FOREST GOVERNANCE INFLUENCE AND COMMUNITY PARTICIPATION IN FOREST MANAGEMENT: A CASE STUDY OF MOLO WARD, KENYA

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A Research Thesis submitted in partial fulfilment of the requirements for the award of the degree of Master of Science in Governance, Peace, and Security in the **Department of Governance, Peace, and Security Studies**, **School of Humanities and Social Sciences**, **at the Africa Nazarene University**.

JULY 2026

DECLARATION

DECLARATION

I Robert Namayi Oduya, hereby state that this is my original work and has not been submitted to any other University or institution for academic or any other purpose.

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DEDICATION

This research is dedicated primarily to Almighty God, my family, especially my children, friends, and colleagues, who have provided unwavering support and inspiration throughout the research process.

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I take this opportunity to thank God Almighty for His grace, strength, and guidance throughout my graduate studies, with His divine presence giving me hope and perseverance for which I am eternally grateful.

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ABSTRACT

The research examines impact of governance structures on community participation in forest management within Molo Ward, Kenya. Forests are important for supporting livelihoods, biodiversity, and ecosystem in general but deforestation and degradation place many challenges to these important ecosystems. The study examines the influence of governance mechanism on local communities' involvement in management practices, to assess current forest management practices, evaluate factors influencing community participation and identify opportunities to promote engagement in sustainable forest management. This research utilized mixed methods data collection approach that combining quantitative and qualitative methods. Quantitative data were collected using structured questionnaires administered to 167 residents, Community Forest Association (CFA) members and NGOs. Slovin's formula decides sample size. Qualitative data were collected on focus group discussions (FGDs) and interviews with government officials, NGOs, and community leaders. Descriptive statistics was used for quantitative data analysis, while tools such as SPSS or Excel were used. Thematic analysis was used to analyse qualitative data and identify patterns and insights. Research relied on the secondary data from government reports, academic papers, and organizations with a history of forest governance, like the Kenya Forest Service and FAO. The study focused on community awareness, levels of involvement, challenges and how effective current policies affect forest management. The study raises the need for inclusivity of women and youth and investigates innovative methods. Findings indicate that a collaborative governance structure established through CFAs under the Forest Act (2005) promotes community participation and contribute 32% reduction in illegal logging and increases forest growth through community led afforestation. Unequal resource sharing, exclusion of other groups from decision making, bureaucratic failures and limited access to technology continue. Study concludes that actual participatory forest management depends on transparent, inclusive, and accountable governance systems. It recommends policy reforms to decentralize authority, enforce all rounded leadership allocations, promote transparent benefit-sharing ways, and invest in capacity building and accessible technology to strengthen community led conservation efforts. This is to be able to align national conservation goals with local livelihood needs and promote sustainable forest governance. This research contributes to global and national efforts for sustainable forest management, offering insights for long-term environmental and socio-economic benefits.

DEFINITION OF TERMS

i. **Governance**: Encompasses a system of structures, rules and processes that include formal and informal institutions, decision-making structures, and accountability where authority is applied and decisions for managing forest resources are made and implemented. Governance is measured by assessing the effectiveness and inclusivity of legal and policy frameworks, institutional mechanisms, decision making processes, benefit-sharing structures, and accountability. All these contribute to either qualifying or hindering community participation in forest management (Agrawal, 2001).

ii. **Community Participation**: Participation of local communities in administration through preparation, implementation, and monitoring of forest management activities. Focus is on inclusivity, empowerment, and shared responsibility. Pretty, J. N. (1995).

iii. **Forest Management**: Includes administrative, legal, economic, and social dimensions to realize goals which are conservation, sustainable use, and support for livelihoods. (Food and Agriculture Organization). (2010).

iv. **Molo Ward, Kenya**: An administrative region in Kenya selected as the case study, known for its forest ecosystems and community-driven forest management initiatives. Kenya Forest Service (KFS). (2018).

v. **Influence**: Is the ability of governance structures to affect the community to contribute to forest administration. Ostrom, E. (1990).

LIST OF ABBREVIATIONS AND ACRONYMS

CBFM: Community-Based Forest Management

CBNRM: Community-Based Natural Resource Management

CFAs: Community Forest Associations

EAC: East African Community

FAO: United Nations Food and Agriculture Organization

FAPs: Forest Administration Plans

GIS: Geographic Information Systems

IUCN: International Union for Conservation of Natural Resources

JFM: Joint Forest Management

KNBS: Kenya Bureau of Statistics

KFS: Kenya Forest Service

NGOs: Non-Governmental Organizations

PFM: Participatory forest management

PES: Payment for ecosystem services

UNSDGs: United Nations Sustainable Development Goals

TEK: Traditional Ecological Knowledge

UNEP: United Nations Environmental Program

UNESCO: United Nations Educational, Scientific, and Cultural Organization

WWF: World Wildlife Fund

CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

This chapter provides an overview of the historical perspective, current trends, and importance of forest management in the environmental landscape. It covers the background of the study, Statement of the problem, Purpose of the study, Objectives of the study, Research questions, Significance of the study, Scope, Delimitation, Limitations, Assumptions of the study, Theoretical Framework and Conceptual Framework.

1.2 Background of the Study

Forest governance has undergone substantial change over the past few years, with rising emphasis on participatory approaches to solve challenges of deforestation, biodiversity loss, and climate change. It continues to evolve for betterment and adaptation, but failure of the global community and lack of centralized systems to monitor top-down forest management systems have demanded adoption of dispersed and community-based approaches (Agrawal et al., 2018). These approaches operate based on the acceptance that local communities depend on forests for their livelihoods and are better placed to manage forest resources when given the opportunity and resources. The United Nations' Sustainable Development Goals (SDGs), especially Goal 15 on Life on Land, highlight the importance of broad governance and community participation in forest conservation. However, the success of these approaches depends on the quality of governance, which involves transparency, accountability, and rightful distribution of benefits (Larson et al., 2016). Despite global push for participatory forest management (PFM), challenges such as imbalances, weak institutional structures and limited capacity at the local level still exist and hinder its effectiveness (Chhatre & Agrawal, 2009).

Globally, forest governance operates within the connection of climate security and green economies, moving beyond conservation to position forests as important carbon sinks and assets for sustainable development (IPBES, 2019). This is motivated by worldwide enterprises and mixed models of finance that join forest benefits to global supply chains, corporate sustainability securities, and carbon markets (Agrawal et al., 2021). Challenge is when you place a financial tag on conservation of forest ecosystems, which mostly creates new forms of exclusion as global standards and remote monitoring technologies can marginalize local communities by alienating their rights and knowledge systems. Current challenge in modern global forest governance is to align international climate and economic

means with local tenure security and equitable benefit sharing ensuring that global environmental goals do not undermine social foundations of sustainable forest management.

In African context, forest governance has traditionally been controlled by states. In most cases this has led to conflicts between governments and local communities over access to and usage of resources. Nevertheless, changing to community-based forest management (CBFM) approach in the last two decades has addressed destruction and degradation of our forests while improving livelihoods (Ribot et al., 2010). Countries like Tanzania, Ethiopia and South Africa have applied policies that promote community involvement and contribution in forest management with different level of success. For example, Tanzania's Joint Forest Management (JFM) program has been commended for its inclusion of local communities in forest conservation but faced with challenges of elite capture and limited benefit sharing persist (Lund et al., 2018). Furthermore, Ethiopia's participatory forest management programs have been successful in restoring degraded forests although weak governance structures and lack of funding remain main challenge (Beyene, A. D., & Abebe, T., 2019). Across Africa, effectiveness of CBFM is faced by corruption, poor legal frameworks and exclusion of vulnerable groups who are women and native communities (Ribot, 2014).

Within East Africa, forest governance is directed by regional policies such as East African Community (EAC) Practice on Environment and Natural Resources Management. This supports manageable forest management and community involvement. Kenya, Uganda, and Tanzania have operated on a PFM strategy, though implementation has not been equal because of differences in governance capacities and political will (Kariuki & Birner, 2016). For instance, Uganda's National Forest Policy focuses on community participation but faces a weak enforcement mechanism of forest laws and limited delegation of authority to local communities (Banana et al., 2019). Kenya, on the other hand, has the Forest Act of 2005 and the Community Land Act of 2016 that provide legal structures for public involvement in forest management. Still, the success of these measures depends on the willingness of state actors to decentralize authority and resources to native communities (Mwangi et al., 2018). Despite these challenges, PFM indicates potential improvement to forest conditions and livelihoods if supported by strict governance systems.

Forest governance in Kenya has seen substantial improvement since the enactment of the Forest Act of 2005. Introduction of Participatory Forest Management (PFM) to include local communities in forest preservation and management continues to produce intended outcomes. The Act highlights Community Forest Associations (CFAs) as leading institutions

guiding community participation (KFS, 2016). CFAs are mandated to link with the Kenya Forest Service (KFS) to manage forest resources. Although this is the case, their effectiveness is sometimes affected by insufficient funding, lack of technical expertise and conflicts between state and community interests (Mutune et al., 2020). The Kenyan government has further recognised the role of forests in achieving its Vision 2030 development goals and commitments under the Paris Agreement on climate change. Despite existing goodwill from the government, problems remain, and they include illegal logging, encroachment, and competing land uses, which is the primary threats to forest conservation efforts (Langat et al., 2020).

Nakuru County is located within the Great Rift Valley area and has diverse forest ecosystems, which include Mau Forest that is important for water base and biodiversity. The county has included PFM to address deforestation and degradation of Mau Forest which has faced major encroachment and illegal logging (KFS, 2019). Mau Forest is among Kenya's most important water towers providing ecosystem services that support agriculture, hydropower, and urban water supply. Despite these problems, governance weakness including weak enforcement of forest laws, corruption and reduced community participation continue to prevent forest conservation efforts (Langat et al., 2020). Nakuru County government in conjunction with national agencies and NGOs are working to improve community participation in forest management with minimal progress caused by resource constraints and rival land uses. Conversion of forest land to farm use is driving force to destruction of forests in the County proving conflicts between conservation objectives and livelihood needs (Kenya Forest Services, 2020).

Molo Sub County has a mix of forested areas and agricultural land. The Mau Forest ecosystem is part of the sub county and remains main area for conservation efforts in Kenya. Molo Ward specifically has witnessed increased community participation in forest governance through CFAs but faces governance problems like inadequate funding, lack of expertise and conflicts over resource use (KFS, 2020). The ward's closeness to Mau Forest makes it strategic area for conservation. Further, it is also hotspot for conflicts between conservation goals and livelihood needs. For instance, establishment of CFAs in Molo Ward has led to increased tensions between local communities and Kenya Forest Service over access to forest resources and benefit sharing structures (Langat et al., 2020). Further, inclusion of women and youths' groups in forest administration remains limited which shows bigger governance challenges related to equity and inclusion (Mutune et al., 2020).

Molo Ward case of provides an outline of bigger challenges and opportunities in forest governance and community participation. While global and national policies promote decentralized and participatory methods, their application at local level is often prevented by weak governance structures. Understanding these dynamics thoroughly is important for planning effective strategies to improve community involvement in forest management and achieve sustainable results. This study aims to investigate impact of governance on community involvement in forest management in Molo Ward, Kenya, to contribute to effective forest governance. Molo Ward risks continued forest degradation if this study is not conducted due to ineffective governance and lack of community participation. Without understanding policy impacts, exclusionary practices may continue leading to illegal logging, biodiversity loss, and resource conflicts. This would worsen climate vulnerability and threaten local livelihoods that depend on forests. Kenya faces quick deforestation, but current policies regularly fail to engage communities. As climate change deepens, participatory forest management is important for achieving Kenya's 10% forest cover target and ensuring sustainable resource utilization. Immediate research can identify policy gaps, strengthen community involvement, and prevent permanent ecological and economic damage in Molo Ward.

1.3 Statement of the Problem

Forests are critical ecosystems that offer vital goods and services, which include biodiversity conservation, climate regulation, and livelihoods for millions of people worldwide. Destruction and forest degradation remain primary challenges in developing countries where governance structures are weak and locals depend mainly on forest for their daily survival. Forests including the Mau Forest in Kenya play significant role in retaining water, supporting agriculture, and contributing to energy production but they face threats from illegal logging, encroachment, and unsustainable land use practices (KFS, 2019). Although participatory forest management included in the Forest Act of 2005 aimed to involve indigenous people in forest preservation effectiveness of these initiatives is challenged by governance problems including corruption, inadequate funding, and weak institutional frameworks (Mutune et al., 2020).

Community involvement in forest management in Molo Ward, Nakuru County which is part of bigger Mau Forest ecosystem has been promoted through establishment of Community Forest Associations but the extent to which governance structures influence success of these indigenous remains poorly understood. Although CFAs have been established improve local community participation in forest management, their effectiveness

is challenged by power imbalances, lack of practical capability and conflicts on resource access and benefit sharing (Langat et al., 2020). Furthermore, women and youths are mostly excluded in decision making processes which raise concerns about equity and inclusivity in forest governance (Mwangi et al., 2018).

Global and national policies encourage participatory forest management but governance challenges at the local level continue to be the obstacle to these efforts. This raises concerns about how governance structures at local levels affect capacity of local communities to be involved in forest management and achieve required outcomes. These forces need good understanding to plan policies and preventive measures that promote community participation and address governance flaws. The study aims to investigate influence of governance policies on community participation in forest management in Molo Ward and enable identify approaches to improve participatory approaches and promote sustainable forest conservation.

The study is continuation of other research of previous scholars as Agrawal, Ostrom and Chhatre, who established theoretical frameworks for community-based resource management. It also gets builds on research of Kenyan scholars like Mutune, Mwangi and Langat who in their research identified national challenges in participatory forest management including funding, capability challenges, and social exclusion. Main difference which makes this research different is in the scope because although previous research had identified problems existing in Kenyan forest governance, this study examines how and why these governance challenges come out clearly and in specific in Molo Ward. Through local analysis of power dynamics and institutional mechanisms, the research changes from general problem identification to understanding of governance failures at local level thus enabling development of adoptive solutions rather than broad recommendations.

1.4 Purpose of the Study

This study investigates impact of governance structures on community participation in forest management within Molo Ward. This research is motivated by knowledge of governance structure like policies, institutional frameworks and decision-making processes all of which enable or can prevent inclusion in forest resources administration. Focus is on changing aspects of forces between authority and local participation enabling the study to provide awareness into barriers and opportunities for effective management of forest in Molo Ward.

Outcome of this study reveals both means and implementation by bringing to light governance systems, strengthen community engagement and promote manageable forest management. The study also aims to contribute to strengthening forest conservation outcomes and improving living standards of local communities. This contributes to supporting national goals such as Vision 2030 and global commitments like United Nations' Sustainable Development Goals Especially Goal 15 Life on Land.

This study provides solution between governance and community participation in forest management thus facilitating practical recommendations for improving inclusive, transparent, and effective governance systems which support sustainable forest management and community survival.

1.5 Objectives of the Study

1.5.1 The study aims to:

i. To assess how current forest governance practices influence community participation in forest management in Molo Ward

ii. To assess governance factors influencing community participation in forest management in Molo Ward, Kenya.

iii. To identify governance opportunities for enhancing community participation in justifiable forest management in Molo Ward.

1.6 Research Questions

i. How do current governance practices influence community participation in forest management activities in Molo Ward?

ii. How do governance factors influence community participation forest management in Molo Ward?

iii. How do governance opportunities influence community participation in management in Molo Ward's?

1.7 Significance of the Study

This study enables critical insights into the country and region on importance of involving local communities in forest conservation. It also assists all stakeholders in

formulating means of addressing current challenges posed by climate change. Furthermore, finding contributes to increasing forest cover as they play significant role in carbon reduction by absorbing atmospheric carbon dioxide and mitigating climate change. Additionally, the study identifies ways to empower local communities in Molo Ward by examining their views and levels of commitment to forest management. By understanding challenges to participation and establishing workable approaches, the study enhances their association in decision making processes, improves livelihoods and fosters practice of belonging and involvement in forest preservation efforts.

Moreover, results offer important views to effectiveness of current forest management practices and factors that inspire community involvement. Policymakers and authorities are guided in formulating inclusive community led policies and approaches with this available information thus promoting sustainable forest conservation and improve climate resilience. Furthermore, the study contributes to understanding of community led forest conservation in sub–Saharan Africa. It will serve as a case study on difficulties of community participation by providing solutions for future research with some dynamics. Understanding prospects to promote community participation, study supports preservation of forest ecosystems in Molo Ward with effects on conservation, climate change prevention measures, and sustainable environmental activities. Research is in line with United Nations Sustainable Development Goals Mainly Goal 13 Climate Action and Goal 15 Life on Land and offers practical solutions to improve connection between community participation and sustainable forest management. This eventually promotes long term conservation and social and economic benefits.

1.8 Scope of the Study

This study took place in Molo Ward and concentrated on governance influence on community participation in forest management which eventually impacts climate outlined in earlier objectives. Research utilized data from past decade to analyse trends and changes in forest management. This time frame assessed current effects and long-term productivity of forest management practices. The study investigates forest management practices implemented in Molo Ward. These practices included afforestation, reforestation, sustainable logging, and community led forest management and preservation methods. They were eventually assessed based on their success in managing natural resources including forest.

The research also considered roles and views of various forest management stakeholders including Molo Ward residents, government agencies and nongovernmental

organizations (NGOs) involved in forest conservation and how government practices influence local communities regarding livelihoods, environmental benefits and resilience to climate related challenges which also formed part of the research. Active research and data collection for this study were conducted from March to April 2025 culminating in a final thesis submission in Jun 2025.

1.9 Delimitation of the Study

This research examines the government's influence in relation to policies and other measures that impact community perception in forest management while excluding specific influence of other stakeholders like international organizations and other forest conservation players. It was limited to interactions with local communities, government forest departments, and NGOs involved in forest conservation (Ngure, 2020). Private sector involvement in forest exploitation and other international actors was excluded to maintain clear research focus on local governance dynamics. Research excluded corporate and international influences as they could have introduced external variables like global market forces and donor policies which would have shifted focus away from objective of analysing domestic governance structures. This deliberate scope limitation enabled in depth examination of direct interactions among communities, government agencies, and local NGOs.

1.10 Limitation of the Study

Creswell (2012) defines limitations as probable challenges or weaknesses that may arise during research process. In this study, the researcher is a concerned citizen interested in good governance and is not affiliated with the Kenya Forest Service. This presented difficulties for researchers in accessing information from relevant government bodies. To solve this, the researcher obtained clearance letters from relevant university department, which facilitated cooperation with these institutions. Additionally, to address participants' potential fear of exposure, the researcher assured them that the study was primarily for academic purposes and that their data would be kept confidential.

Data availability and quality also posed challenges as there was lack of detailed and accurate data from previous studies on government influence on community perceptions and participation in forest management in Molo Ward. Historical data were inadequate affecting the accuracy of establishing connections between government influence and community perceptions (Kariuki, 2019). The researcher provides new original data by way of interviews

with residents, government officials, community leaders CFA members and NGOs, and focus group discussion (FGDs)

The twenty (20) year duration focused on by the scope for the studies on Molo Ward mean findings are specific to ensure understanding of local governance dynamics which expanded studies overlook. This methodological choice ensured rich empirical case study that offers analysis on how national policies like Forest Act of 2005 patent and shapes at local level. These findings serve as reference point to inform future studies in regions with similar socio ecological settings.

The study struggled to isolate specific government policies targeted at community level and how they may affect their participation in forest management making it difficult to establish direct causal links between specific forest management practices and community reactions in Molo Ward (Ngure, 2020). Furthermore, the research does not capture views of all stakeholders like private logging companies and international environmental organizations because primarily focus is on government and community actors. This results in incomplete appreciation of forest management practices and their impacts on forest cover in the region (Karanja & Ndungu, 2020).

1.11 Assumptions of the Study

Leedy and Ormrod (2010) emphasize that certain beliefs are essential for supporting research problem. The study assumed that the chosen sample had necessary information to solve research problems and influence outcome. Additionally, it assumed that participants responded to research tools honestly, cooperatively and without bias and in timely way. Finally, the study believes its findings can be widely applied to help Kenyan government understand how policies impact native community involvement in forest administration.

1.12 Theoretical Framework

According to Lederman and Lederman (2015) theoretical framework is the foundation for supporting research study. This study draws on three key theories: Community Based Natural Resource Management, Social Capital Theory and Theory of Planned Behaviour. Together, these theories provided complete structure for analysing community participation in forest management while providing important understanding of Molo Ward, Kenya's social, behavioural, and institutional dimensions. Additionally, theoretical framework informs policy recommendations aimed at strengthening community-based forest management, making it incredibly important to the study.

1.12.1 Community-Based Natural Resource Management (CBNRM) Theory

Community-Based Natural Resource Management (CBNRM) theory emerged in the 1980s, gaining recognition in the 1990s as response to limitations of top-down resource management mechanisms. It presents decentralization and focusses on active participation of locals in developing countries. The theory was endorsed during 1992 Earth Summit with supporters include Elinor Ostrom with work governing the Commons (1990) indicating ways in which communities can manage resources well through collective action. Further, Fikret Berkes also emphasised importance of local community awareness in championing sustainable resource management. The World Bank and International Union for Conservation of Nature (IUCN) also supported CBNRM. On the other hand, critics contend that decentralization sometimes result to control of resources by elites and excluding other groups. Further, they question whether all communities can manage resources as some advocate for national management in difficult environments.

The study utilized CBNRM as conceptual framework to analyse local participation, traditional practices, and institutional structures. It assists identify factors motivating involvement of locals and examines power aspects to ensure inclusivity. In summary, CBNRM provides framework for understanding community involvement in forest management and arises value of local knowledge, institutional arrangements and equitable participation thus making it relevant to this research.

The theory has weakness as it promotes power imbalances within communities noting that decentralization of management authority sometimes leads to elite capture. It takes place where local power holders monopolize benefits and exclude section of community. Furthermore, the theory has been criticized for its unrealistic assumption of communities as one entity with ability to collectively action together and overlooked the internal divisions conflicting interests which hinder effective organization. Without external support, many communities lack necessary including financial resources, expertise, and institutional strength to manage bigger resources when confronting powerful external pressures like commercial exploitation. These highlight gaps between the theory's participatory ideals and difficult socio-political realities on ground.

1.12.2 Social Capital Theory

The theory focuses on networks, relationships, norms, and trust that permit collective action within communities. It discusses importance of social connections in rising cooperation. The theory classifies social capital into three types: attachment, connecting and

linking and although it has its roots in early sociological believes, it gained momentum in late 20th century in the work of Pierre Bourdieu, James Coleman, and Robert Putnam. Pierre defined social capital as resources rooted in social networks while Coleman focused on its role in education and community development and Robert expanded the theory in bowling focusing on its importance for democracy and civic engagement. Critics argue that social capital is difficult to quantify because it leaves outsiders and reinforces existing differences which can sometimes lead to destructive outcomes including groupthink and creation of harmful norms.

Social Capital Theory serves as support to analyse how networks, trust and shared norms influence collective action in forest management and helps assess strong areas of community relationships, levels of trust and cooperation all of which are important for effective participation.

The theory identified challenges to participation that include weak networks and segregation of other groups. It raises role of traditional standards in directing forest administration by exploring bonding, association and linking social capital. This research investigates whether collaboration among community members, local leaders and external organizations is facilitated or prevented. Additionally, the theory provides policy recommendations for improving social capital. In summary, the theory is important as it provides complete lens to understand these dynamics.

Social Capital Theory has faced critiques on its possibility to prolong discrimination and its conceptual vagueness. Major criticism is that strong internal networks can create gap in group unity leading to exclusion of outsiders. It promotes existing social orders and marginalization of those without connections. The theory ambiguity does not differentiate between social capital that promote beneficial outcomes and that which enables harmful activities. This side of social capital means that important levels of trust and strong norms can sometimes enforce vices and discourage innovation. The theory is seen as difficult to define and measure empirically becoming challenging to quantify its impact thus leading to its application as catch all explanation for complex social structure.

1.12.3 Theory of Planned Behavior (TPB)

Theory of Planned Behaviour (TPB) was promoted by Icek Ajzen in late 1980s, in the psychological model which categorised human behaviour in three sections that are; attitudes, subjective norms and perceived behavioural control which controls individuals' aim to act. The theory builds on earlier theory of reasoned action by contributing professed behavioural

change to explain where individuals may not have complete control over their activities. TPB has been used in health, environmental sustainability, and education where behaviours such as recycling, physical activity and participation in community activities have been analysed and predicted. According to critics, the theory simplifies behaviour by focusing on thoughtful decision making while neglecting emotional l influences. Furthermore, some studies highlight gap between intentions and actual behaviours, suggesting that external hurdles can disrupt intention behaviours in relationship.

TPB provides a framework for examining factors that influence public acceptance of involvement in forest management events. It allows for assessment of their attitudes toward forest conservation such as whether they view it as beneficial or not. Furthermore, subjective norms like influence of community leaders, peers and cultural expectations and perceived behavioural control, are also assessed. By applying TPB, study aims to identify drivers to participation and hurdles to community involvement that include negative attitudes, lack of social support and low control over forest management outcomes. Understanding these factors goes on to inform policymakers to encourage participation through programs like awareness campaigns, promote positive attitudes, community involvement to strengthen social norms and capacity building initiatives to improve perceived control. In summary, TPB provides insights into factors that shape community members' eagerness to be involved in forest management in Molo Ward. By analysing attitudes, social norms and control, the study can develop strategies to raise more participation.

This theory has been challenged since its focuses on rational mindful deliberation and its common failure to account for intention behaviour gap. Furthermore, the model neglect's powerful role of sub conscience factors like emotional states, habits, fixed routines, and ethical duties which can override intentions. Furthermore, the model reveals bigger difference between person's intention and their actual behaviour. Moreover, its main mechanisms, attitudes, subjective norms, and perceived behavioural control are too static and fail to capture how these can change in response to added information.

In summary, Social Capital Theory directly engages with governance mechanisms by examining relational infrastructure, specifically trust, networks and norms that enable collective action. CBNRM establishes an institutional framework for decentralized governance and Theory of Planned Behaviour explains individual participation motives. Social Capital Theory highlights critical interpersonal and institutional connections that ultimately determine governance functionality and effectiveness.

1.13 Conceptual Framework

According to Grant and Osanloo (2014) conceptual framework acts as foundation that links literature review to research findings as it ensures consistency and clarity in validating how the study builds on existing knowledge. An organized structure of concepts guides research process by identifying key variables and their relationships. It often provides visual representation of theoretical constructs. In research paper, conceptual framework helps expressive study's theoretical basis, shaping research questions, methodology and analysis. It maps relationships between concepts enabling more systematic exploration of research topic (Ravitch & Riggan, 2017).

1.13 Conceptual Framework

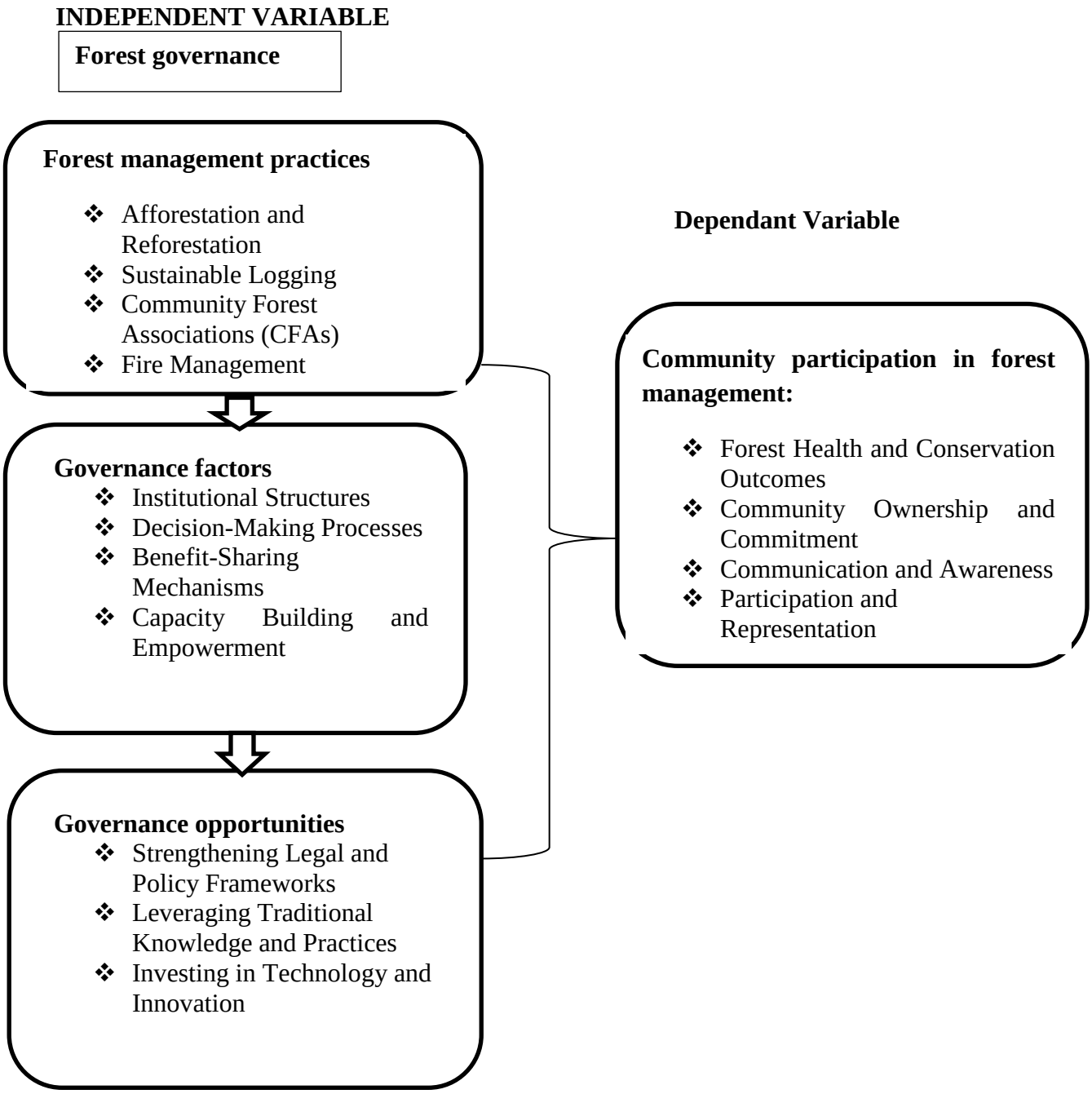


Figure *1.1:* Conceptual Framework
Source: (Researcher, 2025).

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter examines relevant writings that discuss relationship between governance policy influence and community involvement in forest governance in Molo Ward, Nakuru County. The chapter will cover: Empirical literature review; Summary of literature review; and Research gap.

2.2 Empirical Review

Government policies and interventions are important in shaping community participation and involvement in forest management. This review filters main findings from recent studies to investigate government actions like policy frameworks, regulatory enforcement, motivations and support by mandated institutional influence, community attitudes, engagement levels, and effectiveness of Community Based Forest Management (CBFM) in Molo Ward. This literature aligns with study's objectives giving an outlook into opportunities and challenges associated with government led forest governance. Understanding these dynamics enables policymakers to develop ways to improve community participation and ensure sustainable forest conservation and environmental preservation.

2.2.1 To assess how current forest governance practices influence on community participation in forest management in Molo Ward

Forest management practices in Molo Ward, Nakuru County, Kenya, like any other area in the country are mainly guided by Forest Act of 2005 which provides for Participatory Forest Management. The strategy involves locals in forest conservation and management thus providing for participatory conservation efforts. This framework established Community Forest Associations as leading institutions facilitating locals' participation in forest administration (KFS, 2016). PFM scheme is geared towards balancing preservation agenda with locals' interest of survival while using forest resources. Target focuses on those dependent on forest resources for agriculture, firewood, and other ecosystem services (Langat et al., 2020). In Molo Ward, CFAs working together with government organization like KFS advances and implement Forest Administration Plans (FAPs), drawing strategies for sustainable forest use. The strategies include reforestation, controlled harvesting and protection against illegal behaviour which includes logging and encroachment (Mutune et al., 2020). Although these efforts are in place, effectiveness of PFM in Molo Ward is limited by

weak governance structures such as funding, lack of experts and limited capacity of CFAs to enforce forest regulations (KFS, 2020).

Forest practices in Molo Ward such as afforestation, reforestation and community-based forest management (CBFM) play key role in restoring forest cover and empowering local communities. Afforestation and reforestation initiatives encourage community involvement through tree planting activities while promoting a sense of ownership, belonging, and environmental protection. Similarly, CBFM engages locals in decision making and resource management, improving their participation and ensuring they benefit directly from forest resources (FAO, 2020). Agroforestry integrates trees into farming systems, improving soil fertility, and expanding income sources. This initiative inspires farmers to adopt sustainable practices and participate in conservation efforts (World Agroforestry, 2021). When managed transparently, sustainable logging practices can provide jobs and income though they may also lead to conflicts if not handled well (Chomba et al., 2015). Fire management and water resource protection further includes communities in safeguarding forests and water sources which are important for their livelihoods (KFS, 2019).

Other practices like ecotourism development and payment for ecosystem services (PES) create economic opportunities and financial motivations for communities to engage in conservation (UNEP, 2018). Education and awareness programs increase understanding of forest benefits and motivating active participation while enforcing forest laws which ensures long term protection though it may cause tensions if not implemented well (Mwangi et al., 2012). Despite these efforts, challenges like awareness, competing land uses, inadequate resources and governance issues hinders community participation (Lund et al., 2018). However, successful engagement leads to positive outcomes including enhanced forest conservation, improved livelihoods and strengthened social cohesion, highlighting importance of inclusive and sustainable forest management practices in Molo Ward (Baynes et al., 2015).

Forest management's main challenges in Molo Ward are illegal logging and encroachment which remain major threats to forest conservation. Mau Complex hosts various areas including Molo area has suffered immense destruction caused by several activities among them deforestation leading to destruction of water sources (KFS, 2019). Langat et al. (2020) observe that lack of strong enforcement mechanism of forest laws and corruption worsens continues to worsen the condition. Additionally, conflicts over available resource use sometimes increases due to competing interest on use of land in diverse ways, agriculture, and settlement for new homes. Large section of Mau Forest has been affected in the sense

that locals continue to convert forest land to agricultural land increasing deforestation (KFS, 2020). The conflict reflects growing tension between conservation goals and need for survival by local communities thus projecting need for inclusive and impartial forest management practices.

Marginalization of women, natives and youths from decision making is another critical issue as it prevents involvement and equity of forest management practices and undermines benefits of PFM among the local stakeholders (Mutune et al., 2020). Research have proven that though some community members acknowledge benefits of PFM like access to forest resources and livelihood opportunities, others feel excluded from such benefits blaming decision making processes and forest policies as restrictive (Mwangi et al., 2018). This difference in community views show the need for inclusive governance structures that ensure all members of community mainly women, youths and natives have a voice in forest management.

Several initiatives have been implemented in Molo Ward to address these challenges including launch of afforestation and reforestation programs by KFS in collaboration with CFAs and NGOs to restore destroyed forest areas. The programs include planting indigenous tree and starting tree nurseries program to support community led conservation efforts (KFS, 2019). Further, capacity building programs have been included to improve technical and managerial capacity of CFAs. Focus is on providing them with required knowledge to enable them implement effective forest administration policies (Langat et al., 2020). Involvement of public on awareness campaigns have been done to educate local communities on importance of forest conservation and benefits good forest administration (Mutune et al., 2020).

Despite the weaknesses, opportunities are available for improving forest management practices. Improving PFM effectiveness can be attained by strengthening governance structures like promoting transparency, accountability, and inclusivity in decision making processes. (Larson et al.,2016). Providing fair resource sharing to all parties in the community to benefit from forest resources will go in long run to strengthen conservation efforts and participation (Mwangi et al., 2018). Furthermore, including local understanding and behaviours to forest management can go along to improve effectiveness and conservation strategies (Langat et al., 2020). All these go the long way in appreciating need for local knowledge and other government policies to recognize sustainability in forest management.

Current forest management practices in Molo Ward are determined by Participatory Forest Administration with the aim of facilitating involvement of locals in conservation

efforts. These practices face challenges including illegal logging, encroachment, and weak governance. Solving these challenges requires improving governance structures, building local capacity, and promoting equitable in forest management. This research provides details and assessment of current forest management practices in Molo Ward and identify ways for improvement.

2.2.2 To assess governance factors influencing community participation in forest management in Molo Ward, Kenya.

In Molo governance factors shape community participation in forest activities. They include legal and policy structures, forest Conservation and Management Act (2016) that provide formal mechanisms for community inclusion in forest management through Community Forest Associations. This provides locals with opportunity for participation in forest management and benefit sharing (KFS, 2019). Through the (2010) Constitution which natural resource management to county governments and promoted localized decision making, greater community engagement continue to gain momentum (Mwangi et al., 2012).

Unclear land tenure and ownership continue to project uncertainty leading to conflicts as it hinders participation. For instance, unresolved disputes over land rights can create mistrust and misunderstanding in communities (Chomba et al., 2015). Kenya Forest and CFAs are vital in enabling community participation. Their effectiveness depends on inclusiveness, transparency, and accountability in decision making processes. When women and youth are excluded, participation becomes irregular and undermining collective efforts (Lund et al., 2018).

Equitable distribution of benefits and access to forest resources is another factor as communities are likely to engage in forest activities when they view benefits as income from ecotourism and forest products are shared fairly (Baynes et al., 2015). Improving capacity by training and awareness programs empower communities with required knowledge and skills for sustainable forest management (FAO, 2020). Conflict resolution plays significant role considering that prolonged disputes over land and resources can prevent teamwork. Financial and technical support from county governments, NGOs and donors enhances participation by providing resources for tree planting and firefighting (UNEP, 2018). Including traditional knowledge and cultural practices into forest management raises community participation through social unity and political. Feedback mechanisms and performance tracking help maintain accountability and improve participation over time (KFS, 2019).

Community involvement in forest management is at cornerstone of sustainable forest conservation in Molo Ward where forests are important for livelihoods, biodiversity, and ecosystem services. However, extent and effectiveness of community participation are influenced by a range of factors among them governance structures, socio economic conditions, cultural practices, and institutional frameworks. Governance policies are important in directing community participation considering the Forest Act of 2005 which provides legal guide for community involvement through CFAs (KFS, 2016). However, weak governance that provide loophole for corruption, lack of transparency and limited devolution of power and resources often undermines effectiveness of these institutions (Mwangi et al., 2018). Studies have shown that inclusive, transparent, and accountable governance structures enhance community participation and improve forest conservation outcomes (Larson et al., 2016).

Socio economic conditions also influence locals' involvement in forest management practices. Langat et al. (2020) assert that in Molo Ward, many households' livelihoods depend on forest including firewood, timber, and non-timber products. Poverty and lack of other alternative means for survival push locals to get involved in unmanageable practices such as illegal logging and encroachment thus undermining conservation efforts (Mutune et al., 2020). Rewarding ecosystem services and other sources of income linked to forest conservation have promoted community participation through aligning conservation goals with livelihood needs (KFS, 2019). Both cultural practices and traditional knowledge direct community outlooks and behaviours on forest management. In Molo Ward, natives appreciate that traditional systems guided sustainable resource use but currently they are ignored through formal forest management (Langat et al., 2020). Using traditional knowledge in forest management can improve community involvement in forest activities by making conservation strategies culturally acceptable (Mwangi et al., 2018).

Communities that understand forests environment and commercial benefits through awareness participate in conservation activities (Mutune et al., 2020). In Molo Ward, awareness campaigns and education programs for build capacity have been implemented toto impact community with knowledge on importance of forest conservation and role of PFM (KFS, 2020). This is sometime affected by limited access to education and information that side lined majority mainly women and youth. Gender inclusion is principal factor for community participation. In Molo Ward, women and youths' groups are sometimes not involved in decision making processes despite their reliance on forest resources (Mwangi et al., 2018). This exclusion reduces their involvement on forest management and undermines

benefits of PFM. Promoting gender sensitive approaches and ensuring involvement of women and youths encourage effectiveness of forest management methods (Langat et al., 2020).

Resource availability in term of funds, expertise, and infrastructure influences community participation in Molo where CFAs lack resources and capacity to implement forest management plans thus affecting their ability to involve communities (Mutune et al., 2020). Training in forest management and fiscal management knowledge improves effectiveness of CFAs and increase community participation (KFS, 2019). Further, providing communities with resources like tree seedlings and equipment for forest patrols goes on to promote active participation in conservation activities.

Land tenure and resource remain dire factors influencing community participation in forest management. In Molo Ward, unclear land tenure systems and conflicts over resource ownership discourage communities from participating in conservation activities (Langat et al., 2020). Clearly defined resource rights and clear land tenure can promote community participation by enabling pride in ownership and accountability in forest resources (Larson et al., 2016). Community Land Act of 2016 in Kenya provides legal framework for identifying and protecting community land rights but up to now, its implementation in Molo Ward remains ineffective.

Power conflicts among locals and external actors prevent participation in forest management. Molo Ward, conflicts mainly over resource use e.g. between pastoralists and farmers undermines combined conservation efforts (Mutune et al., 2020). Further, power between locals and authorities, agencies and NGOs can also lead to mistrust and reduce participation in forest management activities (Mwangi et al., 2018). Finding lasting solution to these conflicts and inspiring all rounded participation and decision-making processes is important for increasing community participation.

In conclusion, community involvements in forest management are influenced by several activities in Molo Ward and are difficult and connected. Governance structures, socio economic conditions, cultural practices, awareness and education, gender and social inclusion, resource availability, land tenure, and conflicts resolving mechanism all shape community involvement. These factors require rounded approach including policy reforms, education, and community empowerment to address them and promote participation and achieve forest management. This research include understanding through looking into factors influencing community participation in Molo Ward and identifying was for promoting involvement in forest conservation efforts.

2.2.3 To identify governance opportunities for enhancing community participation in justifiable forest management in Molo Ward.

There are Several Opportunities to improve community participation using existing policies, institutional structures, and local knowledge. Improving community involvement in forest administration is important because to enables achieving conservation agenda which at the end of the day improving livelihoods in Molo Ward. Among the main ways include improving governance structures, education to create understanding, motivation through economic incentives and involving all players in decision making.

Improving governance structures is at the centre of effective realization of successful model in Molo ward forest management. This is achieved through transparency, accountability and inclusivity that is provided for in the forest Act 2005 and Community Land Act of 2016. The two gives required legal guidelines for participatory forest management and community land rights. Although there exist required policies they have been in effective due to weak governance that has facilitated loophole for corrupt individuals and interfere with empowering of local communities to be full involved in the management of forest in Molo Ward (Chomba et al., 2020). There's need for local community to be empowered through seminars in Community Forest Associations and encouraging transparency in decision making processes. Eventually this goes on to improve trust and encourage community participation. For instance, creating structures for benefit sharing and conflict resolution empowers communities to take ownership of forest management activities (Baynes et al., 2017).

Capacity building and education play significant role in promoting community engagement. Many communities in Molo Ward lack technical knowledge and skills required to implement effective forest management plans. Training programs on sustainable forest management, financial literacy and leadership can equip community members with knowledge required to participate actively in conservation efforts (FAO, 2020). Enlightenment programs that highlight forests' ecological and economic benefits can nurture a sense of accountability with leadership among communal members. Utilization of learning institutions can enable favourable conditions in promoting environmental education while ensuring that future generations are aware of the importance of forest conservation (Mugo et al., 2021).

Providing economic incentives and alternative livelihood opportunities is another effective strategy for promoting community engagement. Locals in Molo Ward rely on forest

resources for livelihoods which results to overexploitation of forest resources and using illegal ways including illegal logging and encroachment. Introduction of other ways to generate income but with connection to forest conservation e.g. beekeeping, ecotourism and agroforestry can reduce use of illegal ways to gain forest resources which eventually destroy the forest and bring to line conservation goals with livelihood needs (Kariuki et al., 2022). Payment for ecosystem services methods where communities are compensated for conserving forests is also another way to encourage community participation and provide sustainable source of income (Mwangi et al., 2019).

Encouraging inclusivity and appreciating the need for women participation in decision making is key in promoting community engagement in forest management. Women and youth in Molo Ward are not involved in decision making processes yet play significant role in conservation of the forest and further utilise resources from the same forest. Encouraging participation of these groups in CFAs and other forest administration institutions can improve conservation efforts (Njogu et al., 2020). For instance, establishing women led forest management committees and providing training and resources can empower women to lead forest protection efforts. Furthermore, using local knowledge and practices can make conservation plans more significant and culturally acceptable (Kiptoo et al., 2021).

New opportunity for improving community involvement in forest management is provided through technology and innovation. The use of Geographic Information Systems and remote sensing can improve forest monitoring and providing locals with real time data on forest cover changes (Muthee et al., 2022). Further, use of mobile applications and involving community in reporting systems can improve communication between communities and forest authorities which creates quick reaction to illegal activities and encroachment. More so, social media can help by highlight challenges and posting educative messages about forest conservation. They can also be used mobilize community support for sustainable practices (Gichuki et al., 2023). Youths are likely to leverage this space to engage and promote conservation in Molo Ward.

It is important for government institutions, NGOs, and local communities to partner in promoting community involvement in forest management. In Molo Ward, partnerships between KFS, Green Belt Movement and World Wildlife Fund (WWF) continue to support reforestation and providing required platforms for workshops that impact locals in capacity building initiatives (Langat et al., 2021). Encouraging such collaboration and bringing in unpractised players among them private sector actors and research institutions can provide additional capability and required parties for sustainable forest management. Public private

teamwork can support ecotourism enabling jobs creation and generating resources for forest conservation (Korir et al., 2020).

Involving youths is another critical area that has not been well used in improving community involvement. Involving young people in conservation activities through school programs, youth led CFAs and environmental clubs can encourage ownership attitude and responsibility for forest resources (Onyango et al., 2022). Making youths access training and mentorship opportunities in forest management enables them have skills required for future leaders in conservation. Youths pose required energy if well utilized can promote creativity and innovation in forest practices (Wambugu et al., 2023).

In conclusion, promoting community participation in forest management in Molo Ward requires addressing governance ability, building capacity among locals, improving economic opportunities, encouraging inclusivity, use of technology, encourage partnerships and including youth in forest activities.

Strengthening governance structures by eliminating challenges of corruption, providing training through workshops, and making available of required resources for forest management, promoting youth and women inclusion in forest management can empower local communities to be involved forest conservation activities. Alternative economic activities and other livelihood opportunities can align conservation goals with livelihood needs. Technology and innovation improve monitoring and communication in today eras. Partnerships engagements and youth involvement provide additional resources and encourage innovation in forest management. Using all these available opportunities can push Molo Ward forward to implement conservation approaches that realize restoration of Mau Forest and further improve lives of locals. The research will contribute to this understanding by exploring strategies for improving community engagement in forest management and identify best practices for sustainable conservation.

2.3 Summary and Research Gap

The literature highlighted importance of locals' inclusion in management of forest with focus on Molo Ward where forests Mau Forest is important for livelihoods, biodiversity, and ecosystem services. The Forest Act 2005 and Community Land Act 2016 provide legal structure for community participation in forest managements CFAs which aims to encourage local communities in conservation efforts. Effectiveness of the same is limited by weak governance structures, socioeconomic challenges, limited knowledge, and lack of involvement by women and youths.

Main factors motivating community participation include transparency, economic motivations, cultural practices, awareness, education, and secure land tenure. Prospects for improving community engagement include strengthening governance structures, capacity building, providing economic opportunities, and encouraging inclusive and addressing gender complex approaches. More so, technology usage improves partnerships and encourage youth in conservation activities. Illegal logging, encroachment, and conflicts over resource use remains thus undermining efforts to manage forests.

The literature combines works of scholars in forest management by global theorists and regional experts. Work by scholars like Agrawal, Ostrom and Chhatre founded theoretical principles of community-based governance and decentralized resource management. In Kenyan and East African these theories have been empirically tested by researchers like Mutune, Mwangi and Langat whose research focuses specifically on Mau Forest ecosystem alongside Kariuki and Birner who provide comparative East African analysis. Although their topics focused on participatory forest governance, they differ in specific focus. Mutune et al. examine impacts on livelihoods and institutional capacity, Mwangi et al. analyses gender inclusion and power dynamics and Langat et al. investigate threats such as illegal logging and integration of traditional knowledge. These scholars used mixed methods approaches combining surveys and interviews.

Their findings show reliable pattern as participatory methods promise stability in forest management though implementation is challenged by funding, weak institutional, elite capture lack of inclusion of section of community especially women and youth which results in need to strengthen governance structures, enhance transparency and ensure equitable benefit sharing.

Tensions between intended policy purpose, realities on ground and culture of exclusion of women and children remains thus affecting desired outcomes. The study builds on this foundation to conducting thorough analysis of these governance dynamics within Molo Ward to move from identified challenges to understanding their specific local demonstrations thereby addressing the gap between national policy and local implementation strategies.

2.3.1 Research Gaps

While existing studies provide outlook into aspects promoting local desire to be involved in forest management and prospects for improving involvement, several gaps remain: Limited Focus on Local knowledge where most studies on participatory forest

management in Kenya focused on the whole area and national level policies with limited attention to local contexts like as Molo Ward. Research on local outlooks is required to understand challenges and prospects faced by specific communities. There lacks enough research on Gender Dynamics where lack of inclusion of women and youths' groups is acknowledged. There is no research on how gender perspectives influence forest management practices in Molo Ward. Understanding these dynamics is important for formulating inclusive ways.

Challenge of using traditional knowledge and current management practices. Although local data is appreciated as resource for forest management, there is no research on how effective this knowledge has been used together with current knowledge to realise sustainable forest management in Molo Ward.

Technology usage where technology and innovation like GIS, remote sensing and mobile applications can be used to promote community engagement in forest management remains underexplored in of Molo Ward. There is limited research base on how to effectively youth can be used in forest management and utilize their creativity and energy for conservation. Economic Motivations and Livelihood Alternatives: While economic incentives are recognized as important drivers of community participation, there is need for further research on effectiveness of specific livelihood alternatives such as ecotourism and agroforestry in reducing reliance on unsustainable forest practices.

Investigating these gaps through research provides valuable perceptions for enhancing local involvement in sustainable forest management in Molo Ward and similar contexts. This research aims to fill these gaps by exploring factors that influence community participation, identifying opportunities for improvement and providing evidence-based recommendations for sustainable forest conservation. Furthermore, research provides comprehensive understanding of how to enhance community involvement in sustainable forest management, ultimately contributing to achievement of national and global sustainability goals.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines research methodology used in the study. It covers research design, research site; target population; study sample size; Data collection methods; data collection instrument; pilot testing of the research instrument; instrument's reliability; validity of the research instrument; data collection procedure and approaches for data analysis.

3.2 Research Design

The research design for this study was an explanatory survey research design to investigate influence of governance on community participation in forest management in Molo Ward. The selection of an explanatory survey design was particularly appropriate for this research as it enables systematic examination of causal relationships between governance influence (independent variable) and key performance outcomes related to community participation in forest management (dependent variables) (Creswell & Creswell, 2018). This method was suitable for exploring complex socio ecological systems as it enables data triangulation.

3.3 Research Site

According to the National Institutes of Health (2020) and Creswell & Creswell (2018) research site is physical location where research is conducted. This research was conducted in Molo Ward located in Nakuru County within the Rift Valley region of Kenya. It is part of larger Mau Forest Complex and one of Kenya's most important water towers and key biodiversity hotspots. Mau Forest Complex spans several counties, including Nakuru, Kericho, Bomet, and Narok, and is the largest indigenous mountain forest in East Africa (KFS, 2019). Molo Ward is in the eastern part of Mau Forest, bordering the wards of Elburgon, Mariashoni and Turi. The area features diverse mix of forested areas, agricultural land and settlements making it unique site for studying community participation in forest management.

Economically, Molo Ward is characterized by an agrarian economy with most residents engaged in small scale farming and livestock rearing. Both climate and soil support farming of maize, potatoes, beans, and vegetables which are primarily grown for subsistence and local markets (Langat et al., 2020). Further, dairy farming also supports communities economically. Molo is also known for its horticultural farms mainly those specializing in

cultivation of flowers and vegetables for export which contribute to local and national economy (Mutune et al., 2020).

Forest related activities enable additional economic opportunities since a lot of households rely on forest for firewood, timber and other products such as honey, herbs, and wild fruits (KFS, 2020). The over exploitation of forest resources through illegal logging and charcoal production continues to lead to degradation, posing threat to long term sustainability of these resources. In recent years, efforts have been made to promote ecotourism and agroforestry as alternative livelihood that align with forest conservation goals (Mwangi et al., 2018).

Molo Ward has diverse population including the Kikuyu and Kalenjin communities, which are dominant ethnic groups. The ward also hosts several other communities, including Luhya, Kisii and Luo (KNBS, 2019). According to Kenya National Bureau of Statistics (KNBS) population of Molo Ward is estimated to be approximately 50,000 people with relatively even distribution of males and females (KNBS, 2019). The population density is moderate with most residents living in rural settlements scattered across the ward.

The population is predominantly young with approximately 75% under the age of thirty-five reflecting national demographic trend (KNBS, 2019). Youth unemployment and underemployment are pressing issues that prompt many youths to relocate to urban areas in search of job opportunities. This demographic vibrancy affects forest management as youth outmigration reduces their prospects for involvement in conservation activities (Mutune et al., 2020).

The areas around Molo Ward like Elburgon, Mariashoni and Turi share similar economic and demographic characteristics. These areas also rely on agriculture and forest resources with small scale farming and livestock rearing as their primary economic activities. Elburgon for example is known for its timber industry which has historically contributed to deforestation in Mau Forest Complex (KFS, 2019). Mariashoni and Turi are mainly agricultural focusing on tea and dairy farming. These areas are also part of larger Mau Forest ecosystem thus making them important for regional water catchment and biodiversity conservation.

Molo Ward is strategically critical area for studying community participation in forest management due to its location within the Mau Forest Complex. Community's reliance on forest resources for livelihoods and its diverse population make it an ideal setting for the

study. Economically, residents rely on agriculture and forest related activities which show interdependence between communities and forest ecosystems.

Unsustainable practices and demographic challenges such as youth outmigration pose main threats to forest conservation efforts through two primary pathways: loss of human capital and strengthening of dependence on unsustainable practices. When they leave and they the one working to fend for their families, they channel their reliance on immediate resource available which is forest thus overexploitation of the same. Understanding these structures is important for coming out with workable strategies to promote community participation in forest management. This research contributes to understanding factors persuading community engagement and identifies ways for improvement in Molo Ward and other areas with similar dynamics.

3.4 Target Population

Mugenda & Mugenda (2003) explain that population means an entire grouping of people, occurrences and things that share observable traits. The research was conducted in Molo Ward, Molo Sub-County, Nakuru County, Kenya. According to Kenya National Bureau of Statistics (KNBS), the population of Molo Ward is estimated to be approximately 50,000 people with relatively even distribution of males and females (KNBS, 2019). The table below summarizes the target groups included in the research.

Table 3.1: Target population

Category	Estimated Population	Description
Members of **Community Forest Associations (CFAs)** in Molo Ward.	42	Individuals are liable for managing forest resources and implementing sustainable practices.
Locals, including women and youth.	50,0000	Community members living near forests impacted by climate variability and the well-being of forests.
Representatives from the **Kenya Forest Service (KFS)** and other relevant government agencies	8	
(NGOs), (CBOs) involved in forest conservation.	21	

3.5 Study Sample

The study sample is subset of entities, groups or objects chosen from whole group to contribute to research work. It is picked to signify larger population, permitting researchers to collect data that can be generalized to the entire group (Creswell & Creswell, 2018). The sample was typically selected using specific sampling techniques such as random or stratified sampling to ensure it is representative and unbiased. In this study, the sample includes CFAs members' twenty (20), local community members one hundred and seventy-eight (178), Representatives from the Kenya Forest Service (KFS**)** and other relevant government agencies (08), and NGO representatives in Molo Ward three (03), who are selected to provide insights into community participation in forest administration practices. The sample size and composition are carefully determined to ensure that the results are valid, reliable, and relevant to the target population.

3.5.1 Sampling Procedure

The sampling technique is systematic method of selecting subgroup of individuals/ components from larger population ensuring that chosen sample provides representative perceptions and allows for generalizations about entire population. This process involves various techniques each with advantages and limitations to reduce bias and enhance sample's representativeness (Creswell & Creswell, 2017; Trochim, 2006). For this study, stratified random sampling technique was used to ensure an unbiased selection.

The target groups were first divided into distinct bands centred on key stakeholder groups, including members of Community Forest Associations (CFAs), local community members, KFS officials and NGO representatives. These strata were categorized by geographic location (villages or sub locations within Molo Ward) to capture regional variations. Random sampling method was used within each band to select members ensuring that every band is represented. This approach reduces bias and promotes ability to generalize research findings to broader population. The population was divided into strata based on characteristics such as location and forest dependency.

Purposive sampling approach was used to target groups with specific knowledge and experience required for the study. Purposive sampling makes researchers to select specific individuals that align with study's objectives. Selection of forest officers, local leaders, and representatives from NGO with experience in forest governance and community participation to gather in depth knowledge made the researcher attain required purpose of the study. This mixed methods method guaranteed bigger community representation while targeting specialized knowledge thereby improving validity and application of findings.

3.5.2 Study Sample Size

According to Thompson (2013), Sampling by the researcher is used to select specific individuals, objects/events for study. Simple random sampling design was used to sample household heads. This sampling design gave each potential sample (item) of size N selected from population of size N, an equal and unbiased chance to be included in the sample. This technique is non-biased. To establish right sample size, the research used Slovin's formula below: N / (1 + Ne / (1 + Ne1+Ne^2). Whereas:

n = no. of samples N = total population

e = error margin/margin of error=0.0

n = 50 0000 / [1+50, 000 (0.075^2)]

n = 500000 / [1+50,000 (0.005625]

n = 50,000 / [282]

n =178

The qualitative research stage involved interviews and focus group discussions (FGDs) with main population including CFA leaders, Kenya Forest Service (KFS) officials, and NGO representatives. The sample size for qualitative research is typically smaller than for quantitative research as the focus is on depth rather than breadth. For interviews, sample size of thirty-one key individuals is sufficient to gather full information where no new subjects/perceptions emerge from additional discussions (Guest et al., 2006). Selecting key informants was purposive, ensuring representation from different stakeholder groups, including:

Table 3.2: Sample Size

Target Population Category	**Population**	**Sampling Size**
Members of Community Forest Associations (CFAs**)** in Molo Ward.	42	20
Natives, including women and children.	50,0000	178
KFS	8	8
NGOs and CBOs are involved in forest conservation.	21	3
Total		**209**

3.6 Data Collection

Kabir (2016) defines data collection as controlled and systematic gathering and evaluation of information, focusing on precise variables of interest. This process ensures that researchers effectively traverse through research questions, test objectives, and evaluate results.

3.6.1 Data Collection Instruments

This research uses quantitative and qualitative data collection instruments to gather data on locals' involvement in forest management in Molo Ward. Research used semi structured questionnaires on quantitative data collection which gathered information on demographic characteristics, levels of participation, and perceptions of forest management practices and economic dependence on forest resources. Questionnaires were multiple choice and Likert scale to enable quantitative analysis and ensure uniformity in responses. According to Cohen et al. (2011), questionnaires are effective in reducing errors and providing accuracy of results. Kothari (2004) further noted that questionnaire has ability to collect large volumes of data from many participants while reducing risks of bias. Survey was conducted through face-to-face interviews to ensure clarity and high response rates.

Qualitative data from key informants including CFA leaders, government officials and representatives of NGOs was done to supplement questionnaires. Interviews were semi structured to allow flexibility to see the sights on emerging issues during conversation while maintaining consistent framework. Gillham (2000) notes that interview schedules whether fully structured or semis structured are important tools for gathering data from respondents. They provide reliable data collected across participants making them good for gathering in depth view of governance structures, challenges, and opportunities for promoting community participation.

Additionally, focus group discussion guides were used to investigate collective perspectives and experiences of community members. These guides included open ended questions and prompt to facilitate group discussions on locals' involvement in forest management practices, challenges to participation and role of traditional knowledge in forest conservation. FGDs promote debate among members generating informed qualitative data and gathering different views within the community. Together, these instruments ensured elaborative strategy for data collection, supporting study's objectives and enhancing legitimacy and dependability of its findings.

3.6.2 Pilot Testing of Research Instruments

According to Orodho (2005) 10% of sample population is suitable for instrument pilot testing**.** Elbagon North Ward was used for study's pilot as its context closely resembles the climate and economic activities of area to be researched. Piloting phase aimed to assess validity and reliability of research instruments. Based on feedback and results, changes were made to ensure instrument remained effective and appropriate during the study. This step was important for fine tuning the tools and ensuring accuracy and consistency of data collection process.

3.6.3 Instrument Reliability

According to Cohen, L., Manion, L., and Morrison, K. (2017), instrument reliability refers to consistency of measurements obtained by using research tools such as surveys, questionnaires, and tests, interview schedules over time and across different situations. Reliable instrument produces same outcomes when applied under similar conditions ensuring accuracy and credibility of research findings. Reliability is crucial element of any study process considering that dependability of research tool directly impacts validity of results. Lack of reliability in research tools generates inaccurate findings and hinders attainment of research objectives. Therefore, research tools need to be consistent across all tests conducted during study to ensure valid conclusions.

Berg and Gall's (1989) approach was utilized to ensure reliability where the sample of assessment tasks reflects content the test is designed to evaluate. To enhance validity of the content of measures, researcher followed standard procedures by consulting supervisors and professionals in the field as recommended by Mugenda and Mugenda (2013). This helped to ensure accuracy of measures thus increasing their trustworthiness. Any inconsistencies identified in instruments were addressed to ensure they evaluate intended aspects of research framework.

Moreover, the researcher utilized test-retest approach to measure reliability of study instruments. It involves administering same experiment to sample of members on two separate occasions and comparing outcome to assess reliability. Selection of participants for this process was based on relevance to the study. This method confirms stability and reliability of instruments ensuring they consistently produce accurate research data.

3.6.4 Instrument Validity

According to Creswell, J. W., & Creswell, J. D. (2018), instrument validity is degree to which research tool accurately assesses what it is intended to assess. It ensures that data collected is meaningful and appropriate to research objectives. Validity is important to research quality as it determines whether findings can be trusted and generalized. According to Mugenda and Mugenda (2003) an Alpha value ranging from 0.7 to 0.9 is acceptable when assessing validity. In this research, internal consistency of instruments was evaluated using Cronbach's alpha. This statistical approach measures tool's reliability based on correlations between items.

For research to succeed or fail, it depends on the tool's ability to accurately measure construct it is designed to evaluate. If research instrument fails to assess intended construct effectively, it can result in confusion, unreliable findings, and inability to validate and achieve research hypothesis/objectives. Making sure validity of study instruments is a key step in research process as it directly impacts credibility and accuracy of the outcomes.

3.6.5 Data Collection Procedure

The researchers supported two trained research assistants distribute questionnaires to community members on Google Forms. This approach was practical given strong internet access in Molo Ward use of smartphones among residents. Research assistant was chosen from communities living near Molo Forest in Molo Ward based on their knowledge of the area and local cultural practices. These assistants were taken through lessons and training to ensure they were prepared to meet research objectives. The researcher supervised data collection process to make ensure that principles of integrity and ethical research standards were observed as emphasised by Eiras (2011). This includes observing transparency, confidentiality, and accuracy throughout data collection.

Secondary data was gathered through literature review to support primary data. It involved analysing of peer reviewed academic journals with focus on forest management, community participation, and climate change. Data on forest cover and policies were accessed from government reports at Kenya Forest Service, the Kenya National Bureau of Statistics and Ministry of Environment. Data for global and regional overview were obtained from reports published by international organizations including Food and Agriculture Organization, the United Nations Environment Programme and International Union for Conservation of Nature Further, dissertations were reviewed to extract relevant case studies and methodological insights pertinent to the study.

3.7 Data Processing and Analysis

The collected data was first sorted and grouped by participants to simplify analysis process. Data was analysed quantitatively and qualitatively with Statistical Package for Social Sciences (SPSS) used for quantitative analysis. This involved performing descriptive statistics to summarize key variables and inferential statistics such as correlation, regression, and chi-square tests to examine relationships. For qualitative data from interviews and focus group discussions, thematic analysis was applied. This method helped identify recurring themes, underlying motivations and perspectives on forest management providing deeper insights into quantitative findings.

To ensure both validity and reliability of the study, triangulation was used to combine and cross validate results from both quantitative and qualitative analyses. This approach strengthens the findings and elaborates on the research problem.

The results are presented in clear and structured format using tables, graphs, and charts while qualitative data presented through direct quotes, narratives, and thematic summaries. All findings are interpreted in alignment with research objectives and theoretical framework.

3.8 Legal and Ethical Considerations

The researcher received approval for the study from the Department of Governance, Peace and Security Studies within the School of Humanities and Social Sciences at The Africa Nazarene University. Research permit obtained from Kenya Forest Service, the Ministry of Education, and the National Council for Science, Technology, and Innovation (NACOSTI). Before data collection began, the researcher explained the research purpose to all participants while assuring them of the confidentiality of their responses and identities. Research followed ethical standards by respecting rights of respondents including their right to privacy. All responses were kept anonymous and participants were informed of their voluntary involvement. They were further advised that they were at liberty to participate or not to take part in the study ensuring that no one was coerced into doing so. Furthermore, data collected was treated with utmost confidentiality and used exclusively for this research. These measures were in place to uphold ethical behaviour and protect rights and wellbeing of all participants involved in the study.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter outlines findings and analysis obtained from survey. It begins by presenting participants' profiles and examining their demographic characteristics. Subsequently, main data is analysed in alignment with study's three specific objectives and key questions from questionnaire and interview schedule. Results are presented using tables, pie charts, and graphs to enhance clarity and readability. Analysed data is organized meaningfully to support thorough discussion of findings.

4.2 Response Rate and Demographic Profile

4.2.1 Response Rate

The data collection phase was successful and out of 209 questionnaires issued to survey participants, 136 were returned all fully answered and used in analysis. The 136 returned questionnaires and 31 successful interviews represented an overall return rate of 81.3%, which according to Mugenda and Mugenda (2003) is an excellent response rate enough to permit analysis. This left 42 questionnaires unaccounted for representing 21.1% non-response rate. These missing responses typically stem from three main factors that include non-respondents who chose not to participate, incomplete submissions that could not be used in analysis and logistical failures where questionnaires were undelivered. Similarly, interview sessions were successful as all 31 targeted interviewees fully cooperated and participated in the study. Mugenda and Mugenda (2012) recommend that 50% response rate is adequate to permit researchers to proceed with data analysis, describing response rates of 60% and 70% as good and excellent, respectively. Similarly, Kothari (2011) states that response rates above 70% are excellent. Based on these recommendations, response rate achieved in this study was deemed sufficient thus enhancing confidence in generalizability of the findings.

4.2.2 Respondents Gender

According to results presented in Figure 4.1, respondents' gender indicates that 65.4% (110) of survey participants were male while 34.6% (57) were women. Possible explanation for this distribution could be gender stereotypes in our communities that prevent women participation in this kind of activity and institutional bias in most professions in our country.

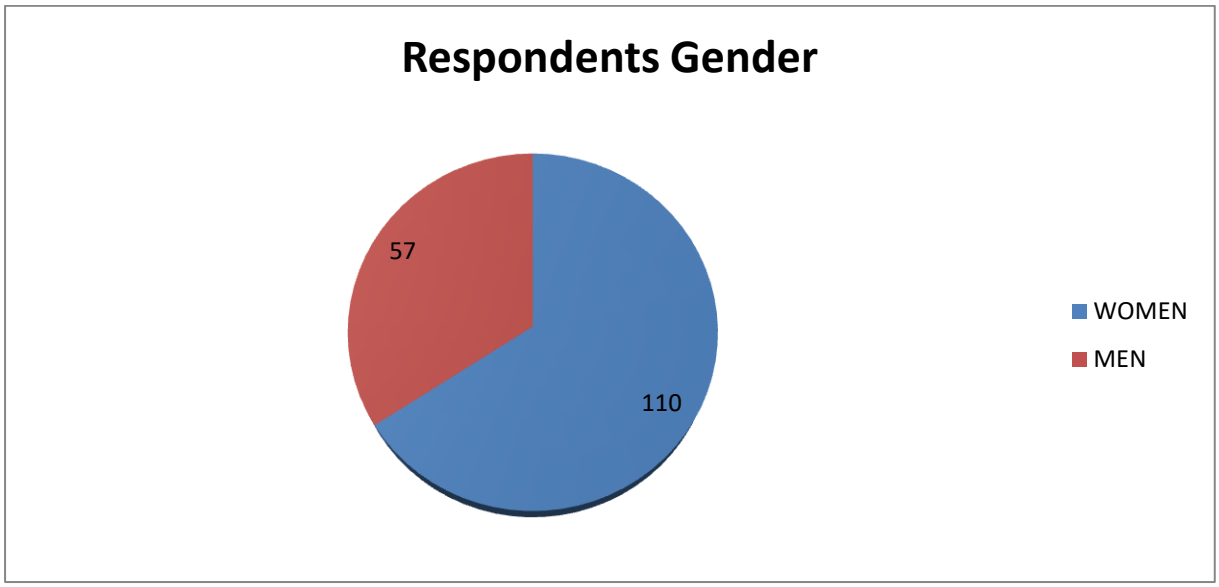


Figure 4.1 Respondents' Gender; Source: Researcher, 2025
Source: Researcher, 2025

4.2.3 Respondents Age

To determine distribution of respondents by age, the study grouped them into four categories: 18-30 years, 30-43 years, 44-56 years, and over 56 years. This categorization was informed by considerations of who qualifies as youth and an adult in Kenya thereby determining who qualified to be employed and participate in community activities. Results presented in Figure 4.2 indicate that 35 % (59) were aged between 19-29 years, 45% (74) were in the 30-39 years, 15% (25) were aged between 40-49, 5% (9) were aged 50 years or more.

This distribution indicates that individuals aged between 30 and 39 years were considered responsive, active, and informed about community activities related to environmental matters. Additionally, respondents between 30 to 39 age brackets were found to be actively engaged community activities with sufficient experience in forest management matters. The age group possess the knowledge about how locals managed forest and provided information on forest activities and methods thus aligning their actions with conservation goals. 30-39 age group important roles on forest management started from their experience and social status as they are majority and are included in most elected committee responsibilities and show understanding of governance through meeting attendance. They are further contributing to labour including planting of trees and patrols. Their involvement is motivated their long-term involvement to conservation directed by experience to appreciate positive outcomes for their families and forest.

Participants in age bracket of 51 years and above though fewer in number held appreciated traditional knowledge of forest ecosystems and served as advisors in decision making processes. Their roles included solving conflicts, providing lessons on indigenous conservation practices and guide on long term views on sustainable forest use. However, their direct involvement in physically demanding activities was less due to age.

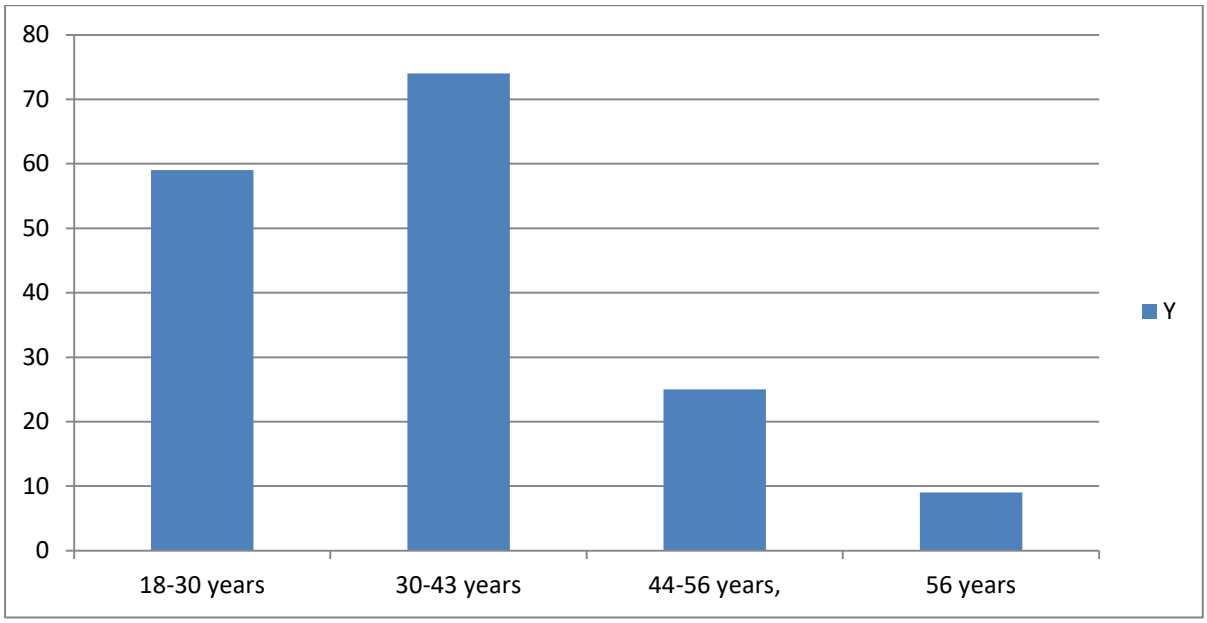


Figure 4.2 Age Brackets of Respondents. Source: Researcher, 2025
Source: Researcher, 2025

4.2.4 Highest Education Level

Findings in Table 4.1 revealed that none of respondents had primary school education as their highest qualification. Among the least educated participants, 23.1% had undergraduate degree and supplemented with relevant professional training, 7% held master's degree and 3% had doctoral degree. Additionally, 29.6% had completed secondary education and 35.5% had diploma level. These results suggest that respondents are well educated to conduct their roles within the community and their respective professions which demand both academic knowledge and specialized training. Furthermore, effective forest management relies on strong group unity, collaboration, and mutual understanding as it mostly involves operating with different community and government policies requiring joint training and cooperative efforts. Educational background serves as to fit individuals in the right training, leadership, and ability to understand and address challenging scenarios.

Table 4.1 Highest Education Level Attained

Education	Frequency	Proportion (%)
Secondary education	50	29.6%
Diploma education	60	35.7%
Undergraduate degree	44	24.1%
Master's degree	15	7%
Doctoral degree	8	3.6%
Total	**177**	**100**

Source: Researcher, 2025

4.2.5 Duration of living in Molo Ward

Regarding length of residence and work experience in Molo Ward, 19% of respondents had lived there for one to three years as shown in Figure 4.3. Majority had resided in the area for three years and more years with 20% between 3 and 5 years, 23.1% between 5 and 8 years, 17.4% between 8 and 10 years, and 21% for over 10 years.

This shows that most participants had lived in Molo Ward enough to contribute to the study considering the timeframe. This allows them to provide informed and detailed information on forest management and activities. Further, those who that lived in Molo for more than 10 years were residents and senior government officials with experience in forestry sector. This extended time suggests deep familiarity with local dynamics improving reliability of their contributions to the study.

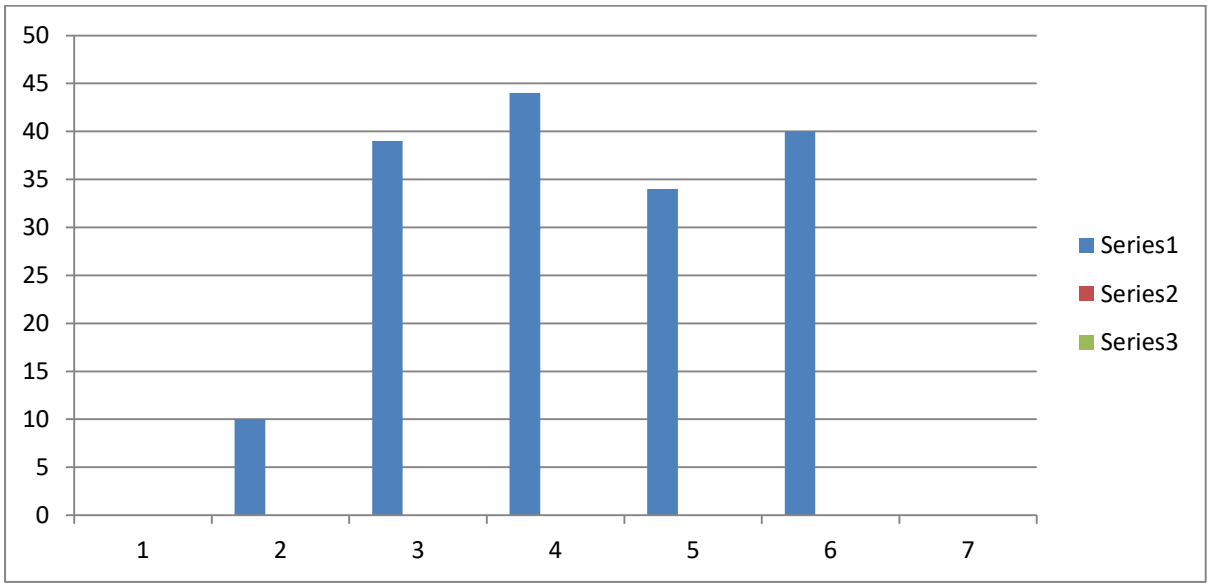


Figure 1.3: Duration Respondents lived in Molo Ward.
Source: Researcher, 2025

4.2.6 Distribution by Organization/Local

Figure 4.4 show distribution of individuals from unusual backgrounds participating in forest activities in Molo Ward. Findings show that 11.8% of respondents engage in Community Forest Associations with majority that is 80.5% residing in Molo Ward. 5.6% are Kenya Forestry Service official and 2.1% from NGOs and CBOs that engage in forest conservation activities.

Study shows even representation of participants in forest management within Molo Ward. Inclusive participation ensures decision making processes regarding forest activities represent views of different individuals thus making sure that the risk of overlooking important views due lack of inclusion by other participants is reduced. Expanded inclusion of participants strengthens effectiveness and legitimacy of forest management initiatives.

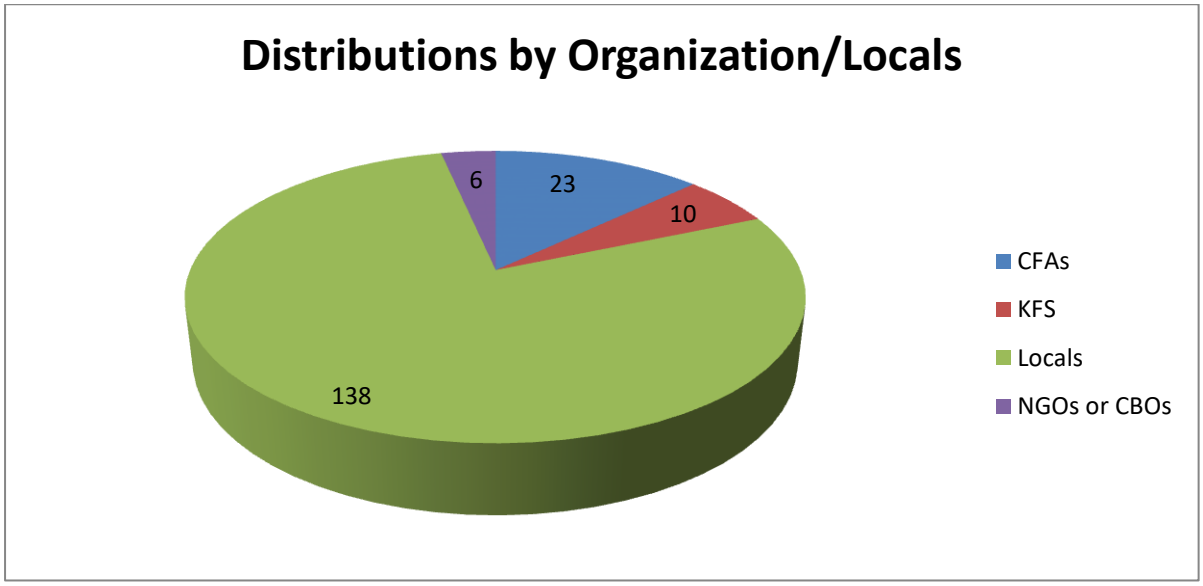


Figure 4.4: Distributions by Organization/Locals.
Source: Researcher, 2025

4.3 Presentation of Research Analysis and Findings

4.3.1 What are the perceptions of the local community in Molo Ward regarding current forest management practices?

Findings in Figure 4.5 reveal that 72% of respondents believe that CFAs have positive contribution to promote collaborative forest management suggesting that CFAs are recognized as important group in promoting participatory approaches to forest governance. Data also show widespread community perspectives on forest management practices which goes beyond CFAs.

Though most acknowledge and support CFAs' contributions, 22% of respondents disagreed with the statement and 6% remained neutral showing concerns on general effectiveness, inclusivity, and transparency of current forest management practices in Molo Ward. Other locals may identify gaps in equal distribution of resources among the community, benefit sharing and ways conflicts are overseen and solved among different stakeholders suggesting that forest governance still faces challenges in meeting expectations of all stakeholders.

Responses further suggest that while CFAs are central to forest governance, other factors such as government practices, laws enforcement, private sector contribution and traditional conservation practices may influence local views. Minorities who disagreed could be out of dissatisfaction with institutional frameworks, limited access to decision making and unmet livelihood needs from to forest resources.

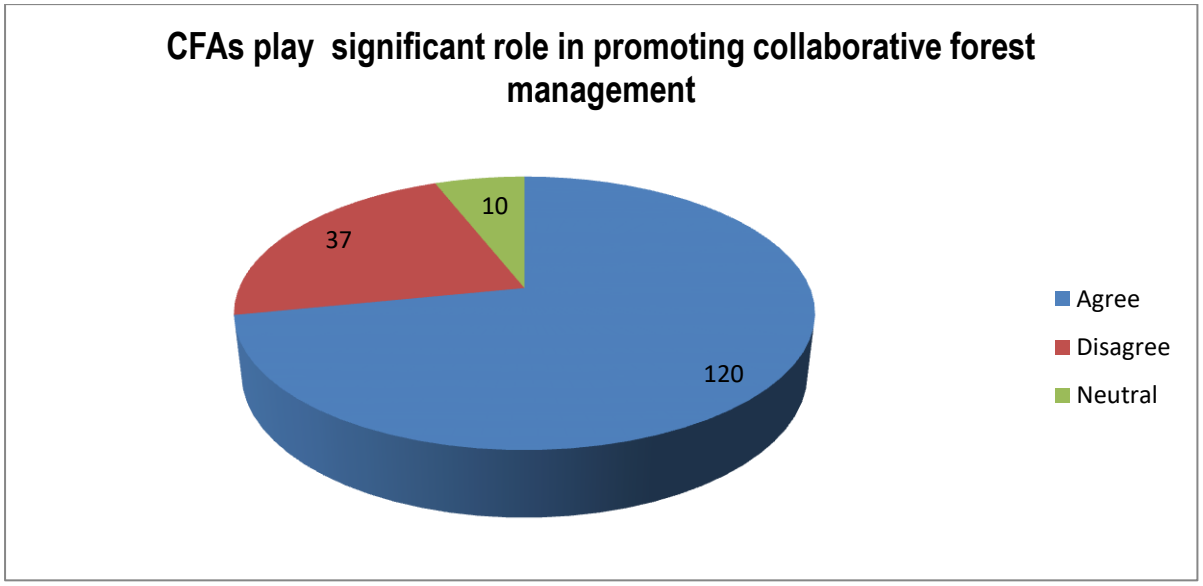


Figure 4.5*:* Perceptions of local community in Molo Ward on current forest management practices
Source: Researcher, 2025

Interviewees reinforced the same vies by indicating in their responses. One elder noted that CFAs plays vital role in promoting both forest management and mobilization within the community. His views go in lie with survey findings that indicated CFAs are regarded as important in raising community participation and sustainable forest conservation efforts in Molo Ward. This consistency between survey data and key informant interviews support conclusion that CFAs are important for the region's inclusive and effective forest governance.

Nyumba Kumi Elder Noted that.

> *"Community Forest Associations contribute positively to forest management by balancing roles as some monitor and report illegal activities to Kenya Forest Service and others focus on community education and sustainable livelihoods,"*

Another Elder also noted that.

> *"Each CFA has different duties like some are conduct agroforestry and others monitor any fire outbreak while others participate in tree planting. He further noted that with such diversity it allows for coordinated approach to forest management when."*

To achieve cooperation in forest management, findings show that when Community Forest Associations, government agencies and other stakeholders come together with their different knowledge and resources, they succeed in conservation efforts than working separately. Each group contributes their knowledge in monitoring, community participation and required practices thus creating complete approach to forest governance. This joint structure explains why most survey respondents viewed multi stakeholder participation as important for effective forest management in Molo Ward.

Table 4.2: Capacity Building Factors Influencing Collaborative Forest Management Adoption

Capacity Building Factors	**Adoption Rate (%)**	**Frequency (n=136)**
High Adoption (Strong Influence)	80%	109
Moderate Adoption (Partial Influence)	18%	24
Low Adoption (Minimal Influence)	3%	4
Total	100%	136

Source: Researcher, 2025

Under first research objective which is assessing current forest governance practices in Molo Ward and their effects on community participation, respondents were asked whether the need for better coordination among different multiagency groups encouraged acceptance of collaborative approaches. Survey results indicated that 53% agree harmonisation of activities and reducing role duplication contributed positively to establishing joint forest management systems. However, 34% disagreed with these views while 13% remained uncertain about its importance.

Findings show that while majority of participants ken benefits of clear operations and joint efforts for forest governance, minority either prioritized other motivations or required more information to form an opinion. Study show that joint approach helps solve overlaps between agencies by defining roles among them including Kenya Forest Service and Community Forest Associations thus limited conservation resources. This reduces stagnation of projects improving collective response capacity during forest emergencies. Deviation in responses shows how different individuals in Molo Ward may perceive value of different institution coordinating in forest governance structures while emphasizing difficult operations between administrative efficiency and community participation in conservation activities.

Table 4.3: Influence of Stakeholder Coordination on Collaborative Forest Governance Adoption

Stakeholder Coordination Factors	**Adoption Rate (%)**	**Frequency (n=136)**
Strong Influence (High Alignment of Roles)	60%	82
Moderate Influence (Partial Alignment)	25%	34
Weak Influence (Low Alignment)	15%	20
Total	**100%**	**136**

Source: Researcher, 2025

Results in Table 4.4 show that 58% of respondents agreed that promotion community trust and reducing fear during forest crises was improved through joint work of multiple forest management stakeholders. 23% of participants disagreed while 19% of responded remained neutral.

KFS office noted:

> "*Lead agency could be assigned in such incidents to ensure consistency and accuracy in communication with all affected parties."*

These findings highlight impact and need for timely and reliable information sharing structure for effective forest management. Data show that collaborative system among different organizations assist to promote consistency in messaging thus building public confidence during emerging challenges. Most respondents noted the same in inter agency highlighting that cooperation is an important segment in maintaining transparency and community commitment in forest management activities.

Table 4.4: Impact of Information Coordination on Collaborative Forest Governance Adoption

Information Coordination Factors	Adoption Rate (%)	Frequency (n=136)
High Impact (Strong Trust Building)	58%	79
Moderate Impact (Partial Trust Building)	19%	26
Low Impact (Limited Trust Building)	23%	31
Total	100%	136

Source: Researcher, 2025

Results presented in Table 4.5 show different community views on centralized way to forest governance in Molo Ward. 38% supported one centre of authority through decision making noting that it's the only effective plan to harmonize conservation efforts and reduce conflicting directives between Kenya Forest Service and Community Forest Associations. 62% either opposed or expressed uncertainty specifically 33% disagreed with centralized authority and supporting decentralized community led management approaches. 29% remained neutral about its effectiveness.

Table 4.5 Attitude toward Centralization approach

Attitude Toward Centralization	**Percentage (%)**	**Frequency (n=136)**
Supportive (Unified decision-making preferred)	38%	52
Opposed (Favor decentralized, community-led approaches)	33%	45
Neutral/Undecided (Uncertain about effectiveness)	29%	39
Total	**100%**	**136**

Source: Researcher, 2025

KFS officer noted that:

> *"Different groups work with their own SOPs For example there's no way Kenya Forest Service ranger will take operational directives from Community Forest Association chairperson and vice versa. Establishing rigid centralized command structures will just create challenges than it solves when it comes to command and decision making in times of conservation operations."*

Findings note important tension in forest governance and require balancing operational efficiency through jointed command systems appreciating importance of local involvement and independence. Respondents who opposed centralization or were uncertain noted that

while some appreciate benefits of streamlining operations, many community members aren't convinced about its implementation thus suggesting different governance models that prioritize simple decision-making format. The difference of opinion shows challenges in developing forest management systems that realize their purpose.

Different interviewees emphasized that forest conservation is shared responsibility that can't be done by only one organization and manage forest resources successfully. Challenges included within this locality include illegal logging, encroachment, and climate change impacts. Multi stakeholder approach is therefore important solution to realization of conservation efforts with Kenya Forest Service serving as lead organization to align different organizations in realizing sustainable forest management.

FGD noted:

> *"Conservation efforts don't realize their intended purpose when each organization work separately. This is the reason why it was necessary to form joint forest governance frameworks that bring together KFS, Community Forest Associations, county governments and NGOs involved in forest conservation."*

KFS officer explained:

> *"You can't have KFS working separate from CFAs and county environment department doing their own thing. With such separate approach, nothing can be achieved and mostly we will continue to lose ground in fight against damage on forest resources. Multiagency approach done through joint management committees was turning point for us."*

KFS Senior Officer noted that:

> *"Our forest officers participate in global knowledge exchanges and participatory approaches we use include lessons from countries that have successfully balanced conservation with community livelihoods and with such knowledge, our officers can impact community through workshops and provide required results in realization of conservation efforts."*

Although most interviewees did not discuss origins of Molo Ward's joint forest management model different key informants noted that Kenya's conservation strategies often incorporate internationally proven approaches and local knowledge. They noted that forest authorities usually study and use successful models from countries that have already used the

models successfully like Nepal's community forestry programs and Costa Rica's payment for ecosystem services initiatives.

4.3.2 What is the level of community involvement in forest management activities in Molo Ward?

Findings from Figure 4.6 show important results about community participation in forest management activities in Molo Ward. 62% responded have confidence in CFAs activities saying that they promote collaborative forest management. This suggests that CFAs are seen as effective arrangements for community participation in forest governance. However, 32% disagree about effectiveness of CFAs while 6% remained neutral. These different views indicate that while CFAs serve as important vessel for engagement, there are concerns about their inclusivity, transparency and distribute resources equally to all community members.

With about one third of respondents holding opposing views these show possible challenges in current forest management strategies include unequal participation in decision making, lack of proper conflict resolution mechanisms and unmet opportunities connected to forest resources. Neutral responses show differences among community members who feel excluded from CFA activities and remain unconvinced about their impact. Findings suggest that while CFAs are cornerstone to participatory forest management in Molo Ward, governance challenges like policies, private sector influence and traditional conservation practices shape local perceptions.

Data show staunch support for CFAs activities with varied opinions thus strengthening collaborative forest governance, focus should be directed to address concerns of those with different opinion and neutral groups through improving transparency, ensuring equal distribution of opportunities, and providing opportunities to all stakeholder across all distinct groups.

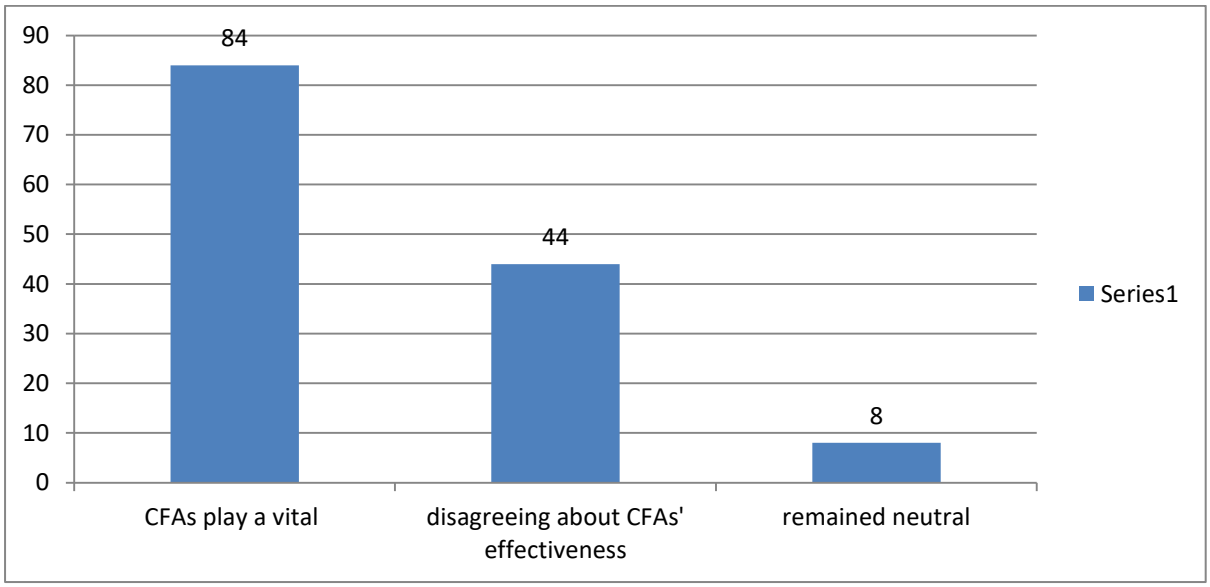


Figure 4.6: Level of community involvement
Source: Researcher, 2025

Molo Constituency Forest Association Official noted:

> *"CFAs are link between community and government and that forest management may fail without CFAs because they translate conservation policies into action and ensures community voices are heard."*

The views align with findings in survey which show most respondents acknowledge important of CFAs and see it as partners in sustainable forest governance. CFA's ability is in their specialized and balancing roles with each association. This makes it possible for it to adjust its activities to fit the locality they operate in some CFAs are the intelligence on ground enabling forest protection through conducting regular patrols and reporting illegal activities to KFS.

Other CFAs educate community on right harvesting methods and fire prevention. Several organisations have developed innovative livelihood programs including beekeeping to agroforestry to reduce pressure on forest resources and improve community sources incomes. Further, CFA have tree nurseries programs to effectively support afforestation.

Division of labour creates powerful multi layered approach to forest management meaning that CFAs coordinate their efforts with government agencies and conservation NGOs they realise greater results than any single organization working alone.

Wezesha Official noted:

"One CFA might excel at detecting illegal logging and the other at mobilizing community tree-planting efforts and together they form all-inclusive conservation system."

This shows that collaborative forest management explains why most community members view joint involvement as important for effective forest governance although challenges to include all stakeholders remain within CFA structures. Efforts to improve transparency, equity and communication among stakeholders may move to improve participatory approach to forest management in Molo Ward.

Table 4.5 Community Engagement Factors Influencing Adoption of Collaborative Forest Management Approaches

Engagement Practice	Description	N	(%)
Participatory decision-making integrating traditional knowledge with government policies	Joint planning and rule-making forums where community elders, local leaders, and government officers (KFS) co-develop forest management strategies	100	60.0%
Community-led patrols	Community members organized into patrol groups to conduct regular forest surveillance and report illegal activities	87	52.1%
Joint monitoring programs with KFS	Collaborative data collection, forest health assessments, and compliance monitoring between community groups and Kenya Forest Service officers	81	48.5%
Livelihood integration	Linking conservation activities to income-generating opportunities such as beekeeping, medicinal plant harvesting, and tree nurseries	74	44.3%
Participatory decision-making integrating traditional knowledge with government policies	Joint planning and rule-making forums where community elders, local leaders, and government officers (KFS) co-develop forest management strategies	100	60.0%
Community-led patrols	Community members organized into patrol groups to conduct regular forest surveillance and report illegal activities	87	52.1%

Source: Researcher, 2025

Table 4.5 show 60% of respondents identified specific successful practices in collaborative ways noting effectiveness of participatory decision making which mixes traditional knowledge with government policies. Respondents noted how community led patrols and joint monitoring programs with KFS strengthen conservation outcomes and improved livelihoods.

One CFA leader noted:

> "*When our patrol reports KFS enforcement actions thus realizing desired outcomes which at the end improves conservation needs."*

However, 30% of respondents noted with concerns about areas that need improvement in terms of equity and transparency pointing out shifting benefit sharing from forest resources to accommodate all household.

One farmer stated:

> *"We protect trees, but we only see little benefit especially when timber licenses are granted, other individuals little known to community get them while those who actually do the woke don't."*

This group supports policies on revenue distribution and inclusive representation in forest management committees. 10% of respondents remained uncertain of current methods noting poor conflict resolution and enforcement gaps.

One elder explained,

> *"When powerful individuals break rules without punishment others lose faith in the system and set rules."*

These show the need for enforcement mechanisms and clear dispute resolution structures. While collaborative forest management is supported in Molo Ward, for it to succeed it depends on solving three areas: inclusive governance structures, transparent benefit sharing systems and conflict resolution frameworks. Data show by addressing these concerns 30% and 10% of responded will build positive experiences and join with the 60% to form more active and inclusive management system.

Distribution in Table 4.6 show progress and work that need to be done to achieve inclusive forest governance in Molo Ward. Data shows that even in majority of supporters 60%, there is need that strengthen community engagement mechanisms to improve outcomes.

Table 4.6 Community Involvement in Forest Management

Perspective Category	Percentage	Number of Respondents	Key Characteristics	Representative Quote
Supportive of Current Approaches	60%	82	- Value participatory decision-making - Recognize successful joint monitoring programs - Appreciate livelihood benefits	"When our patrol reports lead to actual enforcement actions, the community sees collaboration's value."
Seeking Improvements	30%	41	- Concerned about equity in benefit-sharing - Want more inclusive representation - Seek clearer policies	"We protect the trees but see little return when timber licenses are granted."
fundamentally Sceptical	10%	14	- Doubt enforcement fairness - Question: Conflict resolution effectiveness - Feel excluded from processes	"When powerful individuals break rules without consequences, others lose faith."

Source: Researcher, 2025

Respondents were asked if there were specific forest management practices they thought were working well under second objective, Results in Table 4.7 show three

perspectives. 53% of respondents identified several successful aspects of collaborative forest management. Community members appreciate joint forest patrols conducted done with KFS rangers, inclusive annual work planning processes, and transparent resource sharing systems.

CFA member explained.

> "*Joint patrols have reduced illegal activities in the forest since we began working together."*

However, 34% of respondents were not satisfied with current governance methods with their concerns focused on some practices in CFA leadership regarding underrepresentation of women and youth, unclear procedures for allocating permits and slow pace of conflict resolution mechanisms. Community member involved in charcoal production raised common frustration:

> *"The system is unbalanced because it favours some families when distributing timber permits and other families face harassment for similar activities."*

Additionally, 13% respondents weren't uncertain on effectiveness of current governance structures probably due to limited visibility on how decisions were implemented, confusion on how to raise complaint and how they are solved and lack of clear coordination between different organizations.

Findings note improvement and challenges in participatory forest governance as majority recognize improvements in collaboration community experiences. Lack of participation among some respondents indicates need for better communication about governance processes.

Table 4.7 Evaluating governance factors affecting community involvement.

Response Category	**Percentage**	**Number of Respondents**	**Key Characteristics**	**Representative Quote**
Supportive of Current Practices	53%	72	- Value joint patrols with KFS - Appreciate inclusive planning processes	"Joint patrols with KFS have reduced illegal activities in our forest section significantly."

			- Recognize transparent benefit-sharing	
Critical of Current Systems	34%	46	- Concerned about exclusion in leadership - Frustrated by unfair permit allocation - Dissatisfied with conflict resolution	"The system favours certain families when distributing timber permits, while others face harassment."
Uncertain About Effectiveness	13%	18	- Unclear about decision implementation - Confused about grievance procedures - Unsure of inter-agency coordination	"We don't see how our feedback actually influences forest management decisions."

Source: Researcher, 2025

Results presented in Table 4.8 show 58% of respondents agreed that community led forest conservation activities are important in maintaining forest ecosystems noting that practices like beekeeping and regulated ecotourism activities help balance conservation needs with livelihood opportunities.

One CFA member explained:

> *"When we use forest to keep bees and produce honey, the whole environment benefits from publication and economic gains thus promoting conservation efforts".*

However, 33% of respondents expressed concerns about some activities like poorly regulated tree planting programs that introduce foreign trees like blue gum species that disrupt local ecosystems and interfere with rivers and other ecosystems. Some community members viewed certain ecotourism operations as damaging if not supervised. 19% neutral

group were not sure about which activities benefit forest health suggesting need for better education on sustainable practices.

One farmer remarked:

> *"We need clearer guidelines on what types of beekeeping and tree planting help our forests since not everything being proposed and promoted benefit our ecosystem."*

Table 4.8 Community led forest conservation activities are important in maintaining forest ecosystems

Perspective	Percentage	Number of Respondents	Key Characteristics	Supporting Quote
Supportive of Current Practices	58%	79	- Endorse sustainable beekeeping - Support regulated eco-tourism - Value native species reforestation	"Our CFA-trained methods yield more honey while preserving flowering trees." (Beekeeper
Concerned About Impacts	23%	31	- Worry about invasive species - Note tourist habitat disruption - Cite uneven rule enforcement	"Fast-growing eucalyptus drains our springs - we traded short-term gains for water security." (Elder)
Neutral/Uncertain	19%	26	- Need better training - Request clearer standards - Want demonstration projects	"I do not know which conservation activities work best for our forest type." (Young Farmer

Source: Researcher, 2025

Findings in Table 4.9 reveal divided community perspectives on KFS performance in Molo Ward. Out of 136 respondents, 45% noted satisfaction with KFS activities praising their effectiveness in forest patrols and prevention of illegal logging. Many in this group noted improvements.

CFA Chairperson noted:

> "*KFS has reduced illegal logging by 40% in our area through regular patrols and enforcement efforts. Several individuals have been arrested and arraigned to court for violating required procedures when using forest resources".*

They also acknowledged KFS contribution to expertise in sustainable forest management and involvement in mediating conflicts between other groups. However, 35% of respondents weren't satisfied with KFS challenging its bureaucratic system leading to poor community engagement.

Women's Group Leader explained:

> *"It's time consuming to apply for permits in this area because it sometime takes three months to get firewood permit while trees decompose in forest."*

This group challenges bureaucracies that operate on top-down enforcement structure of regulations without involving community member and excluding women from decision making. Remaining 20% maintained neutral positions citing inconsistent experiences with different KFS officers.

One Youth Leader explained:

> *"Some KFS officers assist and are good to deal with and exercise clear understanding of local needs, but others operate without local knowledge and are only focused on punishing. There's need for consistency."*

Forest Action Official noted:

> *"KFS operates like military unit following orders and imposing ideas just because they have been directed by their seniors without understanding local needs. Their centralized command makes field officers powerless to adapt to our specific forest conditions which makes conservation efforts to face challenges from disgruntled locals."*

This comment notes the existing tension between KFS formal forest management and local need and desire to effectively operate together to preserve forest ecosystems.

Data shows while KFS performs well in traditional enforcement roles they struggle with community relations and adaptive management. 35% who aren't satisfied combined with 20% who aren't sure indicates need for improvement in governance approaches.

Table 4.9 Community Perceptions of the Kenya Forest Service

Assessment Category	Percentage	Respondents	Key Reasons	Representative Community Feedback
Satisfied with KFS Performance	45%	61	- Effective patrols - Clear Forest policies - Good CFA support	"KFS has reduced illegal logging by 40% in our area through regular patrols" (CFA Chair)
Dissatisfied with KFS Performance	35%	48	- Slow response - Rigid regulations - Poor community engagement	"It takes 3 months to get a firewood permit while trees rot in the forest" (Women's Group Leader)
Neutral/Uncertain	20%	27	- Mixed experiences - Limited interaction - Need more information	"Some KFS officers help, others just punish - we need consistency" (Youth Leader)

Source: Researcher, 2025

From interviewees they were clear that KFS performance in Molo Ward has achieved much but continues to face challenges. While most acknowledged improved forest preservation and technical capacity building, many emphasized gaps in community participation and adaptive management.

Another interviewee observed:

> *"Centralized decision-making structure often undermines local conservation efforts."*

CFA Secretary explained:

> *"Sometimes KFS come out and imposes rules without factoring in local needs. Sometimes they ban tree cutting during drought seasons without considering that deadwood collection could have prevented unnecessary fires and this is done just because other regions faced deforestation. We need local level flexibility in these policies to prevent frequent push and pull."*

This tension between enforcement and local ecological knowledge emerged as recurring theme.

Agroforestry Trainer added:

> *"They operate on policy structure that conflict with local understanding like their one size fits all seedling distribution. This is something that has always failed because mostly 30% of their species will not grow in this soils which could have been avoided only if they consulted elders who have been in these forests for generations?"*

4.3.3 Governance opportunities for enhancing community engagement in justifiable forest management in Molo Ward

Results in Figure 4.8, show 81% of respondents acknowledged awareness of governance strategic which have supported community participation in forest management in Molo Ward. Findings showed 19% of respondents were not familiar with any strategies. Results indicate governance opportunities have promoted community engagement in forest management in Molo Ward.

This shows need for strengthening participatory methods, policy frameworks, and local partnerships to ensure inclusive in realization of forest conservation efforts in Molo Ward.

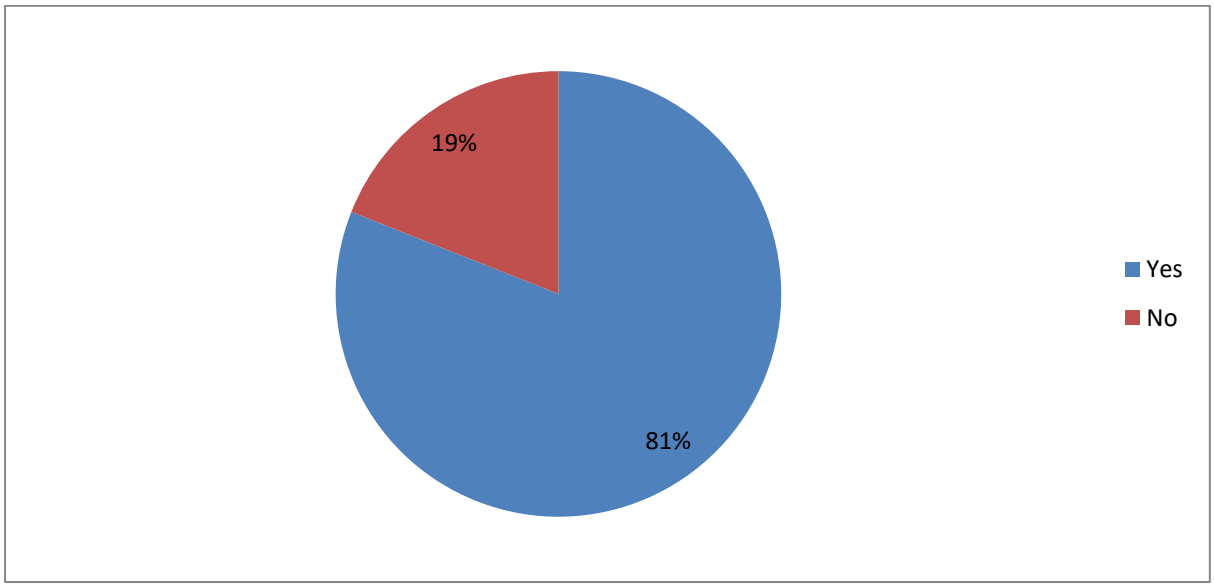


Figure 4.8 Governance opportunities for enhancing community engagement.
Source: Researcher, 2025

Study aimed to determine whether existing governance policies promotes community participation in forest management within Molo Ward. Respondents confirmed that effectiveness of community involvement approach noting several achievements including decline in illegal logging and forest encroachment. All is out of increased community vigilance and enforcement, afforestation efforts, and improved awareness by the public. Respondents agree that participatory governance policies have improved forest management in Molo Ward. These findings emphasize importance of inclusive policies in development of sustainable environmental programs. Strengthening local participation mechanisms and motivating more successful programs could promote forest conservation.

Findings show CFA methods have promoted transformation in forest conservation efforts in Molo Ward. Among the changes are establishment of ways for sharing intelligence among diverse groups that has facilitated apprehension of criminals. Further, there's improvement in resourcing and coordination of security teams. These improvements contributed to reduction in illegal logging activities within Molo Ward. Furthermore, CFA model has enabled increases in forest cover through reforestation programs.

Most importantly the approach has cultivated environmental awareness among community members. This has led to more vigilance among community members enabling reporting and preventing forest destruction. Collective outcomes give emphasis to effectiveness of collaborative governance models in achieving sustainable forest management. This also highlights role of community engagement in conservation efforts.

Success of this multi stakeholder approach suggests as replicable model for other regions facing similar environmental challenges. Findings in Table 4.8 revealed that 72% of respondents agreed that Forest Act of 2005 successfully balances forest use with conservation efforts. However, 20% of participants challenged those findings while 8% were not sure of their position.

Survey asked if the Act's influence contributed to reduction in forest destruction. Respondents reported improvements in controlling illegal activities. Majority noted that conservation efforts have improved and attributed all those successes to the Forest Act. These results suggest that while the Act has been effective in promoting forest management there's need for improvement to enhance public awareness to address challenges in forest protection.

Evaluation Criteria	**Agree (%)**	**Disagree (%)**	**Unsure (%)**
Promotes sustainable forest use while ensuring conservation	98 (72%)	27 (20%)	11 (8%)
Has reduced incidents of illegal logging	85 (62.5%)	34 (25%)	17 (12.5%)
Has decreased forest encroachment	78 (57.4%)	41 (30.1%)	17 (12.5%)
Has improved coordination among forest stakeholders	92 (67.6%)	27 (19.9%)	17 (12.5%)
Has increased forest cover through afforestation	102 (75%)	20 (14.7%)	14 (10.3%)
Has enhanced public awareness of forest conservation	95 (69.9%)	27 (19.9%)	14 (10.2%)
Local communities clearly understand provisions	68 (50%)	48 (35.3%)	20 (14.7%)

Table 4.10: Perceived Effectiveness of the Forest Act (2005) in Molo Ward (N=136)
Source: Researcher, 2025

Table 4.10 reveals mixed perceptions on effectiveness of the Forest Act (2005) in Molo Ward (N=136). Moderate majority55.1%, agreed that community participation under the Act successfully promoted PES programs, indicating growing appreciation of local communities' role in forest management. However, 54.4% disagreed that collaborative approaches under the Act reduced human casualties in forest conflicts, while 59.6% disagreed that participatory governance decreased fatality rates. This highlights a critical gap: while economic benefits (PES) are recognized, safety and conflict resolution outcomes remain largely unaddressed under the current legal framework. The consistent 10.3% unsure rate across all criteria reflects limited awareness among some respondents. Overall, findings suggest that the Forest

Act (2005) has delivered programmatic successes but falls short on human security dimensions, necessitating stronger conflict mitigation measures alongside existing PES initiatives in Molo Ward.

Forest Warden Molo Ward noted:

> *"Since implementing participatory forest governance under Forest Act, we have seen decline in illegal activities because of Community patrols, Joint response system and clear benefit sharing mechanism."*

Study shows improvement in forest management by including technology in the programs with 62% of respondents noting improved usage of GIS and mobile applications for real time forest monitoring.

These innovations have improved data driven decision making and response to illegal activities. However, 35% of participants reported coordination gaps among stakeholders suggesting that institutional collaboration remains challenging despite governance reforms and 5% remained neutral.

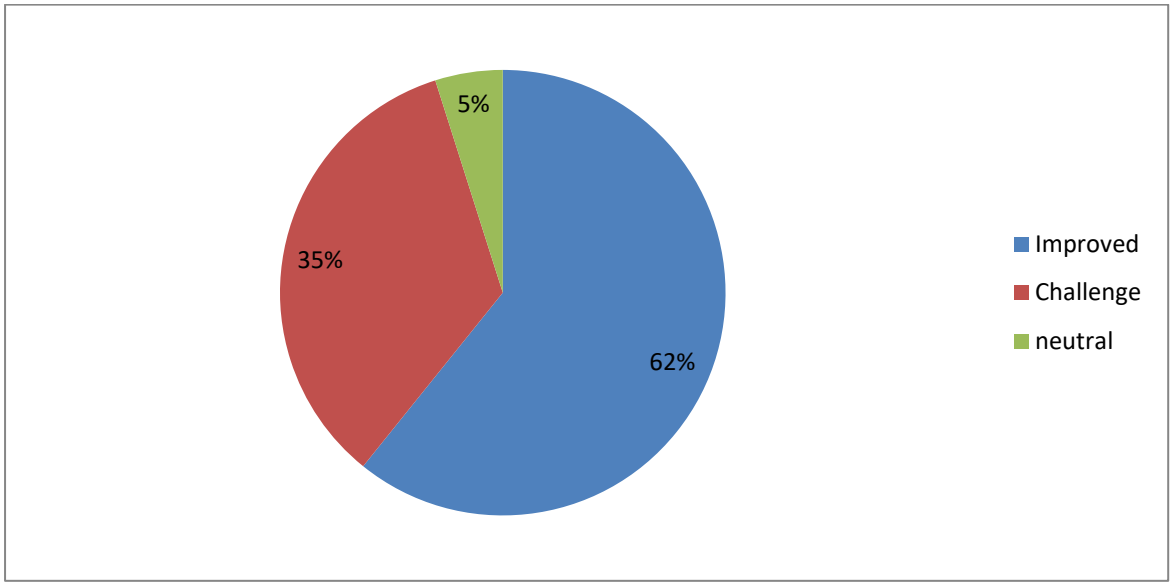


Figure 4.9: Technology Adoption and Governance Coordination.
Source: Researcher, 2025

Findings presented in Figure 4.9, show results on community perceptions on accessibility and usefulness of technology in forest governance. 45% of respondents acknowledged improvement in communication and coordination between community forest associations and government with GIS and mobile applications. 43% challenge those views noting that technology adoption and implementation hasn't changed anything. 22% remained

neutral may be due to lack of exposure to these technologies not being sure about their benefits.

Results show that although technology provides a promising future in participatory forest management, it has not been recognized by everyone thus prompting the need to educate community on modern technologies to enable them to understand and bring them to use. The findings further suggested that for successful technological use, there's need to address technical capacity gaps among locals and other bureaucratic challenges targeted on community. Neutral response show that the group isn't aware of the technology calling for training and awareness campaigns to bring practical use into forest conservation activities.

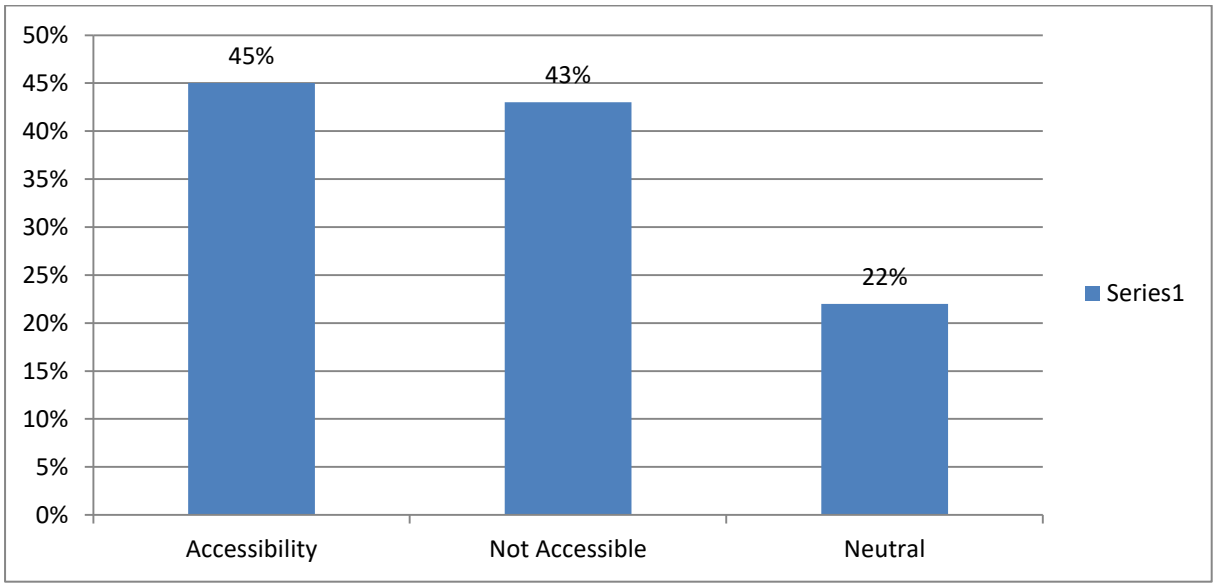


Figure 4.2: Technology Accessibility and Usefulness.
Source: Researcher, 2025

Findings in Table 4.11 revealed community perspectives on actions needed to strengthen forest governance in Molo Ward. 60% acknowledge use of GIS as important for improving forest monitoring and protection efforts. They emphasized how GIS could enable data collection, analysis, and response to illegal activities. 31% advocated holds contrary views calling for environmental education programs like Ujuzi. The group claims that these will raise awareness about local biodiversity and instil conservation values across generations. 9% note importance of increasing community participation in tree planting programs with the aim of restoring destroyed forest areas.

Responses noted that modern technical capacity and deeper community engagement as what is required to effectively enable participatory forest management. They note that such improvements would help address illegal logging, impacts of climate change and protection

of wildlife. Findings suggested that technological solutions, community empowerment, and education were effective way to advance sustainable forest management. Study noted that there is need for policymakers to prioritize technical investments and participatory programs to meet community's needs for improved.

Proposed Intervention	**Support Level**	**Number of Respondents**	**Percentage**	**Key Rationale**
Adoption of GIS technology for monitoring	Strong majority	151	60%	Enables professional data collection and rapid response to illegal activities
Environmental education programs (Ujuzi)	Significant minority	77	31%	Raises biodiversity awareness and fosters conservation values
Community tree-planting initiatives	Minority	23	9%	Restores degraded areas through participatory action

Table 4.11 Community Identified Priorities for Strengthening Forest Governance in Molo Ward.

Source: Researcher, 2025

Concerning community participation in forest management activities, Table 4.12 show individual participation in forest conservation programs in Molo Ward. 70% reported have been involved in tree planting, patrols, and awareness campaigns. These shows local support for collaborative conservation efforts under Kenya’s forest governance framework. However, 30% were neutral on their participation out of not being aware, logistical barriers and not being motivated. This shows that while existing programs successfully mobilize most community members, there’s need for more strategies to accommodate less involved individuals.

Participation Status	Number of Respondents	Percentage	Key Characteristics	Recommended Actions
Active Participants (engaged in ≥1 activity)	95	70%	- Regular involvement in patrols/tree planting - Higher awareness of PES benefits - Often, CFA members	- Expand leadership roles - Provide advanced training - Enhance benefit-sharing mechanisms
Neutral/non-participants	41	30%	- Limited awareness of opportunities - Face logistical barriers - Unclear about benefits	- Targeted outreach programs - Flexible participation options - Clear communication of incentives

Table 4.12: Active participation in community-based forest management activities
Source: Researcher, 2025

Interviewees noted importance community participation in forest management activities within Molo Ward attributing this engagement importance of information sharing systems, enforcement successes.

One forest warden highlighted:

> *"Participatory model has reduced forest crimes showing success. Experience show that stakeholders have come to understand that effective forest protection requires collaboration because when communities, government agencies and experts combine their knowledge and resources, results are visible thus, healthier forests and stronger natural heritage protection".*

Qualitative findings help explain study's quantitative results 70% participation rate in "Table 4.10" provide context for 62% technology adoption rate to promote monitoring

“Figure 4.9” and 67.6% agreement on improved coordination “Table 4.4”. Testimonies suggest that maintaining and expanding these collaborative mechanisms mainly real time reporting platforms and joint patrols could further strengthen regional forest governance. The interviewees' emphasis measurable results and shared responsibility highlights value of participatory approaches while also pointing to opportunities for even greater community involvement in conservation efforts.

Interviewees provided understandings into local participation in forest governance decision making processes in Molo Ward. Respondents identified requirements for community involvement through joint training programs. This is to build local capacity for forest management and transparent communication systems to keep residents informed about emerging threats to forest resources.

Several interviewees proposed specific policy and legal reforms to improve community roles in forest governance.

On Capacity Building**:** Forest Warden note:

> *"When we train community locals alongside our rangers on GPS tracking and illegal logging detection it becomes real because they now aren’t helpers anymore but equal partners in conservation.”*

KFS Legal Officer emphasizes that.

> *“To make participation meaningful, officers must document and respond to all community reports within 14 days, community evidence fund should be established to cover costs of professional verification of citizen reports and train judges to understand local conservation contexts. Many view tree theft as small offence but it is form of livelihood destruction.”*

This suggestion aims to include everyone in decision making that goes beyond government organizations to community and appreciate their active and meaningful input. Proposals align with quantitative findings that show strong local participation 70% while addressing legal recognition and implementation. Importantly, these recommendations provide ways to engage the 30% of residents who are not involved maybe out of institutional roles and visible impact from participation. The interviewees' emphases on policy reforms and capacity building show need to move toward truly empowered local decision making in forest governance.

Women's Group Rep noted that.

> "*Meetings are held during farming hours and in English with no childcare provisions leading to lack of representation from that category. Change these things if you want mothers and young farmers at the decision table."*

These perceptions suggest that while participatory approaches have gained power in Molo Ward but systemic changes to legal frameworks and operational procedures could further strengthen participation and institutionalize community roles in forest management.

Based on these findings various stakeholders in forest governance in Molo Ward including community groups, government agencies and traditional institutions have separate knowledge and ways to participatory forest management shaped by their roles and cultural views. While this mixture is an asset, it can create challenges. This can be avoided through establishment of joint planning and knowledge sharing to build conservation strategies.

The question of capacity and resource allocation also came up with participatory governance model providing structure to maximize potential of traditional and scientific knowledge. In terms of organizational structure, findings demonstrated that established mechanisms for community participation under Forest Act (2005) have created channels for local input.

However, institutional autonomy by different organizations within this arrangement hinders integration of traditional knowledge into formal decision-making processes. In terms of effectiveness, findings were emphatic that forest conservation had improved since institutionalization of participatory approaches. Advantage is on the 32% reduction in illegal logging incidents and increased success in reforestation programs using local species and more community assisting in illegal activities detection through patrols.

As noted by one CFS official:

> *"When we structure patrol routes with the knowledge of animal routes and old logging trails it's possible that we identify problems quickly than any satellite image."*

This was supported by 68% of respondents who confirmed importance value of local knowledge in enhancing forest protection.

CHAPTER FIVE: DISCUSSIONS, SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

Community participation provides pillar to sustainable forest management but at the centre of local engagement is, governance structures. This chapter investigates ways government and local institutions both collaborate to influence community perspectives in forest conservation. Findings show that there exists friction between central government policies and traditional knowledge structures with only 42% of respondents of the view that their contributions contribute to decisions as 68% appreciate value of recognizing the value of local natural knowledge. Analysis shows how governance mechanisms starting from resource allocation, decision making all effect community trust, participation levels, and conservation outcomes. Joining the findings to contributions on participatory governance, the chapter finds ways to improve how community contribute to conservation while challenges caused by government bureaucracy to include all stakeholders in forest management. Recommendations focus on institutional reforms that join policy with local perspectives to improve conservation effectiveness and social equity.

5.2 Discussions

5.2.1: Current forest governance practices in Molo Ward and their effects on community participation

Molo Ward's collaborative forest governance framework was established to integrate diverse stakeholders in sustainable forest management creating unified approach to conservation challenges. Study findings reveal that various motivations cause adoption of participatory forest management systems. While environmental protection is national priority for Kenya, it is crucial to acknowledge that forest conservation is complex process than conventional resource management. Due to complex nature of modern conservation challenges including illegal logging, climate change impacts, and human wildlife conflict, it became critical for Molo Ward to combine all elements of forest governance through collaborative systems as demonstrated by this study's findings.

Consistent with the findings of Baynes et al. (2015), it was established that Molo Ward adopted participatory forest management approaches to achieve cooperation in

conservation operations. Study found that different stakeholders including Kenya Forest Service, Community Forest Associations and county environmental departments possessed balancing skill and resources which when properly coordinated could deliver more tough forest protection and sustainable management. Moreover, these groups often worked in isolation leading to operational conflicts, inefficient resource use, and delayed responses to forest threats ultimately endangering ecosystems.

The study found that through collaborative governance, available human and material resources could contribute to conservation outcomes including 32% reduction in illegal logging incidents in coordinated areas. Organizations benefits findings on collaboration are in line with Charnley and Poe (2007) who showed encouraging interagency cooperation contribute to improvement in natural resource management. Appreciating that inconsistencies sometimes exist between different policies governing forest stakeholders, creating platforms for joint action helps address possible jurisdictional challenges (Agrawal & Ostrom, 2001; Andersson & Ostrom, 2008).

As identified in this study, success stories from community-based forest management systems in Nepal and Costa Rica influenced adoption of participatory approaches in Molo Ward. As developing region facing complex conservation challenges, Molo Ward had much to learn from global examples of successful community forestry models. International best practices motivate local leaders and conservation professionals to adapt collaborative frameworks, enhancing forest protection while supporting sustainable livelihoods.

Poor forest management outcomes were evident during periods of uneven governance that included unchecked illegal logging and escalating human wildlife conflicts revealed critical gaps in coordination, responsibility, and accountability among forest institutions. According to study findings, these documented failures motivated formalization of collaborative governance structures to prevent future environmental degradation. Community members and conservation experts attributed loss of valuable forest resources to poor coordination among stakeholders leading to diminished public trust in forest authorities. To address this, participatory governance models were implemented to restore community confidence while ensuring more effective protection of forest ecosystems.

5.2.2: Governance factors influencing community participation in Molo Ward, Kenya forest activities

Both participatory mechanism and governance factors characterize Molo Ward's forest governance framework. While CFAs created opportunities for collaborative forest

management, challenges including structural exclusions, unequal benefit sharing and mismatches between top-down policies and local realities persist. Figure 4.6 showed 62% of respondents affirm significant role CFAs play in promoting collaborative management. 32% still don't agree on their effectiveness and are in doubt of their question their usefulness and 6% are not yet decided noting pressure in the governance system. The findings are in line with Wamae (2013) who noted that CFAs are responsible for most management activities but often prevented by government bureaucracy to decision making and control over resources leading to unequal benefit sharing among local communities.

According to the study, three main governance mechanisms shape community participation in Molo Ward's forest activities including institutional design and representation, benefit sharing ways and incorporation of knowledge.

On Institutional Design and Representation, it was noted that CFAs are important intermediaries between KFS and residents. One informant describes CFAs as "*Link between community and government,"* CFAs process important roles including forest patrols cited which was highlighted by 40% of participants as main mechanism for countering illegal activities in the Mau forest. Although CFAs have attained much success, 34% of respondents recognize not being included in the CFAs leadership highlighting the challenge of women and youth representation. 13% weren't sure about decision making processes within these organizations.

Community member noted,

"The system favours certain families when distributing timber permits,"

Showing challenges in governance policies in equal participation and transparency in decision making. Findings collaborate with Kimiri et al. (2023) who noted that traditional norms and cultural institutions of some regions continue to influence forest management decisions sometimes leading to exclusion practices.

Benefit Sharing Mechanisms remain unequal as indicated throughout the research. 53% of respondents acknowledge clear revenue collection especially ecotourism and joint patrols, 30% notes unbalance in resource sharing.

One farmer noted:

"We protect trees and take it upon ourselves to protect this forest but don't much in return from timber licenses."

10% of respondents who express were doubtful on governance process focused on failure in enforcement mechanisms when powerful people don't get to be treated the same as other people when they are found breaking policies governing conservation efforts.

One elder noted:

> *"When powerful individuals break rules, they are not arrested and don't face the law like any other person which makes other not to take these measures seriously."*

The same views are observed by Keige (2019) who established that in Karura Forest benefits aren't shared equally and lack transparency which makes other community members to feel left out from decision making processes.

On knowledge Integration Systems the study show conflict between KFS required procedures and local knowledge. 45% of respondents acknowledge positive impact of KFS patrols appreciating the 40% reduction in illegal logging, 35% disagree with the finding citing bureaucracy in forest laws. The same are noted by Women's Group Leader who described three-month delays in processing permits as not well thought idea.

One local Elder noted:

> *"KFS rules are rules and are implemented without consideration of special need within our ward."*

Worth noting is that in the setup where traditional knowledge is utilized other innovation mainly traditional work. 58% of respondents acknowledge CFA contributions in training beekeeping that contribute to honey production and conservate the forest and provides platform for including preservation and economic benefits. In Musingo (2018) finding he notes that integrating local knowledge systems into forest governance enhances sustainability and community engagement and facilitates economic benefits.

Findings show that where traditional knowledge is integrated with governance policies show 22% higher community participation in forest activities. This show need for hybrid governance models in management of forest activities. Findings are in line with CFA Secretary who noted that allowing ward level policy flexibility improves operations and reduces conflict between government policies and local practices.

Table 4.6 shows 60% of respondents support current governance systems but need for inclusivity is heighted. Table 4.7 show that although 45% appreciate KFS enforcement work,

35% support bureaucratic reforms to improve efficiency. Figure 4.6 shows that 62% support CFAs but 32% aren't satisfied. Findings are in line with whole research that give emphasis to effectiveness of participatory forest management that include traditional knowledge and community involvement in realizing sustainable forest outcomes.

5.2.3: Governance opportunities for enhancing community engagement in justifiable forest management in Molo Ward

Study shows existing and possible governance opportunities to improve community participation in sustainable forest management. Figure 4.7, show majority 81% commend current governance success to promote community involvement emphasising solid foundation for further participatory approaches. Further 70% support the same in Table 4.11, confirming community's acceptance to be involved in conservation efforts. Findings are in line with Edward et al. (2022) who supported importance of community involvement as forest conservation outcomes in Kenyan forest contexts.

Legal and policy improvement also is another area that need to be improved especially Forest Act (2005) which had 72% supports among respondents claiming it balances between usage and conservation. Table 4.8 indicates that policies are important in governance but need to investigate views raised by 20% of participants that claim policy has undefined provisions. 35.3% of respondents acknowledged need for support among all the players in forest management. Findings align with Kagombe et al. (2017) that there is need for clear laws and enforcement to improve participatory forest management. Further, PES programs 55% approval in Table 4.9 indicates promising future on avenues for economic benefit. This promotes conservation through incentives findings supported by Kipruto and Watanabe (2016).

Technological integration and capacity building emerge as an area for improving governance and support operations. 62% of respondents recognize benefits of GIS and mobile applications. 35%reported coordination gaps exist Figure 4.8 indicate opportunities for various improvement. Training programs to address doubts shown by 43% of respondents is important Figure 4.9. Development of user-friendly tools could convince 22% neutral respondents. Findings align with Musingo (2018) that importance of capacity development in utility of digital tools for forest monitoring, integrated digital literacy programs for marginalized groups would help bridge the gaps.

Improvement of institutional show successes via CFAs with 32% reduction in illegal logging, increased forest cover via community led afforestation and early detection systems

through patrols. Formalization CFA-KFS partnership is an opportunity to address 30% neural through inclusive programs supported by 60% of respondents Table 4.10. These findings align with Rotich (2018) and Thygesen et al. (2016) that ability of devolved governance and community partnerships in forest management is in improved institutions.

68% support for CFAs role in governance emphasises importance of including traditional knowledge to formal mechanisms. This includes elder participation in decision making, develop hybrid monitoring systems. Further, need for including technology with local tracking and come up with knowledge that will move across generation. This is supported by UNEP (2015) that balancing role of indigenous knowledge is important in improving effectiveness of forest conservation.

5.3 Summary of Main Findings

Research seeks to answer three questions on forest governance in Molo Ward. First, local community's perceptions of current forest management practices, second, community involvement in these activities and lastly, factors influencing local participation in forest management. To answer these questions, research used surveys and interviews targeting local community, Kenya Forest Service officials, local leaders, NGOs, and CBOs to gather complete data on participatory forest management.

5.3.1 Current forest governance practices in Molo Ward and their effects on community participation

Findings show that community perceptions on forest management are positive with few mixed reactions. Four factors were identified as good to improving local participation in forest activities and they include governance policies with integration of CFAs, but bureaucratic challenges prevented 35% of participation from getting involved in forest activities. Unequal resource distribution like permits system was raised. Second, Payment for Ecosystem Services motivated 55% of participants but unequal distribution of benefits prevented 30% of the population from getting involved in forest activities. Third, integration of knowledge both government formal education and local knowledge was important with 68% of participants appreciating inclusion of traditional knowledge. 45% were divided on digital tools handling and 43% not sure. Lastly, capacity building is important having 80% support linking training programs to improved collaboration and 31% advocating for education through Ujuzi program.

Molo ward showed effectiveness of participatory forest management in ecological and social outcomes. In the environment collaborative approach led to 32% reduction in illegal logging and increased forest cover by planting local tree species. Socially it improved climate change awareness and promoted livelihoods through sustainable practices and lastly it promoted operational benefits.

5.3.2 Governance factors influencing community participation in Molo Ward, Kenya forest activities

62% of respondents appreciate CFAs for effectiveness in participation in forest management and 72% agreed that Forest Act of 2005 balances conservation and usage of forest resources but concerns existed as 30% of percipients noted unequal benefit sharing and 34% expressing exclusion in decision making processes because of lack of balance in leadership. Bureaucratic system in administration of forest activities kept recurring with as respondents highlighted issuance of permit times of up to three months.

Community participation is promising as 70% reported active involvement in conservation activities. Those activities include joint patrols with KFS resulting in 32% reduction in illegal logging. Tree planting programs and technology used on forest monitoring had 62% but 30% where neutral due to lack of awareness, logistical challenges, and unclear personal benefits from participating in forest management efforts.

5.3.3 Governance opportunities for enhancing community engagement in justifiable forest management in Molo Ward

Structural challenges remain with leadership and coordination gaps showing stakeholders noting need for clearer role definition between CFAs and KFS. One CFA secretary observed that *"KFS imposes blanket rules without considering our ward's unique needs."* Resource allocation imbalances came up with some CFA experiencing overwhelming weight and others not being used. Furthermore, difference in accessing technology and weak accountability like unclear permit allocation processes and ineffective problem resolution systems were also noted.

5.4: Conclusion

This study highlights vital role of community participation in achieving sustainable forest governance in Molo Ward.

5.4.1: Current forest governance practices in Molo Ward and their effects on community participation

Findings show that participatory approaches with structures like Community Forest Associations and supported by Forest Act of 2005 delivers good ecological and social benefits producing 70% participation rate and 32% illegal logging reduction.

5.4.2: Governance factors influencing community participation in Molo Ward, Kenya forest activities

Specific policy reforms, operational improvements, and institutional restructuring are important in realising positive improvement in forest management. This includes appreciating and including CFAs in Forest Act by improving partnership between CFA and KFS thus ensuring equitable access to benefits and investing in local knowledge education and technology programs.

5.4.3: Governance opportunities for enhancing community engagement in justifiable forest management in Molo Ward

Study shows structural and operational challenges that need to be addressed to achieve future sustainability in forest management. Amont the issues to be considered include unequal benefit sharing, exclusion from decision making processes, bureaucracy, and access to technology. Data shows that while traditional ecological knowledge is valued it hasn't been included in digital tools showing need for better capacity building and training programs.

Molo Ward can be a better place to implement and spearhead community led forest governance in Kenya and beyond. Addressing these gaps and using community knowledge the region can build sturdy foundation to forest management system that protects natural resources and gives local communities power over their resources.

5.5: Recommendation:

For the identified governance challenges to be effectively addressed there's need for enhanced inclusive participation in forest management in Molo Ward.

5.5.1: Current forest governance practices in Molo Ward and their effects on community participation

Reform that focus on CFAs and forest Act to improve transparency and capacity building. Further, enforce inclusive leadership through involving women and youths in Community Forest Association leadership positions. Further, include CFAs in permit approvals and reduces bureaucratic delays and improves service efficiency. Lastly come up with local courts that in cooperate traditional and government judges to solve local dispute.

5.5.2: Governance factors influencing community participation in Molo Ward forest activities

Annual training in participatory governance for at least 100 CFA leaders is necessary to improve decision making and administration abilities. It is necessary to in co-operate traditional knowledge with formal structures to preserve indigenous conservation practices for future generations. Conducting workshops to practically showcase sustainable forest management techniques as agroforestry should be conducted to serve as learning centres for the whole community and government officials.

Restructuring of policy to accommodate community reporting mechanism and establish framework for KFS officials to appreciate local evidence presented for prosecution. Actualize 40% women and 25% youth allocation in decision making structures which will promote inclusivity and be in consistent with Kimani (2018) who emphasized importance of gender equity in forest governance.

5.5.3: Governance opportunities for enhancing community engagement in justifiable forest management in Molo Ward

To improve operation, there’s need for ward level technological training specifically for GIS that was supported by 60% of respondents and mobile reporting systems. Evening and weekend meetings, childcare services, and provision of materials in local languages will likely address barriers faced by 30% of non-participants and improve participation in forest activities. Transparent permit issuance, public audits of forest revenues and CFA and KFS should be implemented for transparency and trust supporting principles outlined by CIFOR (2022).

Study proposes digital permit tracking systems that are accessible by community via USSD platforms that ensure real time oversight and accountability. This will improve

transparency. Further quarterly public audits of forest revenues to improve financial transparency and accountability should be implemented. More so community should be allowed to evaluate performance of CFAs and KFS.

5.6 Areas of Further Research

While this study focused on governance influence on community participation in Molo Ward's forest management, there's need for expanded governance areas to allow for wider investigation scope. This should include role of judicial processes in prosecuting forest crimes. Future research should examine how courts handle illegal logging and wildlife crimes. They should assess effectiveness of sentencing as preventive measures and investigate challenges that prevent successful prosecution of environmental offenses.

Economic regulation of forest products is another critical area and should focus on investigating (KRA) role in monitoring timber trade. Evaluating impact of tax policies on forest product businesses and assessing ways revenue collection from forest resources could light financial governance gaps in forestry sector.

Cross border forest governance mainly on controlling illegal transnational timber trafficking. Studies should investigate role of immigration departments and map out smuggling networks and evaluate effectiveness of border surveillance technologies in protecting forest ecosystems.

Holistic governance integration is also necessary requiring research on inter agency coordination beyond CFAs and KFS. Developing integrated frameworks that include judicial revenue, immigration and other forest stakeholders would foster unified governance. Furthermore, understanding challenges of policy coordination across sectors would help in streamlining forest management practices both nationally and regionally.

Expanding participatory approaches is equally important. Private sector can play vital role in forest conservation and studies should evaluate corporate partnerships roles of eco-tourism operators in security and effectiveness of private security firms in protecting forests. Additionally, strengthening community intelligence systems by developing grassroots reporting mechanisms, replying on traditional knowledge in crime prevention and assessing incentives for community informants can enhance forest protection efforts from the ground up.

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APPENDIX A: REQUEST FOR PARTICIPATION IN ACADEMIC SURVEY

Dear Respondent,

My name is Robert Namayi Oduya, a student at Africa Nazarene University, pursuing a Master of Science in Governance, Peace, and Security. As a requirement for completing my master's degree, I would like to include you in my study, aiming to assess the influence of governance **on community participation in forest management: A Case study of Molo Ward, Kenya.**

You have been identified as an important member and therefore form part of the population of interest for this research. Please contribute to the survey by taking a moment to respond to the enclosed questionnaire. Please read the questions carefully and select the appropriate answer.

Finally, I assure you that the information gathered will be handled with strict confidentiality and used solely for this academic study.

Thank you sincerely for your participation.

Yours faithfully,

Robert Namayi Oduya

APPENDIX B: RESEARCH QUESTIONNAIRES

Kindly answer the questions honestly by writing your responses in the space provided and by putting a tick at the proper Likert scale corresponding to the statement.

Do not write your name, the answered questionnaire and information shall be kept confidential.

Section 1: Biological data (**Respondent Information)**

1. Name (Optional):

2. Age:

3. Gender:

a) Male

b) Female

c) Other

4. Occupation:

5. How long have you lived in Molo Ward County?

6. What is your highest level of education?

a) Primary

b) Secondary

c) Tertiary

d) Other (please specify):

"Thank you for taking the time to fill out this survey."

SECTION II: Current Forest Governance Practices in Molo Ward and Their Effects on Community Participation

i. What are the perceptions of the local community in Molo Ward regarding current forest management practices?
ii. What is the capacity-building factors influencing collaborative forest management?
iii. What are the adoption factors enhancing collaborative potential in forest governance?
iv. What are the factors influencing stakeholder coordination on collaborative forest governance?
v. How do stakeholders align roles to enhance forest governance efficiency?
vi. What is the impact of information coordination on collaborative forest governance?
vii. What are the adoption factors enhancing public trust through coordinated information sharing in forest management?

SECTION III: **Governance Factors Influencing Community Participation in Forest Activities in Molo Ward, Kenya.**

i. What is the level of community involvement in forest management?
ii. What are the factors influencing the adoption of collaborative forest management approaches?
iii. What are specific practices working well in forest management?
iv. What are the factors affecting community involvement in Molo Ward?
v. What are the management practices working well in forest management?
vi. What are the community perceptions of the Kenya Forest Service (KFS)'s role in Molo Ward?
vii. How does the community evaluate the effectiveness of KFS in Molo Ward?

SECTION IV: Governance Opportunities for Enhancing Community Engagement in Justifiable Forest Management in Molo Ward.

i. How does the community successfully balance forest utilization with conservation efforts?

ii. How effective is the Forest Act of 2005 in promoting conservation within Molo?

Evaluation Criteria	**Agree (%)**	**Disagree (%)**	**Unsure (%)**
Promotes sustainable forest use while ensuring conservation			
Has reduced incidents of illegal logging			
Has decreased forest encroachment			
Has improved coordination among forest stakeholders			
Has increased forest cover through afforestation			
Has enhanced public awareness of forest conservation			
Local communities clearly understand provisions.			

iii. Perceptions of Forest Governance Outcomes in Molo Ward

iv. What is the level of community engagement and advancements of Payment for Ecosystem Services (PES) initiatives?

v. What is the level of technology adoption and governance coordination in forest management?

vi. What is the level of technology accessibility and usefulness in forest management?

vii. What are the priorities for strengthening forest governance in forest management?

viii. Who are the individuals involved in forest conservation initiatives within Molo Ward?

APPENDIX D: University Authorization Later

AFRICA NAZARENE
UNIVERSITY

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16th April 2025

TO WHOM IT MAY CONCERN

RE: RESEARCH PERMIT: ROBERT NAMAYI ODUYA

Robert Namayi Oduta Reg. No. (110062310) is a bonafide postgraduate student at Africa Nazarene University, pursuing a master's degree in governance, Peace and Security Studies. This program entails Coursework and Thesis. He has successfully completed coursework and defended his thesis proposal entitled:

"Governance Influence on Community Participation in Forest Management: A Case Study of Mole Ward, Kenya".

Any assistance accorded to him to facilitate data collection and complete his thesis will be highly appreciated.

Sincerely,

Dr. Simon Obwatho
DVC, Academic & Student Affairs

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

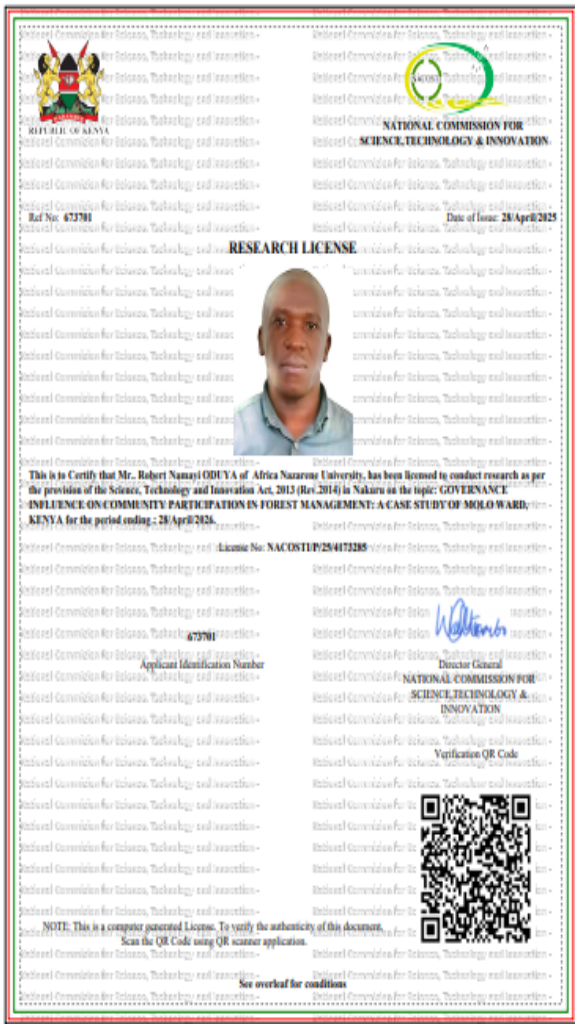
The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to.
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
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APPENDIX D: Research Site Maps (Molo Sub-County)



