wenyeji ndani ya Msitu wa Mau Complex?

1.2. Je, umehusika kwa muda gani katika mipango inayohusiana na hali ya hewa, haswa inayohusiana na upandaji miti na mazoea yanayoongozwa na jamii katika Msitu wa Mau Complex?

1.3. Katika tajriba yako, ni malengo na malengo gani muhimu ya programu au miradi ambayo umehusika nayo ndani ya Msitu wa Mau Complex?

Sehemu ya 2: Ushirikishwaji wa Jinsia katika Kustahimili Hali ya Hewa

2.1. Kwa mtazamo wako, ni kwa kiasi gani mitazamo ya kijinsia imeunganishwa katika upangaji na utekelezaji wa mipango ya kukabiliana na hali ya hewa, hasa inayohusiana na upandaji miti?

2.2. Umeonaje ushiriki wa wanawake katika michakato ya kufanya maamuzi kuhusu mipango ya upandaji miti? Je, kuna mifano maalum unayoweza kushiriki?

2.3. Kwa maoni yako, ushirikishwaji wa kijinsia una jukumu gani katika mafanikio ya jumla na uendelevu wa juhudi zinazoongozwa na jamii za kukabiliana na hali katika Msitu wa Mau Complex?

Sehemu ya 3: Mikakati ya Kurekebisha Inayoongozwa na Jumuiya

3.1. Je, ni mikakati gani ya kukabiliana na hali inayoongozwa na jamii ambayo umeona ikiwa na ufanisi hasa katika muktadha wa upandaji miti ndani ya Kiwanda cha Msitu wa Mau?

3.2. Je, unaweza kuangazia tofauti zozote au sifa za kipekee katika mikakati ya kukabiliana na hali iliyopitishwa na wanaume na wanawake katika jamii?

3.3. Kwa mtazamo wako, mikakati hii ya kukabiliana na hali inayoongozwa na jamii inachangia vipi katika malengo ya mipango ya upandaji miti na kustahimili hali ya hewa kwa ujumla?

Sehemu ya 4: Changamoto na Vikwazo

4.1. Kulingana na uzoefu wako, ni changamoto au vikwazo gani wanaume na wanawake katika jamii hukabiliana navyo wanaposhiriki kikamilifu katika na kutekeleza juhudi za kukabiliana na hali zinazoongozwa na jamii, hasa zinazohusiana na upandaji miti?

4.2. Je, kuna changamoto zozote mahususi zinazohusiana na jinsia ambazo umeona zikiathiri mafanikio ya mipango ya kukabiliana na hali inayoongozwa na jamii?

4.3. Kwa maoni yako, ni jinsi gani changamoto hizi zinaweza kushughulikiwa ili kuimarisha ufanisi wa makabiliano yanayoongozwa na jamii katika Msitu wa Mau Complex?

Sehemu ya 5: Mapendekezo na Njia ya Mbele

5.1. Kulingana na utaalum wako, una mapendekezo gani ya kuboresha ujumuishaji wa mbinu zinazojumuisha jinsia katika juhudi zinazoongozwa na jamii za kukabiliana na hali ndani ya Msitu wa Mau Complex?

5.2. Je, ni kwa jinsi gani programu za kukabiliana na hali ya hewa zinazoongozwa na wenyeji zinaweza kushughulikia vyema mahitaji na mitazamo ya kipekee ya wanaume na wanawake katika jamii?

5.3. Kwa maoni yako, ni mambo gani muhimu ya kuhakikisha uendeleu wa muda mrefu wa mipango ya upandaji miti na juhudi zinazoongozwa na jamii za kukabiliana na hali katika Msitu wa Mau Complex?

Kufunga: Asante kwa kushiriki maarifa yako muhimu. Mitazamo yako itachangia pakubwa katika utafiti wetu kuhusu ustahimilivu wa hali ya hewa unaojumuisha jinsia na makabiliano yanayoongozwa na jamii katika Msitu wa Mau Complex. Ikiwa kuna pointi zozote za ziada ungependa kuangazia au kushiriki, tafadhali jisikie huru kufanya hivyo.

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15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

A8: SU-ISERC Research Approval



22nd February 2024

Ms Mutuku Gladys,
gladysmueni@gmail.com

Dear Ms Mutuku,

RE: Gender-Inclusive Climate Resilience and Community-Led Adaptation in Afforestation Initiatives at Mau Forest Complex in Kenya

This is to inform you that SU-ISERC has reviewed and approved your above SU-masters research proposal. Your application reference number is SU-ISERC1976/24. The approval period is from 22nd February 2024 to 21st February 2025.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

**Mr Ambrose Rachier,
Chairperson; SU-ISERC**

