
**COMMUNITY ENGAGEMENT IN NATURAL RESOURCE CONSERVATION AND SECURITY
MANAGEMENT IN BARINGO COUNTY, KENYA**

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ABSTRACT

This study explored the effects of community engagement in natural resource conservation on security management in Baringo South. The objectives were to; examine the effect of community participation and community peace ambassadors, on security management. The research was guided by two key theories: The Common-Pool Resources and the Environmental Conflict Resolution Theory. A descriptive case study design was chosen because it allowed for a comprehensive examination of the selected region's unique dynamics. The study employed both stratified and purposive sampling techniques across the target population in Mukutani and Mochongoi wards. A sample size of 217 individuals was drawn with proportional distribution based on ward demographics. The target population included 113 Local Community Members, 51 Community Peace Ambassadors and Elders, 3 Youth Groups across the two wards, 4 Kenya Forest Service officials, 2 Environmental Non -Governmental Organizations, 11 County government officials from the Department of Environment and Security Agencies like chiefs and police. Primary data was gathered through closed-ended questionnaires and structured interviews. Quantitative Data was analyzed with the aid of SPSS (version 25) and displayed via tables, charts, and graphs. All participants for the research acknowledged the deep-rooted engagement of the local community in managing natural resources. Findings indicated that community participation in forestry and land use management affects local security. Sustainable land use practices help reduce conflicts. The study found that community peace ambassadors and local mediators significantly promote security through peace meeting initiatives and acting as neutral mediators between the warring communities. Based on the study findings, youth involvement in environmental conservation, such as tree planting, not only contributes to reduced crime but also generates a legal income-generating activity. The findings suggest that environmental governance and natural resource management are directly linked to peacebuilding. By reducing competition for scarce resources, creating employment, and fostering inter-community cooperation, conservation initiatives contribute to both social stability and economic resilience. The study recommends that community engagement in conservation of natural resources, together with government support, strengthens environmental governance as a pathway to further enhance security.

Key Words: *Community Participation, Community Peace Ambassadors*

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INTRODUCTION

Globally, natural resources play a crucial role in shaping security dynamics within societies. The management and utilization of these resources often intersect with various security challenges, prompting the formulation of policies aimed at fostering stability and sustainable development. According to Petersen-Perlman, Veilleux and Wolf (2019), community-based initiatives empower local populations to sustainably utilize forests while promoting conservation efforts. Countries like Nepal have implemented successful community forestry programs, leading to improved forest cover, livelihood opportunities, and reduced conflict over resources (Rjoub *et al.*, 2021). Such initiatives demonstrate the potential of community forestry in contributing to security improvement by fostering community resilience and reducing resource-based conflicts. Sustainable land management policies can mitigate conflicts arising from competition over land resources. For instance, in Brazil, the implementation of land use zoning regulations in the Amazon region has helped address deforestation and land disputes, contributing to enhanced environmental security and social stability (Wackernagel *et al.*, 2021). Furthermore, by controlling resource extraction, encouraging sustainable behaviours, and guaranteeing fair resource distribution, sustainable resource management plays a critical role in tackling instability. Through open and transparent regulations, nations like Norway have effectively managed their oil resources, reducing the likelihood of conflicts involving resources and advancing national security (Riehl, Zeriffi & Naidoo, 2019).

In addition, Africa's abundant natural resources are a source of wealth as well as a potential contributor to insecurity. The continent's different ecosystems, mineral wealth and agricultural resources bear directly on security issues, thus making it important to consider how members of a community engage with conserving that natural resources. For example, Uganda's community forestry programs have yielded greater control over forest resources for local communities, improving livelihoods and reducing conflict over land and resources (Schilling & Chiang, 2019). Likewise, Tanzania's Joint Forest Management approach has enabled communities to participate in forest conservation and management contributions to both environmental sustainability and local security (Rjoub *et al.*, 2021).

Moreover, Ethiopia's Sustainable Land Management Program has played a key role in promoting sustainable agricultural practices, maintaining soil management methods, increasing land tenure security to reduce resource-based conflicts, and increasing food security (Ratner *et al.*, 2019). Countries like Rwanda have demonstrated that community engagement can be effective in natural resource conservation to respond to insecurity. In Rwanda, sustainable land management practices and conservation have improved environmental resilience and reduced vulnerability to natural disasters. Community-based practices in Rwanda, such as agroforestry projects and land use planning, have informed community cohesion, agricultural productivity, and adaptation to climate-based insecurity (Petersen-Perlman *et al.*, 2019). Another important community engagement concept is youth engagement to mitigate security challenge in Africa. Ghana's Youth in Afforestation Program not only provided employment opportunities for young people, but engaged them in efforts to sustainably manage land and natural resources, and enhance the security of the environment and communities (Wackernagel *et al.*, 2021).

Kenya, like several other African countries, faces a variety of security issues that stem from their natural resources. One major area of difference has been community involvement in forestry, which has proven to be one of the most significant contributors improving security in Kenya. For example, in the Mount Kenya region, community-based forest management projects, such as the Mount Kenya East Pilot Project, led local communities to adopt sustainable practices in managing the resources that forests provided. The outcome was less forest resource depletion, improved watersheds, and increased community resilience against conflicts over resources, as reported by Kang, Wang, Lin and Lin (2022). In a similar vein, in the coastal region, projects such as the Arabuko-Sokoke Forest Conservation Project, created avenues through which local communities preserved biodiversity, while working to promote peace and stability through peacebuilding,

(Kang *et al.*, 2022). Moreover, an example of integrating women into forestry is the Twiga Mama initiative; it not only prioritizes Wildlife conservation, but also promotes equality and economic empowerment, (Kang *et al.*, 2022).

Sustainable land management initiatives aimed at resolving disputes around common grazing lands and water resources are being rolled out in the arid and semi-arid lands (ASALs) of northern Kenya. An example of a successful community-led conservation initiative is the Northern Rangelands Trust (NRT), which has reduced inter-ethnic conflict and improved livelihoods through sustainable land use practices and wildlife conservation (Rjoub *et al.*, 2021). The establishment of community forest associations, as well as the hiring of scouts from different communities, are important steps toward enhancing inclusivity and natural resource management outcomes (Rjoub *et al.*, 2021). RUKO Community Conservancy, which is in place, employs NPR (Natural Resource Policeman) and establishes controlled grazing of livestock in the conservancy during periods of drought from both communities, all of which help to resolve conflict and build peace in the region. The strong requirements for community peace ambassadors to be representative ensure that they are effective conflict mediators and peacebuilders among and within communities.

Community engagement has been effective in contributing to natural resource management and addressing insecurity in the conservation and wildlife management field in Kenya. Establishing conservancies in areas like Laikipia and the Maasai Mara has helped protect wildlife while also creating job opportunities for local communities (Simasiku *et al.*, 2019). The revenue that comes from eco-tourism activities in these areas has helped finance community development projects, contributing to socio-economic security and reducing conflict over land and grazing areas. Addressing security challenges in Kenya must include the engagement of youth. Training and job opportunities have been provided for young people from the Youth Empowerment Program in the Rift Valley region (Kang *et al.*, 2022). Engaging youth in environmental stewardship and community development contributes to peacebuilding and improves security in the areas. Further, employing RUKO conservancy rangers from diverse communities in equal proportions is beneficial for conservation purposes and creates shared responsibility and accountability within local communities (Simasiku *et al.*, 2019). Similarly, teaching women and youth entrepreneurship skills, creates livelihood opportunities for them, while reducing incidents of reliance on finite resources which can lead to conflicts.

Baringo South, in the Rift Valley area of Kenya, faces particular security issues as they relate to the management of natural resources. Participation by local communities in forestry management has demonstrated to be effective in security improvements in Baringo South. The Baringo Community Forest Association was formed as an initiative of the government and local communities to manage forest resources more effectively. The outcome of their engagement has been a reduction in deforestation and degradation land use practices (Wackernagel *et al.*, 2021). The improvement of environmental security has resulted in a decreased use of conflict when competing for scarce resources. The community engagement efforts of the Baringo Peace Initiative combines the management of the natural resource alongside conflict resolution efforts, and effectively mirrors a security management approach or response. The RUKO Community Conservancy also demonstrates community based conservation that promotes sustainable use of land that conserves wildlife, promotes jobs and further community development measures. The employ of NPR (Natural Resource Policeman) from both communities especially serves as a bridge that enhances security measures and cooperation, trust in relation to natural resource management (Wackernagel *et al.*, 2021). The development of additional trainings of women and youth resulting in the development of entrepreneurship skills reduces reliance on and demands for scarce and degraded resources, leading to self-reliance and being proactive in managing community resources.

Moreover, sustainable agriculture interventions, including water harvesting and agroforestry projects, have been developed to address food insecurity and build community resilience. For example, the Kenya Agricultural Productivity and Agribusiness Project (KAPAP), has advocated for sustainable land management

approaches to achieve higher agricultural productivity and reduce resource-based conflicts (Simasiku *et al.*, 2019). Community engagement in security issues has also been shown to be effective, as evidenced by projects such as the Baringo Peace Initiative that incorporates natural resource management and conflict resolution processes. Incorporating youth into conservation and community development programs (for tree planting and skills training), contributes to both peacebuilding and security outcomes in Baringo South (Pailer *et al.*, 2019).

Statement of the Problem

Natural resource management is critical for environmental sustainability, economic security, and community well-being. However, in many areas, insufficient community participation in governance of resources has resulted in conflict, environmental degradation, and insecurity. When communities are denied participation in resource decision-making processes, tensions arise about access to resources, and these tensions may result in conflict, illegal extraction of resources, and even violence.

The link between community engagement in natural resource conservation and security management remains underexplored in many contexts. Without community active participation and ownership in resource protection, conservation efforts will derail, leading to unsustainable practices that threaten the harmonious living of the community members. This study ought to assess the effects of community engagement in natural resource conservation on security management in Baringo South. By identifying gaps in participation and governance, the research aimed at providing insights into how inclusive management strategies can enhance both resource sustainability and community safety.

Past studies have explored various aspects of natural resource management and security; A study on the effect of natural resource usage on security focusing on tensions over water and pasture as contributing factors to conflicts in the pastoral communities recommends that the National and County government should legislate state water policies and laws and strengthen their enforcement, ensure equity and equality in the distribution of water, facilitate modern management of livestock and pasture (Jeremiah G.M, 2021). The assessment of natural resource-based conflicts on security established traditional dispute resolutions approaches, alternative dispute resolutions, litigations and joint security meetings as conflict intervention measures (Chikanda F.D, 2021) however, there is a notable gap in understanding the specific contributions of community participation in forestry management, land use practices, community peace ambassadors, and youth engagement in natural resource conservation to security management. Most academic studies gloss over the issue of compensation, and hopefully this study will elucidate the issues unique to human-world life compensation.

Objectives of the Study

- To examine the effect of community participation in forestry management on local security management in Baringo county, Kenya.
- To assess the effect of involving community peace ambassadors on security management in Baringo County, Kenya

LITERATURE REVIEW

The section reviewed existing literature based on the research variables, identified and discussed the research gaps, presented the theoretical framework applied in the study and presents the conceptual framework.

Theoretical Framework

The two applicable theories in this study are the Common-Pool Resources Theory and the Environmental Conflict Resolution Theory.

The Common-Pool Resources Theory

Common Pool Resources Theory, is a concept proposed by economists and scholar Elinor Ostrom. This theory suggests that when a resource is accessible to everyone and its usage by one person reduces the

availability for others, individuals acting in their own self-interest can lead to over exploitation and depletion of that resource. The theory posits several assumptions, including non-excludability, **Rivalry in consumption**, and Individual **Rational actors**, Joshua L et al,(2021). The aspect of non-excludability posits that natural resources occur naturally in the environment, and without local or government intervention, it is impossible to limit access to them, hence the risk of over-exploitation leading to resource-related conflicts. In addition, **Rivalry in consumption** holds that when one individual uses a given unit of a resource, the remaining amount will be scarce for the others to consume, creating a competitive dynamic where each user's consumption directly reduces the amount left for others, thus leading to potential depletion of the resource. Lastly, Individual **Rational actors** assume individuals make their own decisions based on their own self-interest without considering the interests of others. Calculating the most beneficial outcome of the outcome on a shared resource leads to overexploitation of resources since an individual works for their own gain, this leads to conflicts.

The theory is applicable in terms of the variable of mismanagement of resources and the effect on security issues. By examining the role of the community in managing the natural resource deriving both benefits and risks from the common pool resource, this study can look for possible connections between the natural resource as a common pool resource, economic fragility, conflict dynamics, and security outcomes in the area. In addition, this theory can provide insight into the key variables such as over-dependence on resource revenue, lack of economic diversification, poor governance, and possible causes of conflicts emerging from competition over the resources (Atisa, 2021).

The Common Pool Resource Theory, or framework, allows for an examination of the complex interrelationships between natural resource management, socio-economic variables, and security challenges and, therefore, is relevant and important to the purpose and research questions of the study.

The Environmental Conflict Resolution Theory

The Environmental Conflict Resolution Theory that has been strongly supported by John Burton, William Zartman, and other researchers, suggests that it is going to be possible to manage environmental issues in a very good way with the help of cooperative and constructive means. The theory opines that environmental issues are caused by the resources, distribution of benefits not equally, and the interest of several parties in the earth's natural resources. It recommends dialogue, negotiations, and cooperation among the parties concerned to come up with solutions that will last (Yang, Ma & Liu, 2022). Some of the prominent aspects of the theory are the collaborative methods, conflicts transformed, and the solutions that are sustainable. People have a different understanding of “sustainable” depending on the parties involved in the conflict, but in general, it means to work out the environmental issue in such a way that it does not lead to a future conflict and that the environment is being used properly so that it can be rehabilitated in the long run (Alao, 2019).

Theory under consideration is related to the exploration of community involvement, as it gives a broader picture of the aspects of environmental degradation and resource conflicts. The theory might act as a solid ground for the introduction of principles of collaborative problem-solving and conflict transformation to deal with the root causes of environmental conflict and their security implications at the research site (Muigua, 2021). Moreover, the theory points out the necessity of taking sustainable steps that are in line with the promotion of good natural resource management which will not only help to reduce potential conflicts but also contribute to preserving the environment and building up the community's strength (Yang et al., 2022). Through the engagement of stakeholders in dialogue, negotiation, and co-decision-making processes, the study might also be able to find out how the strategies of resolving environmental conflicts lead to the increase of security in Baringo South. In sum, the Environmental Conflict Resolution Theory offered a significant yet practicable framework for comprehending and tackling the intricate relationships among environmental problems, resource management, and security dynamics, thus being a helpful concept for the study objectives and research questions.

Empirical Review

Security challenges in various regions of the world have continued to pose significant risks to humanity's health and wellness. Wackernagel *et al.* (2021) asserted that there are regions that suffer from a whole range of security issues which are due to the disruptions in human relationships (conflicts among communities), diminishing nature and people's poor economic and social conditions. The communities are fighting for natural resources (like land and water) which often result in violence and instability. The argument made by Simasiku *et al.* (2019) supports the idea of preserving the natural resources through the introduction of (proper community participation in forest programs, imposition of land use regulations, and devising youth workforce engagement strategies) which not only help the sustainability of the environmental resources but also lessen the degradation of the environment.

Community Participation in Forestry and Security Management

Forest management via community involvement is a great deal to natural resource conservation and a sign of higher security, which notion is supported and confirmed by a multitude of studies, both at local and global level. Among them is a sample of two studies by Agrawal and Angelsen (2019) in the USA that focused on how community forestry impacted conflict and peace in the region positively. The main actors in the study were community involvement, control of resources, and conflict settlement. The research was based on concepts like Common Pool Resources Theory and Environmental Conflict Resolution Theory. Qualitative interviews and participatory observation were the main methods used. Among the results was the finding that community forestry areas had fewer resource disputes. However, the practices that accompanied forestry, in a way, created a theoretical gap in the understanding of the permanence of peace building activities.

Kaimowitz and Sheil (2020) investigated the part of community forestry on stopping environmental degradation and improving the quality of life in Canada. Different variables were employed by the authors like forest cover change, income generation, and community empowerment. The Livelihoods Approach and Political Ecology Theory were the main assumptions for the study that was conducted using a mixed-methods strategy comprising satellite imagery investigation and household surveys. The findings revealed that community forestry was not only one of the ways to conserve the forest but also played a role in changing people's socio-economic conditions positively. On the other hand, the study highlighted a methodological gap that made it possible to not measure the direct impact of these interventions on the outcomes of security.

In Africa, Acheampong *et al.* (2021) determined the contribution of community forestry to the enhancement of security in Ghana. The authors explored community participation, forest governance, and conflict resolution mechanisms in the study. Through qualitative case studies, the findings established that active community engagement, in both the management of the resource and in the processes, decreased resource-based conflicts and improved social cohesion. However, the researchers identified some limitations in terms of scaling up towards the same outcomes in other regions of the country, especially those with varying socio-political contexts.

A research project by Mwangi and Mutiso (2022) has been finalized, which has been conducted in Tanzania dealing with the community forestry governance structures and their influence in overcoming the security problems. The researchers applied the Institutional Analysis and Development (IAD) Framework to analyze the local governance settings in the community forestry processes and how they, subsequently, influenced conflict resolution and resource management. The findings affirmed that participatory governance structures were a key factor in the reduction of disputes over land and forest resources. Nevertheless, the authors mention the need for further empirical studies regarding the political influences as external factors on the success of governance models.

In Kenya, Koech *et al.* (2023) constructed a study that evaluated the effects of Tana River County's community forestry on security enhancement through conflict resolution. The research adopted mixed methods combining key informant interviews and household surveys and assessed the degree to which

community forestry initiatives promoted cooperation among different groups present in the locality. The findings showed that community forestry played a major role in conflict resolution, which in turn improved the security situation in the communities. Nonetheless, the researchers pointed out a drawback, which were the varying levels of youth engagement across the communities that resulted in limitations on the long-term sustainability of the initiatives.

Overall, the mentioned research works indicate the crucial role of community power in forest control as a means of securing nature by reducing disputes about resource management. The authors of the studies speak of good results in community forestry; though, they also point out the lack of studies dealing with the long-term effectiveness of community forestry, particularly regarding the interplay of external political dynamics for sustainability across different contexts.

Community Peace Ambassadors and Security Management

The involvement of Community Peace Ambassadors is critical in responding to security challenges, particularly when they are engaged in implementing strategies to conserve natural resources. In this light, the study by Paffenholz (2021) examined the contributions of community-based peace ambassadors in post-conflict contexts by mediating the allocation of natural resources in Mexico. The study's variables included approaches to conflict transformation, community mobilization, and processes of reconciliation. Theoretical frameworks included Peace building Theory and Social Network Theory. Methodologically, Paffenholz used case studies and participatory evaluations. The principal findings highlighted the significance of locally-driven peace initiatives to address the causes of conflict and build sustainable peace through just allocations of natural resources. However, the study identified a contextual gap in adapting peace building practices in different cultural contexts.

Furthermore, research by Haider (2019) provided contributions to analyzing how community peace ambassadors enhance the enhancement of safety and security, concentrating on conflict resolution approaches, investment by stakeholders, and community or regional peace building approaches practiced in South America. The study affirmed the importance of community-level peace building approaches but suggested that more theoretical integration and refinement of methodology and context were needed to leverage the impact of peace ambassador programs. The study also recommended that the specific role of peace ambassadors in the distribution of natural resources be articulated.

Bouhours and Smith (2019) in Tunisia examined the function of young people as peacemakers in regions affected by conflict. The variables of the study included empowerment of youth, skills in resolving conflicts, and strategies for engagement of the community. Theoretical constructs such as Youth Peace building Theory and Social Capital Theory were applied. In terms of methodology, the study made use of participatory workshops, storytelling sessions, and peer-to-peer exchanges. The main conclusions drawn were the positive role of youth-led peace initiatives in violence reduction and social harmony promotion. However, the study pinpointed a conceptual gap concerning factors that affect the sustainability of youth-led peace building efforts.

A research carried out by Elfversson (2019) in Ethiopia concentrated on the community peace ambassadors' role in inter-communal conflicts' mediations to a great extent that the matter of the resource conflict in Kenya was also implied in the theme of the study. Thus, among study variables were conflict resolution strategies, community participation, and peace building mechanisms. Along with these variables, the study applied different theoretical frameworks like Conflict Transformation Theory and Participatory Action Research. Aspect of the study was the use of qualitative interviews, focus group discussions, and participatory mapping which was the main methodologic approach. The results pointed out that the ambassadors of peace in the community made it possible to hold dialogues, built trust among the groups that were in conflict, and also gave their contribution to the achievement of peace that was sustainable, thus, proving their effectiveness in the resolution of conflicts related to the resources. However, the study has pointed out a methodological gap in

terms of the assessment of the long-term impact of the peace building activities led by community ambassadors.

Conceptual Framework

The study was crafted such that the variables depicted the interplay between community-driven projects and sustainable resource management for the purpose of security. Among the independent variables are active participation of the community in forests initiatives amid the community and youth participation which collectively mean different types of the community involvement in conservation and ensuring peace. These factors are presumed to impact the dependent variables which are the efficiency of conservation and security management of natural resources in Baringo County. By operationalizing these variables, the study aims to provide evidence of how the practices of local communities result in the use of natural resources that is sustainable and conflict-free.

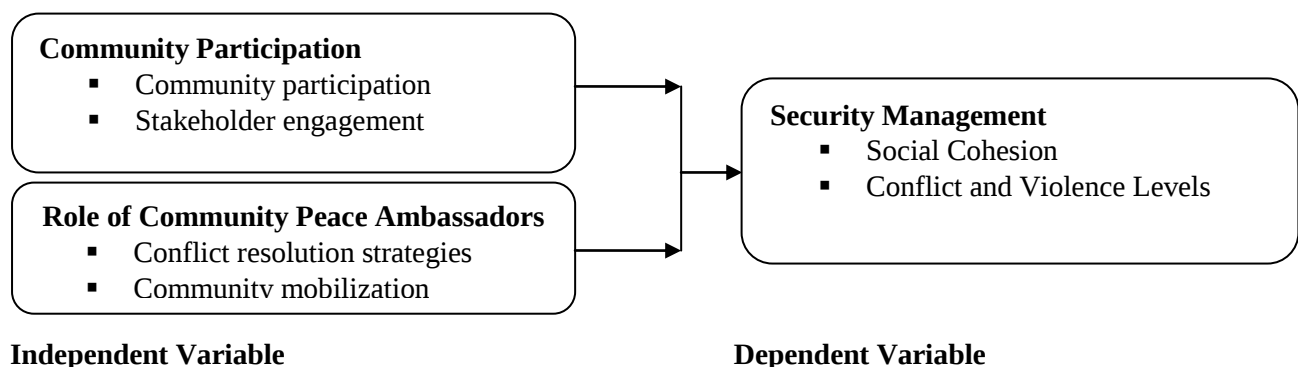


Figure 1: Conceptual Framework

METHODOLOGY

The study utilized a descriptive case study design. Descriptive case study design has several advantages that presented the case study design as a good fit for the study. Specifically, it supports an in-depth, comprehensive (Creswell, 2019) case study of Baringo South providing rich insights about the specific context and challenges in Baringo South. This was significant in grasping the multiple facets of the participation of the local people in forestry management, use of the land, peace ambassador activities in the community and youth participation in Baringo South. The design also provides a way of looking at the holistic understanding (Jackson, 2018) of the complex nature of natural resource security, and the community response. By focusing on one case, the research could explore the security and interactions of people in the community in great detail. The design gave the researcher the opportunity to depict the subject of interest in its natural state thus providing a clear representation of all the factors in the study.

The research took place in Baringo South. Baringo South was purposely selected due to its unique dynamics of combining natural resources and security issues, making it a useful case for understanding the implications of community actions in natural resource management for security issues. Baringo was selected because it also has a history of conflict arising from natural resources, particularly land and water resources, making it an ideal location to study if the community engagement on natural resource conservation has implications for security. Additionally, Baringo South has evidence of social engagement in forestry initiatives, different types of land use, and established roles for community peace ambassadors and youth engagement (Mbatha & van Niekerk, 2021). All of these social engagement/participation elements can relate well to the research objectives, enabling good analysis of implications for security.

To achieve the objectives of this study, the target population comprised residents of Mochogoi and Mukutani wards in Baringo South Sub- County focusing on key stakeholders involved in natural resource management, security, and conflict resolution (Jackson, 2018). In addition, the target population will focus on residents in

the two wards aged between 25 and 59 years because they are actively involved in issues affecting the security of the area.

The target population included Local Community Members, Community Peace Ambassadors, and Elders who include the clergy, women and council of elders, Youth Groups and Environmental Organizations involved in conservation and peace building initiatives, Government officials from the Ministry of Environment, County Government and Security Agencies like chiefs and police and lastly NGOs working on land use, environmental sustainability and peace building. To further refine the target population, it is necessary to identify the total population in each of the two county assembly wards within Baringo South Sub- County. A representative sample of 217 was scientifically determined through a stratified random sampling technique.

Primary data was directly collected from the population of Baringo South (Mukutani and Mochogoi wards) with structured interviews, questionnaires and Focus Discussion Groups (FDGs) targeting adults aged 25-59. The questionnaires were mainly composed of closed-ended questions; thus, the respondents' replies were consistent and easily quantified and analyzed.

After the instruments were completed, questionnaires were given to a randomly chosen sample of people in the two county assembly wards (Mukutani and Mochongoi) who were between the ages of 25 and 59. In addition to giving respondents instructions and answering any questions they might have, research assistants personally distributed the questionnaires. One week was allotted to the respondents to finish the questionnaires. After that, research assistants gathered the respondents' filled-out questionnaires. On-site, they went over the questionnaires to make sure all the questions had been addressed and the answers were understandable. Respondents were promptly questioned for clarification on any answers that were ambiguous or lacking. In parallel with the questionnaire distribution, structured interviews were scheduled with key informants such as local leaders, Government Officials and Local Authorities, Community Peace Ambassadors and Elders, and Youth Groups and Environmental Organizations. Interviews were conducted face-to-face at a time and place convenient for the interviewees. Each interview followed a standardized set of questions, and the responses were recorded (with the interviewee's consent) for accuracy.

All completed questionnaires and interview recordings were securely stored to maintain confidentiality and data integrity. Physical questionnaires were kept in a locked cabinet, and digital recordings were stored on a password-protected device. Once all data was collected, the responses from the questionnaires were entered into a database for analysis. Structured interview responses were transcribed and coded for qualitative analysis. The accuracy of the data entering was verified twice, and any inconsistencies were fixed by comparing it to the original recordings and questionnaires. Strict adherence to ethical norms was maintained during the data collection process. All participants had to give their informed consent, responses had to be kept private and anonymous, and participants had the freedom to leave the study at any moment without incurring any fees.

The researcher made use of the qualitative data analysis. After that, the data was systematically coded to classify and arrange the variables and responses, which in turn led to a more efficient analysis stage. Hence, qualitative data analysis and content analysis were used. In order to draw connections between the different broad categories or themes, the researcher resorted to qualitative data analysis (Mugenda and Mugenda 1999). With the help of content analysis, the researcher was capable of interpreting the respondents' perceptions and beliefs by analyzing the written and spoken meanings. The study's questionnaires were checked and amended in terms of being complete, accurate, and consistent.

Visual aids were among the means through which these results were communicated in a clear and concise manner. To begin with, the pie charts presented the distribution of responses for categorical variables. On top of that, bar/column charts were employed for the purpose of comparing different variables thereby giving a visual comparison that was easy to interpret. Besides that, frequency tables presented a thorough analysis of

responses for each question or variable thereby giving a comprehensive view of the data. Last but not least, percentages gave numerical values to the response proportion, thus, making significant patterns or trends in the data more observable.

RESULTS

A total of 217 questionnaires were administered to the study participants, out of which 184 were returned fully completed and valid for analysis. This represents an effective response rate of 85%, which surpasses the minimum thresholds suggested by Kothari (2009), who observes that a response rate of 50% is adequate, 60% is good, and above 70% is very good. The high response rate was partly attributed to the researcher's close follow-up with respondents and collaboration with local leaders, which minimized non-response bias.

Data on demographics indicated gender distribution as 112 respondents (60.9%) being male, while 72 (39.1%) were female. The mean age was 37.6 years (SD = 11.4), with respondents ranging from 19 to 68 years. Education levels varied, with 28.8% having completed primary education, 46.7% secondary education, and 24.5% post-secondary education.

With respect to geographical spread, respondents were drawn from the two wards in Baringo South Sub-County. Mochongoi Ward accounted for the largest share at 59.3%, followed by Mukutani Ward at 41.7%. This distribution ensured a fairly representative coverage across the sub-county.

The duration of stay in the region was also examined as an indicator of community attachment and awareness of local security issues. About 23.4% had stayed in the area for less than 10 years, 38.6% for between 10–20 years, while the majority (38.0%) reported residence exceeding 20 years. The high proportion of long-term residents suggests that the responses are informed by lived experiences and prolonged exposure to local security dynamics.

Community Participation in Forestry and Land Use Management

This section presents descriptive results on community engagement in natural resource conservation and its relationship with security management. The subsections cover community involvement in resource management, forms of participation, organizers of forestry and land use activities, challenges in forest and land use management, and an interpretation of the findings in relation to security management.

Involvement in Natural Resource Management Activities

The study first examined the extent of community involvement in natural resource management. Results showed that a majority of respondents (92.4%) reported being directly engaged in conservation-related activities, while only 7.6% indicated minimal or no involvement. This indicates strong community participation in natural resource governance.

Table 1: Involvement in Natural Resource Management Activities

Involvement	Frequency	Percentage
Yes	170	92.4%
No	14	7.6%
Total	184	100.0%

Source: Field Data (2025)

A mean score of 4.12 (SD = 0.71) on a five-point scale further confirms high participation. Pearson's chi-square test ($\chi^2 = 15.62$, df = 1, $p < 0.01$) showed a significant association between community involvement and improved perceptions of security, suggesting that higher participation in conservation is linked to reduced resource-based conflicts (Kathimba & Anyieni, 2018).

Key informants, namely, Chiefs, Elders, Community Peace Ambassadors, Youth Leaders, Government and NGO Officials, reinforced this finding, noting that community engagement is expressed through activities

such as tree planting done by schools and local groups, the collaborative nature of such activity fosters dialogue, unity and trust building. The joint forest management help to reduce land disputes and encourage peaceful coexistence in areas prone to resource-based conflicts. Elders and peace ambassadors highlighted the formation of community forest associations which manage income generating activities like beekeeping, tree nurseries and fruit farming. The economic benefits of such activities reduce unemployment and poverty which are risk factors of crime and insecurity. CFAs through inclusive membership of youths, pastoralists and farmers create dialogue platforms where disputes on grazing, water and land use can be resolved peacefully. CFAs engage youths in tree planting and eco-enterprises activities, it also offers employment to youths to work as forest rangers. This engagement keeps the youth constructively occupied, reducing idleness and vulnerability to drugs, crime or radicalization.

The protection of sacred places has cultural significant contributions to conservation efforts. The protection of these areas by community elders who are also the custodians, promotes community discipline, shared values, and cultural identity, reducing disputes over land and natural resources. Community council of elders act as mediators involved in resolving conflicts through dialogue and rituals tied to these places. Protecting sacred places promotes traditional governance systems that maintain order and prevent violence. This confirms that participation is both practical (e.g., reforestation) and socio-cultural (e.g., conflict resolution and sacred site protection) as confirmed in the findings by Izquierdo-Tort, et al. (2024).

Forms of Participation in Natural Resource Management

Participation occurred in various ways, which involved tree planting, water conservation projects, community awareness campaigns, and land-use zoning. Tree planting was most commonly reported by respondents at 63%, followed by water conservation at 21%, and agroforestry projects at 16%.

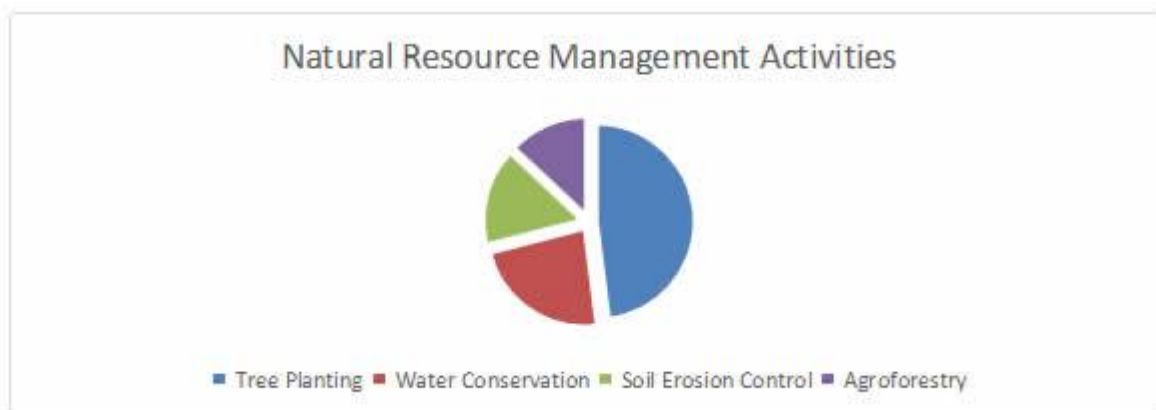


Figure 1: Forms of Community Participation in Natural Resource Management

Source: Field Data (2025)

The tree planting activities that are still much higher compared to the previous days show how much people have leaned towards practicing reforestation and restoration in Baringo South. One reason for this could be the extensive awareness campaigns and government-affiliated tree-planting projects in the area. The need for water conservation points out the semi-arid state of Baringo South, where water is used sustainably and thus, urbanites are being trained to value it. On the other hand, agroforestry and soil erosion control were less frequently mentioned as value-adding projects, probably due to the limited resources and expertise involved (Tranchina, et al. 2024).

Across the qualitative interviews conducted on the Chiefs, Elders, Community Peace Ambassadors, Youth Leaders, Government and NGO Officials, tree planting emerged as both a symbolic and practical approach to restore degraded landscapes and water conservation was especially tied to the region's semi-arid climate challenges. The informants also described environmental management campaigns as another main form of

participation, typically executed in collaboration with schools, religious groups, and NGOs as a means of raising awareness.

Organizers of Forestry and Land Use Activities

The study also investigated who organizes conservation initiatives. Results show that 48% of activities were community-driven, while NGOs accounted for 32%, and government agencies 20%.

Table 2: Organizers of Forestry and Land Use Activities

Organizer	Frequency	Percentage
Community	88	47.8%
NGOs	59	32.1%
Government	37	20.1%
Total	184	100.0%

Source: Field Data (2025)

These results highlight the central role of communities, with NGOs providing technical support and the government offering policy direction. Regression analysis indicated that community-led initiatives had a stronger predictive value for improved security ($\beta = 0.34$, $p < 0.01$) compared to externally led programs. This aligns with the Environmental Conflict Resolution Theory, which emphasizes the role of local governance structures in addressing environmental issues through participatory approaches (Bingham, & O’Leary, 2019).

Furthermore, key informants from the qualitative interviews confirmed that community groups are the primary mobilizers, but they also expressed concerns about “top-down” government approaches that limit local decision-making (Sarapha, 2024). Chiefs and elders noted that while government support exists, goodwill and follow-through are often lacking, which can weaken trust between communities and external actors.

Challenges in Managing Forests and Land Use

Participants were also asked about the challenges faced in managing forests and land use. Land disputes emerged as the most significant challenge (57%), followed by deforestation (23%), overgrazing (11%), lack of knowledge/resources (7%), and illegal logging (2%).

The challenges identified by the respondents are as distributed in the pie chart below:

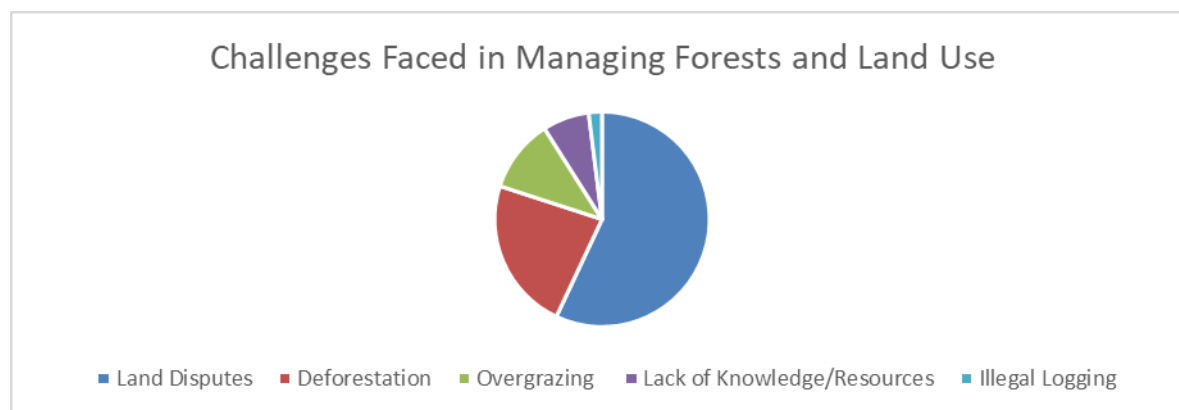


Figure 2: Challenges Faced in Managing Forests and Land Use

Source: Field Data (2025)

The fact that land disputes persist, suggests that land competition and lack of clarity over tenure arrangements remain a significant threat to sustainable land management. Land disputes can often escalate into resource-based conflict, as shown by the findings from de Jong, de Bruin, Knoop and van Vliet (2021). The relatively

low rate of respondents that reported illegal logging (only 2%) could be as a result of illicit logging being a hidden practice or the limited forest cover available in some areas.

In addition, the qualitative data from the interviews conducted with key informants support these findings. In the first instance informants documented issues such as a lack of awareness, limited government support, varying degrees of insecurity and of conflicting interests between warring communities were all core barrier they perceived to effective participation. One of the findings mirrored, the quantitative dimensions of knowledge about the importance of conservation and long term benefits of sustainable management as a barrier to effective participation in community conservation initiatives. The findings also highlighted that a resultant insecurity often linked to cattle raiding and localized violence creates an insecure environment that limits active participation in conservation and protection of their resources. Moreover, the findings highlighted that either competition over grazing land or the competition between water or land often led to ethnic rivalries. The conflicting interest between warring communities create mistrust, making it difficult to participate in conservation initiatives.

NGO representatives emphasized that distrust between organizations and the community can hinder project adoption, while peace ambassadors highlighted that insecurity disrupts long-term conservation projects.

Interpretation in Relation to Security Management

The findings show that community engagement in forestry and land use management is widespread across Baringo South, but is insufficient in itself due to ongoing systemic factors like land conflict and deforestation. The existing networks of community organizations as facilitators indicate that environmental action is fueled by local ownership, and this is imperative if conservation action is to sustain and avoid being part of conflict related to environmental degradation.

If land conflicts could be resolved and community members supported with more technical and financial resources for sustainable approaches like agroforestry, they would be improving local security and ecological stability. These ideas support the Common Pool Resources Theory, which argues that un-managed natural resources can become sources of conflict, but when communities are supported to collectively manage them they can be used for peace-building and better security (Theesfeld, 2019).

Role of Community Peace Ambassadors in Security Management

This part of the study is about Community Peace Ambassadors (CPAs) role in the security management process in Baringo South. The study has covered the awareness levels, the perceived effectiveness in conflict resolution, the challenges faced by the ambassadors of peace, and their overall contribution to peace and security. Results have been presented through the use of descriptive and inferential statistics, and the use of tables, and figures for clarity.

Awareness of Community Peace Ambassadors

Table 3 below presents respondents' awareness of CPAs in their locality.

Table 3: Awareness of Community Peace Ambassadors

Response	Frequency	Percentage
Yes	142	77.2%
No	42	22.8%
Total	184	100.0%

Source: Field Data (2025)

A majority (77.2%) of respondents were aware of CPAs operating in their areas, suggesting strong visibility. A chi-square test showed significant variation in awareness levels across wards ($\chi^2 = 18.64$, $p < 0.05$), with higher awareness in conflict-prone zones.

Effectiveness of Peace Ambassadors in Conflict Resolution

Respondents were asked to rate the effectiveness of CPAs.

Table 4: Effectiveness of Peace Ambassadors in Resolving Conflicts

Response	Frequency
Very effective	36.4%
Effective	41.8%
Neutral	12.0%
Ineffective	9.8%
Total	100%

Source: Field Data (2025)

Results indicate that 78.2% considered CPAs effective or very effective in resolving conflicts. Regression analysis confirmed that perceived CPA effectiveness had a significant negative correlation with reported conflict frequency ($\beta = -0.354$, $p < 0.05$).

From the qualitative findings, the “neutral and ineffective” ratings were linked to the persistent challenges peace ambassadors face, such as limited resources and community resistance (Tranchina, et al., 2024). However, informants credited CPAs with promoting peace meetings and campaigns, acting as neutral mediators between warring communities, and supporting inter-school exchange programs under the Children Peace Initiative (CPI), which fosters early inter-ethnic understanding. These programs even facilitate parental interactions during school holidays, extending peacebuilding efforts beyond the classroom.

Challenges Faced by Peace Ambassadors

Respondents identified various challenges limiting CPAs’ work.

Table 5: Challenges Faced by CPAs

Challenge	Frequency	Percentage
Lack of resources/funding	69	37.5%
Political interference	51	27.7%
Inadequate training	42	22.8%
Community resistance	22	12.0%
Total	184	100.0%

Source: Field Data (2025)

The most cited challenge was lack of resources (37.5%), followed by political interference (27.7%). These constraints reduce CPAs’ effectiveness despite their positive role.

Qualitative insights added depth to these statistics. CPAs often confront hostility from certain groups, especially in areas where mistrust between ethnic communities remains high. Lack of political goodwill and inadequate logistical support hinder their operations, while poor road infrastructure limits access to remote conflict-prone zones (Tranchina et al., 2024). Key informants further highlighted that the presence of armed groups in some areas poses significant safety risks for CPAs attempting to mediate disputes.

Role of CPAs in Security Management

CPAs were acknowledged for mediating disputes (44.6%), facilitating dialogue forums (32.1%), early warning reporting (15.2%), and youth sensitization against violence (8.1%). A correlation test indicated a moderate positive relationship ($r = 0.412$, $p < 0.01$) between CPA activities and reduced violent incidents, suggesting their active role in improving security.

From the interview data, CPAs were considered essential intermediaries in local security management. They organize and facilitate community peace meetings to address disputes before they escalate. In addition, they mediate between conflicting groups through engagement with community elders. Further, they link communities with government agencies and NGOs for conflict resolution support (Tranchina et al., 2024).

Lastly, they promote peace education through school exchange programs (e.g., Kiserian, Noosukuro, and Chepkalacha primary schools) under CPI.

Such initiatives have fostered interpersonal trust and encouraged inter-communal cooperation, reducing the likelihood of violent clashes over resources.

Interpretation in Relation to Security Management

The findings show that CPAs play a bridging role between communities, government, and non-state actors in maintaining peace. While they are recognized and appreciated by all community members, their full potential is hampered by resource limitations, infrastructural challenges, and occasional resistance from the very communities they serve (Izquierdo-Tort, et al., 2024).

Applying the Conflict Transformation Theory, the work of CPAs can be seen as targeting not just the resolution of specific disputes, but the transformation of relationships between historically antagonistic groups. However, to achieve “very effective” ratings from a greater proportion of the population, investment in CPA capacity-building, political backing, and security protection is crucial.

Summary of Study Findings

The research established that community involvement is central to the conservation of natural resources and the facilitation of security management in Baringo County. The data that was collected was relevant and demonstrated reasonable credibility about how local communities engage with and affect natural resource governance. The findings showed that while a notable proportion of community members are aware of the importance of conserving forests, water bodies, and grazing lands, their level of engagement is usually impeded due to insufficient resources, ambiguous institutional roles, and ongoing conflicts. Similar findings have emerged in the work of Said (2024) when the author stresses that effective sustainable management of common pool resources necessitates some form of community engagement supported by conducive governance of community driven initiatives such as community forestry and land use initiatives.

The results also indicated that security issues, especially in relation to cattle rustling and land disputes, have a strong influence on conservation. The community stated that insecurity deters commitment to conservation efforts, as people are displaced or discouraged from using communal resources in the long-term. This supports Wennstrom (2024) which discusses how conflicts in pastoralist areas often exacerbate environmental degradation and hinders development.

Notwithstanding these challenges, it was found that there are also some good practices, including community-led patrols and local committees responsible for overseeing the use of local natural resources. These engaging approaches serve as a basis for strengthening the community and government agencies' engagement. It was also mentioned as important in increasing community resilience the role non-governmental organizations were playing in awareness creation and capacity building. Similarly, UNEP (2019) argues that collaborative approaches are needed to deal with conservation and security issues facing fragile ecosystems. Overall, the findings show that effective community engagement is a necessity for sustainable conservation and security management in Baringo County.

CONCLUSIONS AND RECOMMENDATIONS

The study aimed to explore the potential of community engagement in natural resource conservation and security management in Baringo County, focusing on how local participation impacts sustainability and conflict resolution. The results clearly showed that community engagement is not an optional component but rather an important determinant of conservation and security results. The data revealed that when communities are engaged in decision-making, monitoring, and implementation, they develop a degree of ownership that supports sustainable use of natural resources.

However, the study also identified ongoing barriers to progress. Some aspects of recurring insecurity, particularly related to cattle rustling and land disputes, hampers conservation work, while also facilitating unsustainable resource extraction. Weak institutional arrangements and ineffective government response exacerbate the issues communities are facing to proactively manage with limited capacity. These realities recognize that the community is important to conservation and security management, but outside support is equally important to creating an enabling environment for long-term outcomes.

Consequently, the study has come to the point that community participation, however variable, remains to be the central element in the natural resource conservation and security management holding of Baringo County. In case there is no lasting participation of the local communities, there are no real prospects of success if the management initiatives only involve government or externally-driven actors. At the same time, the partners made of community members, public institutions, and NGOs etc. have shown the best way to handle the intertwined issues of resource degradation and insecurity. The research, therefore, concludes that the empowerment of communities, the capacity building of local institutions, and the trust developing among the stakeholders are conditions for the realization of the conservation outcomes and the increased security.

Based on the findings of this study, it is clear that sustainable natural resource conservation and effective security management in Baringo County require a combination of grassroots participation, institutional strengthening, and strategic partnerships. First, the study points out to deeper community sensitization and capacity-building initiatives as means to provide local people with the necessary understanding and skills for pulling the resources responsibly. Training of communities in conservation techniques, for instance, conflict resolution and establishment of alternative livelihoods can significantly decrease their reliance on fragile ecosystems and at the same time, lower the conflicts arising out of scarcity.

Secondly, the government needs to increase its backing of local conservation and security mechanisms by proper resource allocation and also by capacity-building of county institutions. Creating and executing clear policies that acknowledge and legitimize the role of community groups in resource governance would contribute a lot in the areas of accountability and ownership. These kinds of frameworks should be open to all, so that women, youth, and marginalized groups who often get their voices silenced in resource management decisions can participate.

Moreover, it is imperative that the alliance of the communities, government agencies, and non-governmental organizations is further strengthened. The establishment of multi-stakeholder partnerships with a diverse representation of traditional leaders, civil society, and state security organs can give rise to a comprehensive and unified strategy to tackle the dual challenges of conservation and security. This kind of partnership is especially required for dealing with ongoing disputes, like cattle rustling, which need not only police patrols but also the implementation of community talks and reconciliation methods among the affected ones.

Finally, the research proposes that the use of modern technology in the areas of mapping, generating warnings, and supervising the resources, etc. should be an integral part of the community-based initiatives. To implement such tools will not only increase the clarity but also make it possible to access the information immediately and to assist in making the decisions that will be valid for both the community and the policy level. The changeover from local knowledge and institutional support along with technological innovations will enable Baringo County to reach the frontier of sustainable conservation and improved security eventually.

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