Strategies Employed by the Government in Promoting Sustainable Conservation and Management of Kakamega Tropical Rainforest on Household Livelihoods

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ABSTRACT

This study assessed the strategies employed by the government in promoting sustainable conservation and management of Kakamega Tropical Rainforest on household livelihoods. The study applied the theories of Firey's (1960) Man, Mind and Land: A Theory of Resource Use and Sustainable Livelihoods Approach. The study was conducted in Shinyalu, Hamisi and Malava Sub-counties in Vihiga and Kakamega Counties. The study was descriptive and explanatory in design and relied on a mixed methods methodology. The target population was households in the selected communities neighbouring Kakamega tropical rainforest in western Kenya. Methods of data collection included: Questionnaire, Key Informant Interviews, Focus Group Discussions and Direct Observation. The questionnaire provided quantitative data, which were fed in SPSS version 23.0. Qualitative data obtained from the key informant interviews and the focus group discussions was fed in NVivo 11. A rising from the research findings, it can be concluded that; The strategies employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods in Western Kenya, include; incentive-based approach of the Forest Department (FD), protectionist approach of the Kenya Wildlife Service (KWS), a quasi-private incentive-based approach of Quakers Church Mission (QCM), community participation in forest conservation, and exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. The study recommends that; The government should carry out more research and consultation on strategies to use in sustainable conservation and management of Kakamega tropical rainforest.

Keywords: Strategies, Sustainable conservation and management and Household livelihoods.

INTRODUCTION

The Government of Kenya has adopted various strategies to promote sustainable conservation and management of forest resources while recognizing the socioeconomic needs of forest-adjacent communities. These strategies include participatory forest management, forest law enforcement, reforestation and restoration, livelihood diversification, environmental education, forest zoning, ecotourism promotion, and collaboration between government agencies and local communities. The approaches are particularly important in Kakamega Tropical Rainforest because the forest provides numerous ecosystem services that contribute directly and indirectly to household livelihoods. Recent evidence demonstrates that communities surrounding Kakamega Forest derive substantial benefits from firewood, medicinal plants, fruits, vines, timber, mushrooms and cultural ecosystem services (Osewe et al., 2025a; Popa et al., 2025).

The relationship between conservation and household livelihoods can also be understood through the ecosystem services provided by Kakamega Forest. **Aseta, Omondi and Nunow (2020a)** examined ecosystem services provided by Kakamega Tropical Rainforest and found that the forest provides numerous services to surrounding communities. The study was based on households living within 10 km of the forest edge and forest officials. The authors concluded that conservation of Kakamega Forest was important because of its contribution to surrounding communities and its role in climate adaptation and mitigation. Although this study predates the most recent literature, it remains highly relevant to the present research because it establishes the empirical relationship between forest conservation and household livelihood resources. It provides a useful foundation for examining whether subsequent government strategies have enhanced or reduced household access to these ecosystem services.

Participatory Forest Management (PFM) is one of the major strategies adopted by the Government of Kenya to promote sustainable forest conservation while incorporating local communities into forest governance. The approach was formally introduced through the Forests Act of 2005 and subsequently strengthened under the Forest Conservation and Management Act of 2016. The Act recognizes public participation and community involvement as guiding principles of forest management and provides for the formation of Community Forest Associations (CFAs) to participate in conservation and management activities (Government of Kenya, 2016).

Under the Forest Conservation and Management Act (2016), CFAs can apply to participate in the conservation and management of public forests. Their responsibilities include protecting and managing forests, developing sustainable forest programmes, protecting sacred groves and protected trees, assisting in enforcement against illegal harvesting, participating in fire management and entering into partnerships that promote sustainable forest conservation (Government of Kenya, 2016). This framework provides an institutional basis for involving communities living around Kakamega Forest in conservation activities.

PFM is particularly relevant to Kakamega because local households depend heavily on the forest for livelihood resources. Popa et al. (2025), in a study involving 453 households around Kakamega Forest, identified 20 ecosystem services recognized by local communities, with firewood being particularly important. The study demonstrates that forest conservation cannot be separated from household livelihood needs because forest ecosystem services contribute directly to household welfare.

Importantly, **Aseta (2026)** provides recent empirical evidence directly linking stakeholder involvement in Kakamega Tropical Rainforest conservation with household livelihoods. The study assessed stakeholder involvement in conservation and management in Shinyalu, Hamisi and Malava sub-counties and examined its contribution to sustainable household livelihoods. Aseta (2026) applied Firey's Theory of Resource Use and the Sustainable Livelihoods Approach and used a mixed-methods research design. The study is particularly relevant because it demonstrates that stakeholder participation should be evaluated not only according to conservation outcomes but also according to its implications for household livelihood sustainability.

However, participation does not necessarily mean that communities have equal influence over forest decision-making. Recent research on Kenya's PFM framework found that although policy and legislation provide opportunities for community participation and benefit sharing, institutional arrangements and implementation practices can limit the effectiveness of community participation (Trees, Forests and People, 2025). This observation is relevant to Kakamega because Osewe et al. (2025b) found that allocation of harvesting rights to non-local community members was perceived as a major challenge, while poor households were more likely to perceive declining access to ecosystem services. Thus, PFM has the potential to improve both conservation and livelihoods, but its effectiveness depends on meaningful participation, equitable benefit sharing, transparency and recognition of the needs of vulnerable households.

The Government also promotes forest conservation through laws, regulations, monitoring and enforcement. The Forest Conservation and Management Act (2016) provides the legal framework for controlling forest resource utilization and prohibits activities that threaten forest resources. The Kenya Forest Service is mandated to manage public forests and regulate activities such as harvesting, grazing, cultivation and other forms of forest utilization (Government of Kenya, 2016).

Law enforcement is particularly important in Kakamega Forest because illegal logging, uncontrolled extraction and other anthropogenic pressures have contributed to forest degradation. Osewe et al. (2025b) found that illegal logging was perceived by local communities as the most significant threat to Kakamega Forest, while lack of awareness of conservation initiatives was another major challenge.

Government restrictions can contribute to forest recovery by reducing destructive resource extraction. However, strict enforcement can also have negative consequences for poor households that depend on forest resources for energy, food, medicine and income. Osewe et al. (2025b) found that poorer households were more likely to perceive declining ecosystem-service provision, suggesting that conservation restrictions may affect households differently depending on their level of dependence on forest resources. Therefore, effective law enforcement should be accompanied by alternative livelihood opportunities. Conservation policies that

simply restrict access without addressing household dependence on forest resources may unintentionally increase livelihood vulnerability. Sustainable conservation requires a balance between enforcement and socioeconomic support.

Reforestation and forest restoration are important government strategies for increasing forest cover, rehabilitating degraded areas and improving ecological functions. The Government of Kenya, through the Kenya Forest Service and other institutions, promotes tree planting, restoration of degraded forests and sustainable forest management as part of national environmental conservation efforts. The importance of restoration in Kakamega is underscored by evidence of historical forest-cover loss. Osewe et al. (2025b) report that Kakamega Forest lost approximately 826.6 hectares of forest cover between 2000 and 2020. The loss has been associated with population pressure and increasing demand for land and forest resources.

Forest restoration can contribute to household livelihoods by improving the availability of ecosystem services. Restored forests can provide fuel wood, medicinal plants, fruits, construction materials, water regulation, soil conservation and opportunities for tourism. Osewe et al. (2025a) demonstrated the substantial economic value of tangible ecosystem services derived from Kakamega Forest, including firewood, medicinal plants, fruits and vines. However, restoration programmes may initially impose costs on households when access to degraded areas is restricted. Moreover, planted trees require time before they produce significant livelihood benefits. Government restoration programmes should therefore incorporate short-term livelihood support and alternative income-generating activities to reduce the possibility that households will continue unsustainable extraction while waiting for restoration benefits.

Forest restoration is increasingly becoming a major component of Kenya's conservation strategy. **Obonyo, Agevi and Tsingalia (2023)** investigated above-ground carbon stocks and tree-species diversity in Kakamega and North Nandi forests. Their findings demonstrate the importance of maintaining tree diversity and forest carbon stocks in sustaining forest ecosystem functions. The findings provide ecological justification for government investment in restoration programmes. Restoration can also create livelihood opportunities for surrounding households through tree nurseries, seedling production, tree planting and forest maintenance.

Aseta's ecosystem-based adaptation research further supports restoration as a conservation strategy. His study identified restoration of highly degraded areas as one of the interventions through which forest ecosystems can contribute to climate adaptation.

Recent research by **Gitonga and Likhotio (2025)** found that CFAs can act as pathways for forest landscape restoration in the Kakamega Forest landscape. Their findings indicate that community participation and institutional factors influence the implementation of restoration activities. This demonstrates that government support for CFAs can contribute to both ecological restoration and community involvement in conservation.

The findings complement **Aseta (2026),** who emphasizes stakeholder involvement as an important component of sustainable conservation and household livelihood improvement. Taken together, the studies suggest that effective government conservation should move beyond physical protection of the forest to strengthening institutions that enable communities to participate in and benefit from conservation.

The Plantation Establishment and Livelihood Improvement Scheme (PELIS) is another government strategy intended to combine forest plantation establishment with household livelihood improvement. Under the scheme, communities can obtain temporary opportunities to cultivate agricultural crops in designated plantation areas during the establishment phase. The approach is intended to provide livelihood benefits while encouraging communities to participate in plantation management and forest restoration. The importance of PELIS to households around Kakamega is highlighted by Osewe et al. (2025b), who found that restrictions on maize cultivation under PELIS were perceived as an important challenge by local communities. This is significant because maize constitutes an important staple food for many households in the area. The findings suggest that government conservation interventions need to consider local food-security conditions. Although restricting agricultural activities may be necessary for forest restoration, restrictions that undermine household food production may generate resistance to conservation. PELIS would therefore be more effective if its

implementation ensured transparent land allocation, adequate community consultation and appropriate livelihood alternatives.

The strategy is consistent with Aseta's work because the underlying principle is that conservation is more sustainable when communities obtain livelihood benefits from participating in environmental management. **Aseta (2026)** specifically emphasizes the relationship between stakeholder involvement and sustainable household livelihoods in Kakamega.

The promotion of alternative livelihood activities is another important strategy for reducing pressure on Kakamega Forest. The underlying principle is that households with diversified sources of income and food are less dependent on harvesting forest resources. Alternative livelihoods may include agroforestry, beekeeping, tree nursery establishment, livestock keeping, small-scale enterprises, ecotourism and sustainable production of non-timber forest products. The economic importance of forest products to households around Kakamega demonstrates the need for livelihood diversification. Osewe et al. (2025a) estimated the annual monetary value of selected tangible ecosystem services at approximately US$283,362, with firewood, vines, fruits and medicinal plants making significant contributions. Such findings demonstrate that alternative livelihood programmes should not simply eliminate forest dependence but should provide sustainable substitutes for the income and subsistence benefits currently obtained from the forest. Alternative livelihood programmes may also involve commercialization and value addition. Where communities are supported to process and market legal forest-based products sustainably, they may obtain greater economic returns without increasing extraction pressure. This can create a positive relationship between conservation and household income.

Environmental education is another strategy through which government agencies and conservation partners encourage sustainable resource use. **Were, Kassilly and Ahaya (2024)** demonstrate that indigenous Abaluhyia worldviews can contribute to communication and conservation of Kakamega Forest.

This finding complements **Aseta et al. (2020)**, whose work emphasizes the importance of understanding the relationship between local communities and forest ecosystem services. Combining indigenous knowledge with formal environmental education can increase community understanding of conservation and encourage sustainable utilization of forest resources. The implication is that government conservation programmes should recognize local knowledge rather than relying exclusively on top-down approaches. Indigenous knowledge can help communities understand medicinal plants, wild foods, sacred sites and other culturally important forest resources.

Environmental education is an important government strategy for increasing community awareness about the ecological and socioeconomic importance of forests. Through public awareness programmes, schools, CFAs and environmental agencies, communities can be educated about forest regulations, biodiversity conservation, sustainable harvesting and the long-term consequences of forest degradation. The importance of environmental awareness in Kakamega is also demonstrated by Osewe et al. (2025b), who identified inadequate awareness of conservation efforts as one of the major challenges affecting forest management. This indicates that conservation policies may have limited effectiveness where communities do not adequately understand their objectives, rules and expected benefits.

Environmental education can also strengthen community participation by enabling households to understand the relationship between forest conservation and ecosystem services such as water regulation, soil conservation, biodiversity, climate regulation and livelihood resources. However, awareness programmes are most effective when accompanied by tangible economic benefits and opportunities for community participation.

Forest zoning is used by government agencies to allocate different parts of the forest for particular management purposes. Sensitive areas may be designated for strict protection, while other areas can be used for controlled livelihood activities, plantations, tourism or restoration. Zoning enables managers to protect ecologically important areas while allowing sustainable use in appropriate locations. In Kakamega, zoning is important because of the competing demands for conservation and livelihood resources. Osewe et al. (2025b) reported conflicts associated with access to harvesting rights, agricultural restrictions and the electric fence

around the forest buffer zone. These findings demonstrate that zoning and access restrictions can have different consequences for different socioeconomic groups.

Effective zoning should therefore involve communities in identifying livelihood-use areas and conservation areas. It should also provide clear information concerning access rights, benefit sharing and enforcement procedures. Without community involvement, zoning may be perceived as an externally imposed restriction rather than a strategy for sustainable resource management.

Ecotourism provides an opportunity to link forest conservation with household income. Kakamega Forest possesses significant biodiversity, cultural and recreational resources that can support tourism activities. Government support for ecotourism can generate employment and income through tour guiding, accommodation, transport, food vending, handicrafts and cultural activities. The Forest Conservation and Management Act (2016) provides for regulation and promotion of ecotourism and cultural activities in forests (Government of Kenya, 2016). The potential for tourism-based livelihood development is important because conservation is more likely to receive community support when households derive visible economic benefits from maintaining the forest. Nevertheless, tourism benefits need to be equitably distributed. If tourism revenue remains concentrated among government agencies or private operators, local communities may have limited incentives to support conservation.

Payment for Ecosystem Services (PES) represents an emerging strategy for connecting conservation with livelihood improvement. Under PES, individuals or communities that protect ecosystem services can receive financial or other forms of compensation. This approach can provide incentives for communities to conserve forests rather than converting them to alternative land uses. Recent evidence from Kakamega provides strong support for exploring PES. Osewe et al. (2025a) found substantial economic values associated with tangible and intangible ecosystem services and reported that a large proportion of respondents expressed willingness to pay for cultural ecosystem services. The authors consequently recommended socially inclusive PES schemes as a possible pathway for livelihood improvement and sustainable forest management. PES could be particularly beneficial for poorer households if payment mechanisms are transparent and accessible. However, effective implementation would require clear identification of ecosystem-service providers and beneficiaries, reliable monitoring systems and equitable distribution of payments.

Sustainable management of Kakamega Forest requires collaboration among national government agencies, county governments, local communities, CFAs, research institutions, non-governmental organizations and development partners. The Forest Conservation and Management Act (2016) explicitly emphasizes public participation, community involvement and cooperation between national and county governments (Government of Kenya, 2016).

Institutional collaboration is important because different agencies possess different mandates and resources. For example, Kenya Forest Service has an important role in forest management, while Kenya Wildlife Service is involved in wildlife and conservation functions. Recent research indicates that Kakamega Forest has been managed under different institutional approaches, with KFS employing PFM and KWS applying a more command-and-control approach in areas under its mandate (Osewe et al., 2025b). Weak coordination can create confusion concerning access rights, harvesting regulations and responsibility for conservation. Strengthening institutional coordination can therefore improve enforcement, reduce conflicts and ensure that household livelihood concerns are incorporated into conservation planning.

The literature demonstrates that the Government of Kenya has adopted a broad range of strategies for promoting sustainable conservation and management of Kakamega Tropical Rainforest. These include participatory forest management, community forest associations, law enforcement, restoration and tree planting, PELIS, alternative livelihood programmes, environmental education, forest zoning, ecotourism and emerging payment-for-ecosystem-services mechanisms.

However, the literature also reveals that the outcomes of these strategies are not uniform across households. Wealthier and poorer households may experience conservation interventions differently because of differences in their dependence on forest resources. Osewe et al. (2025b) found that poorer households were more likely to

perceive reductions in ecosystem-service provision, while restrictions on harvesting rights, PELIS activities and access to the forest were identified as important community concerns.

Similarly, Popa et al. (2025) demonstrated that local communities recognize numerous ecosystem services from Kakamega Forest, emphasizing the close relationship between forest conservation and household welfare. Osewe et al. (2025a) further demonstrated the considerable economic value of forest products and recommended inclusive approaches such as PES to strengthen livelihood outcomes while promoting conservation.

Despite these contributions, there is still a need for an integrated assessment of how government conservation strategies influence household livelihoods in communities surrounding Kakamega Tropical Rainforest. Existing studies tend to examine individual dimensions such as ecosystem services, PFM, threats to the forest or community perceptions. There is limited empirical evidence comparing the effectiveness of different government strategies and determining which strategies produce the greatest positive livelihood outcomes while maintaining forest conservation.

This study therefore sort to fill this gap by assessing the strategies employed by the Government of Kenya in promoting sustainable conservation and management of Kakamega Tropical Rainforest and determining their implications for household livelihoods. This study provides evidence that can assist government agencies and other stakeholders in designing conservation interventions that simultaneously improve forest sustainability and the socioeconomic wellbeing of forest-adjacent communities.

RESEARCH METHODOLOGY

Research Design

The research described here was descriptive and cross-sectional in design and it relied on a mixed methods methodology. The researcher surveyed the general population over their opinions and views about strategies employed by the government in promoting sustainable conservation and management of Kakamega Tropical Rainforest on household livelihoods. The researcher also deeply interrogated key informants and explored focus group discussions with experts on the matter of strategies employed by the government in promoting forest conservation and report their narratives.

Study Approach

The approach adopted for this study was essentially bottom-up in the sense that it takes into account the knowledge based practices and perceptions of the target beneficiaries by gender and status. This approach helped in generating data on experiences and understanding of the strategies employed by the government in forest conservation on the sustainability of household livelihoods. The study was a multi-stakeholder survey taking into consideration a myriad of factors including patriarchy, gender roles, age factors, lifestyle factors, technological factors, location specific factors and social status in understanding and addressing forest conservation.

Sampling

Using the Morgan & Krejcie (1970), formula for sample estimation, the researcher selected 384 cases using stratified simple random sampling for questionnaire administration to the general population. Sixteen focus group discussions were planned and held in communities, 8 in each of the 2 ethnic groups. Participants in each FGD were recruited purposively using convenience sampling. In addition, 12 direct and structured observations were made, 6 in each ethnic set up. Finally, 10 purposively enlisted key informants were interviewed in each set up to offer a total of 20 key informants. Key informants were be enlisted using purposive sampling, based on objective of the interviews.

DATA PRESENTATION AND INTERPRETATION OF FINDINGS

Strategies Employed by the Government in Promoting Sustainable Conservation and Management of Kakamega Tropical Rainforest on Household Livelihoods

The objective of the study was to examine the strategies employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods in Western Kenya. To achieve this, both the heads of households and government officials' respondents were asked to indicate their level of agreement/disagreement on the statements in table 1 and table 2 and the findings were as follows;

Table 1: Strategies Employed by the Government in Promoting Sustainable Conservation and Management of Kakamega Tropical Rainforest on Household Livelihoods (Heads of Households)

Responses	Strongly Agree	Agreed	Disagree	Strongly Disagree
Incentive-based approach of the Forest Department (FD)	100(26%)	200(52.1%)	50(13%)	34(8.9%)
A protectionist approach of the Kenya Wildlife Service (KWS)		300(78.1%)	50(13%)	34(8.9%)
A quasi-private incentive-based approach of Quakers Church Mission (QCM).	100(26%)	250(65.1%)	17(4.4%)	17(4.4%)
Community participation in forest conservation		350(91.1%)	10(2.6%)	24(6.3%)
Exploring farm forestry	250(65.1%)	100(26%)	34(8.9%)	

Source: Research findings (2021)

The study findings established that majority 200(52.1%) of the heads of households agreed that incentive-based approach of the Forest Department (FD) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 100(26%) strongly agreed, 50(13%) disagreed, while 34(8.9%) of them strongly disagreed as shown in table 1 above. This shows that most of the heads of households agreed that incentive-based approach of the Forest Department (FD) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This is consistent with Osewe et al. (2025a) who estimated the annual monetary value of selected tangible ecosystem services at approximately US$283,362, with firewood, vines, fruits and medicinal plants making significant contributions. Such findings demonstrate that alternative livelihood programmes should not simply eliminate forest dependence but should provide sustainable substitutes for the income and subsistence benefits currently obtained from the forest.

The study findings also established that majority 300(78.1%) of the heads of households agreed that a protectionist approach of the Kenya Wildlife Service (KWS) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 50(13%) disagreed, while 34(8.9%) of them strongly disagreed as shown in table 1 above. It means that most of the heads of households agreed that a protectionist approach of the Kenya Wildlife Service (KWS) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This finding concurs with The Government of Kenya (2016) assertions that, The Forest Conservation and Management Act (2016) provides the legal framework for controlling forest resource utilization and prohibits activities that threaten forest resources. The Kenya Forest Service is mandated to manage public forests and regulate activities such as harvesting, grazing, cultivation and other forms of forest utilization.

The study findings further established that majority 250(65.1%) of the heads of households agreed that a quasi-private incentive-based approach of Quakers Church Mission (QCM) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 100(26%) strongly agreed, 17(4.4%) disagreed, while 17(4.4%) of them strongly disagreed as shown in table 1 above. It implies that most of the heads of households agreed that a quasi-private incentive-based approach of Quakers Church Mission (QCM) is a strategy employed by the government in

promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. The strategy is consistent with Aseta's work because the underlying principle is that conservation is more sustainable when communities obtain livelihood benefits from participating in environmental management. **Aseta (2026)** specifically emphasizes the relationship between stakeholder involvement and sustainable household livelihoods in Kakamega

The study findings revealed that majority 350(91.1%) of the heads of households agreed that community participation in forest conservation is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 24(6.3%) strongly disagreed, while 10(2.6%) of them disagreed as shown in table 1 above. It shows that most of the heads of households agreed that community participation in forest conservation is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. The findings complement **Aseta (2026),** who emphasizes stakeholder involvement as an important component of sustainable conservation and household livelihood improvement. Taken together, the studies suggest that effective government conservation should move beyond physical protection of the forest to strengthening institutions that enable communities to participate in and benefit from conservation.

The study findings further revealed that majority 250(65.1%) of the heads of households strongly agreed that exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 100(26%) agreed, 34(8.9%) while 34(8.9%) of them disagreed as shown in table 1 above. It means that most of the heads of households strongly agreed that exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This confirms assertions by Osewe et al. (2025b), who found that restrictions on maize cultivation under PELIS were perceived as an important challenge by local communities. This is significant because maize constitutes an important staple food for many households in the area. The findings suggest that government conservation interventions need to consider local food-security conditions. Although restricting agricultural activities may be necessary for forest restoration, restrictions that undermine household food production may generate resistance to conservation. PELIS would therefore be more effective if its implementation ensured transparent land allocation, adequate community consultation and appropriate livelihood alternatives.

Table 2: Strategies Employed by the Government in Promoting Sustainable Conservation and Management of Kakamega Tropical Rainforest on Household Livelihoods (Government Officials)

Responses	Strongly Agree	Agreed	Disagree	Strongly Disagree
Incentive-based approach of the Forest Department (FD)		16(80%)	2(10%)	2(10%)
A protectionist approach of the Kenya Wildlife Service (KWS)	18(90%)		2(10%)	
A quasi-private incentive-based approach of Quakers Church Mission (QCM).	16(80%)		3(15%)	1(5%)
Community participation in forest conservation	14(70%)		4(20%)	2(10%)
Exploring farm forestry	12(60%)		5(25%)	3(15%)

Source: Research findings (2021)

The study findings revealed that majority 16(80%) of the government officials agreed that incentive-based approach of the Forest Department (FD) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 2(10%) disagreed, while 2(10%) strongly disagreed as shown in table 2 above. It implies that most of the government officials agreed that incentive-based approach of the Forest Department (FD) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This also confirms assertions by Osewe et al. (2025a) who estimated the annual monetary value of selected tangible ecosystem services at approximately US$283,362, with firewood, vines, fruits and medicinal

plants making significant contributions. Such findings demonstrate that alternative livelihood programmes should not simply eliminate forest dependence but should provide sustainable substitutes for the income and subsistence benefits currently obtained from the forest.

The study findings also revealed that majority 18(90%) of the government officials strongly agreed that a protectionist approach of the Kenya Wildlife Service (KWS) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods, while 2(10%) of them disagreed as shown in table 2 above. It shows that most of the government officials strongly agreed that a protectionist approach of the Kenya Wildlife Service (KWS) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This finding also concurs with The Government of Kenya (2016) assertions that, The Forest Conservation and Management Act (2016) provides the legal framework for controlling forest resource utilization and prohibits activities that threaten forest resources.

The findings further revealed that majority 16(80%) of the government officials strongly agreed that a quasi-private incentive-based approach of Quakers Church Mission (QCM) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 3(15%) disagreed, while 1(5%) of them strongly disagreed as shown in table 2 above. It shows that most of the government officials strongly agreed that a quasi-private incentive-based approach of Quakers Church Mission (QCM) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. The strategy is also consistent with Aseta's work because the underlying principle is that conservation is more sustainable when communities obtain livelihood benefits from participating in environmental management. **Aseta (2026)** specifically emphasizes the relationship between stakeholder involvement and sustainable household livelihoods in Kakamega

The established that majority 14(70%) of the government officials strongly agreed that community participation in forest conservation is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 4(20%) disagreed, while 2(10%) of them strongly disagreed as shown in table 2 above. It implies that most of the government officials strongly agreed that community participation in forest conservation is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This is in agreement with **Aseta (2026)** who stated that stakeholder participation should be evaluated not only according to conservation outcomes but also according to its implications for household livelihood sustainability.

Finally, the study established that majority 12(60%) of the government officials strongly agreed that exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 5(25%) disagreed, while 3(15%) of them strongly disagreed as shown in table 2 above. Its shows that most of the government officials strongly agreed that exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. This also confirms assertions by Osewe et al. (2025b), who found that restrictions on maize cultivation under PELIS were perceived as an important challenge by local communities. This is significant because maize constitutes an important staple food for many households in the area. The findings suggest that government conservation interventions need to consider local food-security conditions. Although restricting agricultural activities may be necessary for forest restoration, restrictions that undermine household food production may generate resistance to conservation. PELIS would therefore be more effective if its implementation ensured transparent land allocation, adequate community consultation and appropriate livelihood alternatives.

SUMMARY OF THE FINDINGS

The objective of the study was to examine the strategies employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods in Western Kenya.

The study established that 52.1% of heads of households and 80% of government officials agreed that incentive-based approach of the Forest Department (FD) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods.

78.1% of heads of households and 90% of government officials agreed that a protectionist approach of the Kenya Wildlife Service (KWS) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 65.1% of heads of households and 80% of government officials agreed that a quasi-private incentive-based approach of Quakers Church Mission (QCM) is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods.

91.1% of heads of households and 70% of government officials agreed that community participation in forest conservation is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods. 65.1% of heads of households and 50% of government officials strongly agreed that exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods.

CONCLUSION OF THE STUDY

The strategies employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods in Western Kenya, include; incentive-based approach of the Forest Department (FD), protectionist approach of the Kenya Wildlife Service (KWS), a quasi-private incentive-based approach of Quakers Church Mission (QCM), community participation in forest conservation, and exploring farm forestry is a strategy employed by the government in promoting sustainable conservation and management of Kakamega tropical rainforest on household livelihoods.

RECOMMENDATIONS

The government should carry out more research and consultation on strategies to use in sustainable conservation and management of Kakamega tropical rainforest.

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