



Assessing Awareness of Forest Conservation Laws: Insights from a Community Study in Homabay County, Kenya

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Abstract

This study examines the awareness of forest conservation laws among communities in Homabay County, Kenya, and explores the sources of information on these laws. Data were collected through surveys, focus group discussions, and key informant interviews. Results reveal high levels of familiarity with certain prohibitions, such as unauthorized logging and timber trade, while awareness of other regulations, such as unauthorized burning and waste dumping, was comparatively lower. Social circles, including friends and relatives, emerged as the primary source of information, followed by announcements at funerals and social media. The study highlights the importance of community-based awareness campaigns and the need for targeted educational initiatives to improve understanding and compliance with forest conservation laws. Recommendations include enhancing formal education on environmental conservation, leveraging community during formal community gatherings (barazas) for information dissemination, and utilizing digital platforms for outreach. This research contributes valuable insights for policymakers, conservation organizations, and community stakeholders aiming to promote sustainable forest management and biodiversity conservation.

Keywords: *forest conservation laws, awareness, community study, information sources*

INTRODUCTION

Forests are vital ecosystems that provide essential services to both humans and the environment. They play a crucial role in mitigating climate change, preserving biodiversity, and supporting livelihoods. However, the global forest cover has been steadily declining due to various human activities, including deforestation and unsustainable land use practices. In Kenya, as in many other parts of the world, forests face significant threats from population growth, agricultural expansion, and illegal logging. This has led to a loss of biodiversity, degradation of ecosystem services, and conflicts over resource use. In response to these challenges, the Kenyan government has implemented various conservation policies and regulations aimed at protecting and restoring forest ecosystems. Homabay County, situated in western Kenya, is home to four forests that are critical for local communities' livelihoods and environmental sustainability: Wire, Kodera, Lambwe, and Gwass. However, the effectiveness of forest conservation measures in the county depends largely on the awareness and compliance of local residents with existing rules and regulations. Understanding the level



of awareness of forest conservation rules and regulations among the residents of Homabay County is essential for effective policy implementation and sustainable management of forest resources. It is vital to assess how well-informed community members are about the purpose, scope, and implications of conservation policies, as well as their attitudes and perceptions towards them. The study aims to fill this knowledge gap by examining the level of awareness of forest conservation rules and regulations in Homabay County, Kenya. By exploring community perceptions, knowledge, and compliance with existing policies, the study seeks to provide valuable insights into the challenges and opportunities for sustainable forest management in the region.

RESEARCH METHODOLOGY

Study employed a cross-sectional survey research design, chosen for its structured approach in gathering data relevant to the study objectives. This design was complemented by a convergent mixed-method approach, allowing for a comprehensive understanding of the research topic, particularly suitable for descriptive studies, enabling deeper exploration and triangulation of findings.

Conducted in Homa Bay County, the study focused on four key forests: Wire, Koderia, Lambwe, and Gwassia, selected for their significance to local livelihoods. Homa Bay County, situated along Lake Victoria in Kenya, has a population of approximately 1,130,950 and covers an area of approximately 4,267.1km², characterized by semi-arid climatic conditions.

Targeting households residing in the selected forest station areas, the study also included key informants such as administration officers, forest officers, police officers, and county commissioners, totaling a target population of 5,147. Utilizing Glenn's table, the sample size was determined based on the entire population, resulting in a total sample population of 370 across the four selected forest stations.

The sampling procedure involved clustering the four forest stations, obtaining a list of households adjacent to the forests, and employing simple random sampling to select respondents. Proportionate distribution of the household population per station ensured representation across the study area.

A structured questionnaire served as the primary data collection tool, gathering quantitative data from sampled households through closed-ended questions designed to address the research objectives efficiently. Focused Group Discussion (FGD) guides facilitated the collection of qualitative data from randomly selected participants among the four forest stations, allowing for in-depth exploration of social issues related to forest conservation. Key Informant Interviews (KIIs) provided additional qualitative insights into the study topic, engaging administration officers, forest officers, police officers, and county commissioners.

The research instruments underwent piloting in Nyamira County to ensure accuracy and validity. Content validity was established through expert reviews and piloting, with modifications made based on feedback to enhance validity. Reliability was assessed using the



test-retest method and Cronbach's alpha coefficient for internal consistency, ensuring stability and consistency of the instruments over time.

Quantitative data analysis employed descriptive and inferential statistics, while qualitative data was thematically analyzed. Findings were presented using frequency and percentage tables, supported by relevant statistical tests. Ethical considerations included obtaining necessary authorizations, ensuring informed consent, maintaining confidentiality, and notifying relevant agencies before the study, with participants briefed on the purpose, duration, and procedures of the research, and privacy and anonymity assured throughout.

THEORETICAL UNDERPINNINGS

Understanding the complexities of forest conservation policies and their impact on local communities in Homa Bay County, Kenya, requires a theoretical framework that elucidates the intricate interplay between human behavior, institutional arrangements, and ecological dynamics. In this section, we outline three theoretical perspectives that underpin the study's analysis: Common Pool Resources (CPR) Theory, Environmental Communication Theory, and the Social-Ecological Systems (SES) Framework. These theoretical lenses provide valuable insights into the governance, communication, and resilience aspects of forest conservation efforts, guiding our exploration of awareness and compliance with conservation rules and regulations in the study area.

Common Pool Resources (CPR) Theory

The study draws upon the Common Pool Resources (CPR) theory to frame the examination of forest conservation policies in Homa Bay County, Kenya. CPR theory, rooted in the works of scholars such as Elinor Ostrom, highlights the collective management of shared resources by communities to prevent over-exploitation and ensure sustainability. According to CPR theory, resources like forests possess characteristics of non-excludability and rivalrous consumption, making them susceptible to degradation if not managed effectively.

In the context of forest conservation, CPR theory provides insights into the dynamics of resource use, governance structures, and institutional arrangements. It suggests that successful conservation efforts often involve local communities as stewards of forest resources, leveraging their traditional knowledge and practices for sustainable management. Community-based approaches, guided by principles of collective action, reciprocity, and trust, are central to the sustainable governance of forests as common pool resources.

By applying CPR theory, the study seeks to explore how community participation, collective decision-making, and institutional frameworks influence the awareness and implementation of forest conservation rules and regulations in Homa Bay County. It examines the role of



social norms, trust networks, and local governance mechanisms in shaping community attitudes and behaviors towards forest conservation policies.

Environmental Communication Theory

Additionally, the study employs principles of environmental communication theory to analyze the dissemination of information and messages related to forest conservation in Homa Bay County. Environmental communication theory emphasizes the exchange of knowledge, values, and perceptions concerning environmental issues among different stakeholders. It recognizes the importance of effective communication strategies in raising awareness, fostering understanding, and promoting behavior change towards environmental conservation.

In the context of forest conservation, environmental communication theory underscores the need for clear, accessible, and culturally relevant communication channels to engage diverse audiences. It emphasizes the role of communication campaigns, community outreach programs, and participatory approaches in conveying conservation messages and mobilizing public support.

By applying environmental communication theory, the study investigates the effectiveness of communication strategies employed by government agencies, non-governmental organizations, and other actors in promoting awareness of forest conservation rules and regulations in Homa Bay County. It assesses the accessibility, credibility, and resonance of communication efforts in reaching and engaging local communities, thereby shaping their perceptions and actions towards forest conservation.

Social-Ecological Systems (SES) Framework

Furthermore, the study adopts the Social-Ecological Systems (SES) framework to analyze the interrelationships between human communities and forest ecosystems in Homa Bay County. The SES framework conceptualizes the complex interactions between social and ecological components within a dynamic and adaptive system. It emphasizes the interconnectedness of human activities, environmental dynamics, and institutional arrangements in shaping the resilience and sustainability of socio-ecological systems.

In the context of forest conservation, the SES framework provides a holistic lens through which to understand the coupled human-environmental dynamics at play. It considers factors such as resource use patterns, livelihood strategies, governance systems, and ecological feedbacks in influencing the outcomes of conservation interventions.

By applying the SES framework, the study explores the socio-ecological drivers of awareness and compliance with forest conservation rules and regulations in Homa Bay County. It analyzes how socio-economic factors, cultural norms, political dynamics, and ecological conditions interact to shape community perceptions and behaviors towards forest management practices. Through this interdisciplinary approach, the study aims to generate insights into the



resilience and sustainability of forest-based livelihoods in the face of changing conservation policies and environmental pressures.

RESULTS AND DISCUSSIONS

This section presents the findings of the study.

Response rate of the study

All planned interviews and focus group discussions were successfully conducted, demonstrating full compliance with the study protocol. However, the questionnaire return rate was 83.24%, slightly below the planned target of 370 respondents.

The achieved response rate of 83.24% is considered excellent according to Kothari (2004), who suggests that a return rate of 80% and above is exemplary. This high response rate is indicative of effective communication with respondents, clear articulation of the study's purpose, relevance, and importance, as well as the respondents' intrinsic motivation to participate. Furthermore, personalized outreach and reminders from the researcher may have incentivized participation by fostering a sense of importance and personal connection to the study. By directly engaging with potential respondents and emphasizing their role in the research process, the researcher likely enhanced participants' willingness to contribute.

Demographic information of the respondents

Data was collected on the demographic characteristics of the main respondents, and the findings are presented in Table 4.2

Table 1: Demographic characteristics of respondents

Number of respondents N=280			
Respondents' Demographic Features		Frequencies	Percentage
Gender of the respondents	Male	183	59.4
	Female	124	40.3
	Inter-sex	1	0.3
	Total	308	100.0
Age of the respondents	20 and below	39	12.7
	21-30	109	35.4
	31-40	90	29.2
	41-50	41	13.3
	51 and above	29	9.4
	Total	308	100.0
Level of Education	Primary	115	37.3
	Secondary	108	35.1
	College	67	21.8
	University	18	5.8



	Total	308	100.0
Marital status	Married	211	68.5
	Single	76	24.7
	Divorced	5	1.6
	Separated	3	1.0
	Widowed	13	4.2
	Total	308	100.0
Occupation	Farming	164	53.2
	Non-farming self-employed	32	10.4
	Unemployed	35	11.4
	Casual worker	45	14.6
	Permanently employed	31	10.1
	Total	308	100.0

Table 1 provides valuable insights into the demographic composition of the respondent population, offering a comprehensive understanding of the sample characteristics. The data indicates a slight majority of male respondents, comprising 59.4% of the sample, compared to 40.3% female respondents. Additionally, there was one respondent identified as inter-sex, representing a minimal proportion of the sample.

The largest proportion of respondents falls within the age group of 21-30, constituting 35.4% of the sample. Other significant age groups include 31-40 (29.2%) and 20 and below (12.7%). The data suggests a relatively diverse age distribution among the respondents. Regarding educational background, the majority of respondents had completed either primary (37.3%) or secondary education (35.1%), reflecting a significant presence of individuals with basic and intermediate levels of education. A smaller proportion had attended college (21.8%), while the lowest percentage had obtained a university education (5.8%).

The majority of respondents were married (68.5%), indicating a significant representation of individuals in marital unions. Single individuals constituted the second-largest group, comprising 24.7% of the sample. Divorced, separated, and widowed individuals collectively formed a smaller proportion of the sample, totaling 4.8%. The data reveals that farming is the most prevalent occupation among respondents, with 53.2% of individuals engaged in agricultural activities. Non-farming self-employed individuals comprised 10.4% of the sample, indicating a notable presence of individuals involved in entrepreneurial ventures. Additionally, unemployed and casually employed individuals constituted similar proportions of the sample, highlighting the diversity of occupational statuses. Permanently employed individuals represented 10.1% of the sample, indicating a minority presence of individuals in formal employment settings.



The demographic profile outlined in Table 1 provides a nuanced understanding of the respondent population, facilitating the interpretation of study findings and the identification of potential patterns or associations between demographic variables and awareness of forest conservation policies.

Awareness of Forest Conservation Laws among the Forest Community

This study set out to assess the level of awareness of forest conservation policy in the study area. In so doing, the study established the extent to which respondents were aware of specific forest conservation laws, and the source from which they obtained information about the said laws. The findings are presented in this section.

Respondents' familiarity with specific laws and regulations

Respondents were provided with a list of the prohibitions that exist in Kenya laws. These prohibitions were obtained from the Forest Conservation and Management Act (2016), Forest Conservation and Management Regulations (2018), Forest Act (2005), Environmental Management and Coordination Act (1999), and Wildlife Conservation and Management Act (2013). Respondents were asked to select “yes” if they were familiar with them, and “no” if they were not. Table 2 shows details of those who responded “yes”.

Table 2: Respondents' Familiarity with Kenya's Forest Conservation Laws

Forest Laws	F	%
Unauthorized logging is prohibited	308	100.00
Transportation and trade of timber without a permit is prohibited	308	100.00
Construction of structures and roads within the forest is prohibited	298	96.75
It is illegal to settle or build on forest land without authorization	290	94.16
It is illegal to access forest land without authorization	276	89.61
It is illegal to cultivate on forest land without authorization	265	86.04
It is illegal to hunt, trap, or kill wildlife within forests without authorization	263	85.39
It is illegal to graze on forest land without authorization	256	83.12
Activities that disturb or damage cultural or sacred sites within forests are prohibited	255	82.79
It is illegal to collect any forest products without proper authorization	251	81.49
Deliberate or unauthorized burning of forests is prohibited	162	52.60
Mining and quarrying without authorization is prohibited	157	50.97
Dumping of waste in forests is prohibited	141	45.78

Table 2 provides data regarding forest communities' familiarity with the prohibitions in Kenya's forest laws. As evidenced, all respondents (100%) were familiar with prohibitions on



logging and unauthorized transportation and trade in timber. Additionally, a vast majority were familiar with prohibitions on constructing roads within forests (96.75%); settling or building on forest land (94.16%); as well as prohibitions on cultivation within forests without authorization (86.045). Similar high levels of knowledge about prohibitions related to logging were reported in Wire, Koderia, and Gwassii. Likewise, high levels of awareness were reported for prohibitions on illegal timber trade in (Government of the Republic of Congo, 2020; Forest Trends Colombia, 2020; Decree No. 182 Guinea, 2018; and E. Sulle, (2013); on illegal timber trade in Tanzania.

In this study, qualitative data obtained from focus group discussions (FGDs) and key informant interviews (KIIs) shed some light on the high level of awareness regarding the prohibitions on logging, illegal timber trade, building on forest land, and cultivation in forests. First of all, it emerged that the enforcement of these specific prohibitions was relatively stronger compared to others. Qualitative data suggests that security agencies, including Kenya Forest Service (KFS) personnel and police officers, might have prioritized monitoring and enforcement activities related to unauthorized logging, timber trade, cultivation, and construction within forests due to their significant environmental and socio-economic implications. For instance, one FGD participant said: *"You cannot be allowed to practice illegal activities which derails the conservation of the ecosystem and expect to walk freely within the community"*, while a key informant who was a community elder said *"If anybody engages himself/herself in practicing illegal activities in our forests, to carry the burden alone"*. Their sentiments were confirmed by a key informant from Kenya Forest Services, who said: *"The law is very clear and anybody found culpable will be prosecuted before the court of law"*.

Deriving from the sentiments mentioned above, this study posits that the heavy enforcement of prohibitions on logging, timber trade, cultivation, and construction in forests has contributed to the high levels of awareness on the same. This argument is also anchored on (FCMA, 2016), who avers that increased visibility of enforcement contributes to increased awareness among community members.

Secondly, qualitative data revealed that government agencies, non-governmental organizations (NGOs), and community-based organizations (CBOs) often conduct awareness campaigns and educational programs to inform forest communities about prohibitions related to logging, timber trade, and construction within forests. Thus, information about these prohibitions appears to be more readily available and actively disseminated, contributing to higher awareness levels. Qualitative data obtained from FGDs further showed that community forest associations and forest management committees also play a role in communicating and enforcing forest regulations at the grassroots level. These structures also appear to prioritize awareness-raising activities for prohibitions that have a significant impact on local forest resources and community well-being. According to one key FGD participant who also happened to be a member of a forest management committee: *"In as much as we would want our families to collect fuelwood from the forest, the due process must be followed so that*



people with malice can be deterred”. Relatedly, one key informant also said: *“Anybody who enters the forest to collect fuelwood should not carry with them any tool panga and axe included”*.

Furthermore, qualitative data from FGDs and KIIs also disclosed that community members frequently receive information about forest regulations through various forms of community engagement, such as training and seminars. The study reveals that during such community engagements, government agencies, non-governmental organizations (NGOs), and other players appear to prioritize the dissemination of information on logging, timber trade, cultivation, and settlement in forests. As espoused by one key informant from KFS: *“The biggest challenge is logging and illegal timber trade. If we do not curb those, the forests will surely die.”*

Qualitative data also revealed that awareness and education campaigns also emphasize prohibitions on hunting and grazing. This can be confirmed by the following selected statements from key informants and FGD participants:

“Awareness has been done and will still be continued to stop any hunting taking place in the forest because there are so many areas which are appropriate for ecotourism sites”.

“Illegal grazing tend to disrupt the growth of newly planted trees and therefore establishing new plantations becomes a challenge”.

“All the community members should take full responsibility of conserving this forests”

“The conservation of this forests has many benefits for us and the future generations and therefore it should not be taken for granted”.

Table 2 further indicates that some prohibitions were reported as familiar by only approximately half of the respondents, indicating a lower level of awareness regarding these specific regulations. These include prohibitions on unauthorized burning of forests (52.60%), mining and quarrying without authorization (50.97%), dumping of waste in forests (45.78%), as well as collecting forest products without proper authorization (42.86%). This study attributes these lower levels of awareness among respondents, to the infrequency of these incidents in the study area. Qualitative data obtained from FGDs shows that activities such as unauthorized burning, mining, quarrying, or waste dumping are less common occurrences in the study area. This was evidenced by the following statements:

“There are no minerals in this area, so the question of mining in the forest does not arise. However, I am aware that it is illegal to undertake mining activities in forests, because forests are prohibited areas”

“A few cases of waste dumping have been noticed and as community members we must be fully involved to curb such cases because our cattle which grazed inside the forest might be harmed by these toxic wastes. And people should know that it is also against the law”.



“Community members who are having bee hives inside the forest should conduct harvesting with the professionals persons to avoid fire break out inside the forest”

“The extraction of stones contributes to soil erosion in this area whereby during heavy down pour the community adjacent to the forests are mostly affected”.

The above mentioned finding corresponds with results of studies from elsewhere, which show that the prevalence of certain prohibited activities may vary across different regions or ecosystems. For instance, unauthorized burning may be more common in areas prone to wildfires (Barrett, 2023), or agricultural encroachment (FAO. 2020), while mining and quarrying activities may be concentrated in specific mineral-rich areas (Kariuki, M. 2021). According to Paumgarten, F. and Shackleton (2011)) geographical variations in prevalence of certain activities can influence community members' exposure to and awareness of different prohibitions related to those activities.

The low prevalence of dumping in the study area, as indicated by qualitative data above, imply that community members may have fewer opportunities to interact with enforcement efforts related to these infrequent activities. This is because the above mentioned activities may receive less attention from enforcement agencies, compared to those related to timber harvesting, farming and settlement within forests. According to Talpa (2022), security agencies tend to prioritize resource allocation for crimes that are more prevalent or frequent, due to limited resources in personnel and equipment. Similarly, Nwazi and Christopher (2021), found that in Guinea, enforcement efforts for forest conservation regulations often depend on the allocation of resources, including personnel, funding, and equipment. The author adds that if certain prohibited activities are perceived as less prevalent or less impactful on the forest ecosystem, enforcement agencies may allocate fewer resources to monitoring and addressing them, resulting in lower enforcement levels. Both, FATF (2021) and Ford et al. (2020), argue that law enforcement agencies tend to prioritize their efforts based on perceived threats. In this study, activities such as unauthorized logging or timber trade may be seen as a higher priority due to their immediate and visible impacts, leading to greater enforcement attention compared to other prohibited activities. This selective prioritization by enforcement agencies may result in inadequate monitoring and enforcement. As such, based on Augustus (2023), who argues that increased visibility of enforcement contributes to increased awareness among community members, this study posits that community members are less aware of these prohibitions because they receive less attention from enforcement agencies.

This study also argues that due to the infrequency of incidences such as burning, mining and dumping, community members may have fewer opportunities to encounter awareness campaigns targeting the said activities. This is because governmental and non-governmental conservation agencies may not prioritize these aspects in their outreach programs. Prohibitions related to activities like logging or cultivation in forests may receive more attention and visibility through awareness campaigns, educational programs, and enforcement efforts by government agencies and conservation organizations. In contrast, regulations about



unauthorized burning, mining, quarrying, or waste dumping may receive less emphasis in awareness-raising initiatives, contributing to lower levels of awareness among community members. Indeed, this was confirmed by key informants, who said that they usually mention these prohibitions just in passing, to as to get adequate time to concentrate on illegal timber trade. In the words of one of the key informants:

“Extracting stones of less than ten tones cannot have much impact as compared to cutting down standing trees”.

Additionally, some prohibited activities, such as unauthorized dumping within forests, may be more challenging to detect and monitor compared to others. Limited surveillance infrastructure, remote locations, and lack of community reporting mechanisms can hinder enforcement agencies' ability to identify and respond to these incidents effectively. Furthermore, effective enforcement of forest conservation regulations often relies on collaboration and support from local communities. However, if community members are less aware of certain prohibitions, they may be less likely to report violations or cooperate with enforcement authorities, further limiting the effectiveness of enforcement efforts. This insight was gained from a key informant from the Kenya Forest Service (KFS), who said:

“The forest community has been very cooperative in supporting our conservation efforts. We always receive tip-offs from community members about illegal logging, and timber consignments being ferried from this area. However, I have personally never received any tip-off on illegal dumping.”

Sources of information on forest conservation laws and regulations

Respondents were also asked to freely list their sources of information on forest conservation laws, and their responses are presented in Table 3.

Table 3. Sources of Information on Forest Conservation Laws: Community Perspectives		
Sources of Information	F	%
Social circles, including friends and relatives	261	84.74
Announcements at funerals	207	67.21
Social Media	131	42.53
Seminars, workshops, and training	121	39.29
School	119	38.64
Mainstream media, including newspapers, radio and TV	109	35.39
Community Barazas	98	31.82
Other sources	37	12.01
Community barazas	28	9.09



Table 3 provides insight into the diverse sources of information on forest conservation laws accessed by the respondents. As can be seen, 12.01% of the respondents mentioned a variety of channels through which they accessed information on forest conservation laws. These varied from door-to-door outreaches to informal groups such as youth and women groups, church meetings, and local extension services, among others. All these were collapsed into the category labeled "other sources". However, a vast majority of respondents (84.74%) identified social circles, including friends and relatives, as their main source of information. This finding corresponds with Kaczan (2020), who also found that social circles are the main source of information on forest conservation policies.

Nonetheless, while social circles play a significant role in information sharing within communities, their informal nature and potential for misinformation might have several implications. For instance, according to Shivachi and Ziz (2021), information shared within social circles is often informal and may lack accuracy or verification. The authors posit that while friends and relatives can serve as valuable sources of information, there is a risk of misinformation being propagated through gossip, rumors, or personal opinions. Similar perspectives are presented by, Busch and Ferretti-Gallon (2023), who argue that information shared within social circles may be influenced by personal biases, subjective interpretations, or incomplete understanding of matters, in the case of this study, of forest conservation laws. Thus, misunderstandings or misinterpretations of legal regulations may be perpetuated, leading to inaccurate perceptions or beliefs among community members.

Relatedly, Chan and Higham (2023), argues that unlike formal sources of information, social circles lack mechanisms for accountability or fact-checking. There may be minimal scrutiny or validation of information shared within personal networks, increasing the likelihood of misinformation going unchecked. Similarly, Malcolm (2023), avers that social circles can function as echo chambers, where individuals are exposed to information that aligns with their existing beliefs or perspectives. This can reinforce confirmation bias and hinder critical evaluation of information, making it challenging to discern between accurate and misleading content.

Further to this, Shivachi and Ziz (2021), argue that as information is passed from one person to another within social circles, there is a risk of miscommunication or distortion of facts. This can be especially the case, in relation to forest conservation law, where complex legal concepts or technical terminology related to forest conservation laws may be simplified or misrepresented, leading to misunderstandings or confusion among community members. Dentith (2023), also argues that misinformation circulating within social circles can influence community attitudes and behaviors towards forest conservation. Incorrect beliefs or misconceptions about legal regulations may undermine compliance with conservation measures or contribute to conflicts between conservation objectives and community interests.

Given the prevalence of social circles as a primary source of information on forest conservation law in the study area, there is a likelihood that specific details about conservation

laws and regulations could be distorted. Indeed, qualitative data confirmed this, as evidenced by the following statements from FGDs:

“People are only allowed to graze their animals in the forest but goats are excluded because they feed on leaves and therefore, the newly planted plantations may not survive”.

“Fuelwood collected from the forest should only be the size that does not need any tool to cut, but instead break using normal hands. And to add on that, no one is allowed to climb a tree while collecting fuelwood. Collect what is dead and lying on the ground”.

“Waste products from home should not be carried and dumped inside the forest and therefore this means one should not be inside the forest past or before the required hours without apparent reason”.

“Any forest produce should not come out of the forest without authorization and this include grass. Also brings no illegal cultivation is allowed and therefore due process must be followed”.

Table 3 also shows that announcements at funerals were also identified as an information source by more than two-thirds (67.21%) of the respondents. The inclusion of funerals as a source of information highlights the cultural significance of such gatherings as platforms for community communication. It suggests that community members utilize social gatherings to discuss not only personal matters but also important community issues, including forest conservation.

Nonetheless, while funerals may serve as cultural platforms for community communication, their time-constrained nature poses challenges for effectively conveying detailed information on forest conservation laws. The time constraints during funeral programs can impact the thoroughness and effectiveness of conveying forest conservation laws and regulations, potentially affecting the general awareness of these laws in the community. This was confirmed by one key informant from the Kenya Forest Service (KFS), who said:

“There are some laws which are in place and should be implemented without compromising anybody, but being that we are in a mourning mood, we shall create the awareness in another forum where people will be in their real mind. This may include, unauthorized farming in the forest”. Similar sentiments were presented by a key informant who was an assistant chief, who said:

“The growing of Njaga is becoming too common within the forests and this contributes to high rate of drug and substance abuse amongst youths”.

The presence of social media as a source of information, as indicated in Table 4.4, reflects the increasing influence of digital platforms in disseminating knowledge about forest conservation laws. Table 3 also shows that approximately two-fifths (42.53%) of the respondents identified social media as an information source for forest conservation laws. The presence of social media as a source of information on forest conservation laws, while



significant, is accompanied by both advantages and disadvantages. One of the main advantages is the wide reach of social media. Social media platforms have a vast user base, allowing information to reach a large and diverse audience quickly and efficiently (GSMA, 2021). This can enable the widespread dissemination of conservation messages to individuals across different geographic locations and demographic groups. Qualitative data further revealed that the most common social media platform in the study area was WhatsApp, which, according to Gao (2023), has a broad user base, encompassing individuals across different age groups, geographic locations, and socioeconomic backgrounds. In the study area, this wide reach could ensure that information on forest conservation laws can reach a diverse audience, including those with limited access to other communication channels.

According to Surucu-Balci and Balci (2023), social media offers convenient access to information anytime, anywhere, using various devices such as smartphones, tablets, and computers. Users can engage with content at their convenience, making it accessible to individuals with busy schedules or limited access to traditional information sources (Apeti & Edoh, 2023). Social media also facilitates interactive communication and engagement between content creators and users, fostering dialogue, discussion, and sharing of ideas related to forest conservation (AFF, 2021). Users can participate in online forums, comment on posts, and share content with their networks, promoting community involvement and awareness-raising efforts (Youth Population Trends and Sustainable Development, 2023). For instance, WhatsApp, which was identified as the most common platform, enables real-time communication, allowing individuals to receive information on forest conservation laws promptly (Nanjala & Nyabola 2023). This implies that messages can be delivered instantly to large groups of recipients, facilitating rapid dissemination of important updates, announcements, or educational content. The relevance of social media as a communication channel in the study area was confirmed by the following statements by key informants and FGD participants:

“In this 21st century, a lot of information are within our reach and does not need a lot of consultations as was in some previous years. For instance, The FCMA 2016 which is in use can easily be shared to a group of individuals through WhatsApp and immediately the message is home”.

“A WhatsApp group can accommodate a big number as compared to a clan group and this makes information reach many people within a very short time and is acted upon immediately”.

“Any unauthorized activity identified within the forest is easily reported via WhatsApp and acted upon with immediate effect”.

“Through the WhatsApp platform, even the people who are in isolated areas where mode of transport at times is a challenge can get the information and work on it as appropriate”.

Nevertheless, while social media offers numerous advantages for disseminating information on forest conservation laws, its effectiveness is tempered by various challenges. The first



major challenge is misinformation. According to Ahmad et al. (2020), social media platforms are susceptible to the spread of misinformation, rumors, and false information due to the rapid and unfiltered nature of content sharing. Misleading or inaccurate information about forest conservation laws can proliferate quickly, leading to confusion, mistrust, and misperceptions among users. Relatedly, Beisecker et al. (2022), argue that the abundance of information on social media can overwhelm users and make it challenging to discern credible sources from unreliable ones. Users may encounter conflicting or contradictory information on forest conservation laws, making it difficult to form accurate perceptions or take meaningful action. Furthermore, access to social media platforms may be limited by factors such as internet connectivity, digital literacy, and socioeconomic status, creating disparities in information access and digital inclusion (Matli & Ngope 2020). Therefore, individuals without internet access or technological literacy may be excluded from accessing information on forest conservation laws through social media channels.

Table 4.4 also reveals that only slightly more than one-third of the respondents (39.29%, 38.64%, and 35.39% respectively) mentioned seminars, workshops, and training, school, and mainstream media respectively, as a source of information on forest conservation laws. Seminars, workshops, training sessions, schools, and mainstream media are considered more reliable sources of information on forest conservation laws due to their potential to provide detailed and evidence-based content. However, the fact that only slightly more than one-third of the respondents mentioned these sources indicates certain challenges and implications.

First, this finding suggests that not all community members have access to or participate in educational events like seminars. Limited availability, geographic constraints, scheduling conflicts, or other barriers may prevent some individuals from attending such sessions, thereby reducing their exposure to detailed information on forest conservation laws. Indeed, one of the FGD participants said: *“Only a few people get to be invited to these seminars, and because they usually have a small allowance, getting invited can be very tricky. The same people will attend all the seminars, from forest conservation to HIV”*

If the same individuals consistently attend these events, there may be limited outreach to a broader segment of the community. This can result in certain groups or demographics being underrepresented or excluded from accessing information on forest conservation laws, leading to disparities in awareness and knowledge within the community. While consistent attendance may deepen the knowledge and understanding of forest conservation laws among repeat attendees, it may also reinforce existing knowledge and perspectives rather than reaching new audiences or fostering diverse viewpoints. This can create echo chambers where information is circulated among a homogeneous group, limiting exposure to alternative perspectives or innovative ideas.

The inclusion of schools as a source of information indicates the potential for formal education to disseminate knowledge about forest conservation laws. However, the relatively low percentage of respondents mentioning schools suggests that there may be challenges within the education system, such as outdated curricula, limited resources, or inadequate emphasis



on environmental education. The mention of mainstream media, including newspapers, radio, and television, as a source of information on forest conservation laws highlights the role of mass media in shaping public awareness. However, the low percentage of respondents citing mainstream media suggests changes in media consumption patterns, with digital and social media platforms increasingly supplanting traditional sources of news and information.

While seminars, workshops, training sessions, schools, and mainstream media are generally perceived as reliable sources of information, their effectiveness in communicating forest conservation laws depends on factors such as trust and credibility. Community members may prioritize information obtained through personal networks, cultural practices, or trusted sources, influencing their perceptions of the reliability and relevance of formal educational initiatives or media content. This argument is anchored on the following sentiments by key informants and FGD participants:

“Some of these information can only be believed if given by the clan elders such that if it does not happen he the one to blame. For instance, when we are about to experience long period of drought no lighting of fire should take place inside the forests even if it is harvesting of honey”.

“For us to get reliable information on matters pertaining conservation laws, we need to be sitting under such bit trees like, Ng’ou because the ancestors shall also dwell amongst us as we deliberate on the same”.

“When we are discussing matters of development and our women are amongst us, they should be listeners and put what the resolutions deliberated on into practice like, they should only go with a rope to collect fuelwood and no any other tool so that to conserve our forest and at the same time implementing the policies put in place”.

“For all cattle grazed in the forest, the owners should not leave them un attended because we would want to know which ones graze in young plantations which derail the establishment of new ones. Clan elders can easily identify which cattle comes from their locality and the same information can be shared to the concerned body”.

The inclusion of schools as a source of information underscores the role of formal education in promoting awareness of forest conservation laws among younger generations. It highlights the importance of incorporating environmental education and conservation principles into school curricula to foster a culture of environmental stewardship from an early age.

Traditional forms of media, such as newspapers, radio broadcasts, and television programs, continue to play a significant role in disseminating information about forest conservation laws. These mass communication channels reach broad audiences and contribute to raising awareness about environmental issues.

Notably, 31.82% of the respondents mentioned community *barazas* as a source of information on forest conservation laws. Community *barazas* are formal community gatherings, typically organized by an area chief or assistant chief, to discuss pertinent issues in a community



(Mwamidi, et al., 2023). Community *barazas* might be a reliable source of information because some of these community gatherings may be called specifically to address forest conservation matters, and they may be attended by experts or enforcement officers (AFF, 2021). Therefore, the *barazas* provide forums for interactive information sharing and serve as important forums for discussing local issues, including forest conservation (UN, 2021). The inclusion of *barazas* as a source of information highlights the value of community-led initiatives and participatory decision-making processes in raising awareness and promoting dialogue on conservation matters. However, the low mention suggests potential missed opportunities for interactive learning and knowledge dissemination within the community.

The low mention may be associated with low attendance, based on (CIDP, 2023), whose study on community participation in Homabay County reported that community *barazas* have very low attendance. Low attendance may stem from inadequate awareness and promotion within the community. Homa Bay County (2021) also found that *barazas* may coincide with other community events, work commitments, or household responsibilities, leading to scheduling conflicts and low attendance. However, NHC and CGHB (2022), argues that low attendance may reflect a lack of perceived relevance or interest among community members. The authors posit that *barazas* may struggle to attract attendees if community members do not feel a sense of ownership or empowerment in decision-making processes.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the study provides insights into the awareness of forest conservation laws among the forest community, examining both the level of familiarity with specific regulations and the sources of information accessed. The findings reveal a high level of awareness regarding prohibitions related to logging, timber trade, cultivation, and construction within forests. These regulations are prioritized for enforcement by security agencies and are actively disseminated through various channels, including community engagement initiatives, educational programs, and enforcement efforts.

Social circles, announcements at funerals, social media, educational events, schools, mainstream media, and community *barazas* emerged as significant sources of information on forest conservation laws. While informal sources play a predominant role in information sharing within the community, formal channels offer structured and potentially more reliable avenues for learning about forest regulations.

The study highlights the importance of balancing the use of informal and formal information sources to ensure comprehensive and accurate knowledge dissemination within the community. Strategies for improving awareness of forest conservation laws should focus on strengthening formal education initiatives, enhancing outreach through mainstream media, and promoting community participation in *barazas*.



Based on the findings, several recommendations can be made to improve awareness of forest conservation laws among the forest community:

The government should facilitate more community barazas and similar gatherings to create forums for interactive learning and dialogue on forest conservation issues. Ensure that these events are well-publicized and inclusive to encourage broad participation from community members.

Change agents should increase accessibility to seminars, workshops, and training sessions on forest conservation by addressing barriers such as scheduling conflicts and limited outreach. Ensure that these events are inclusive and reach diverse segments of the community. The change agents should also implement programs to enhance digital literacy and critical thinking skills, particularly among youth, to help individuals navigate and evaluate information on social media. This can empower community members to discern credible sources and identify misinformation.

Change agents should also engage local leaders, including clan elders and community chiefs, to disseminate accurate information about forest conservation laws and reinforce compliance within their respective communities. Leverage their influence and credibility to promote responsible behavior.

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