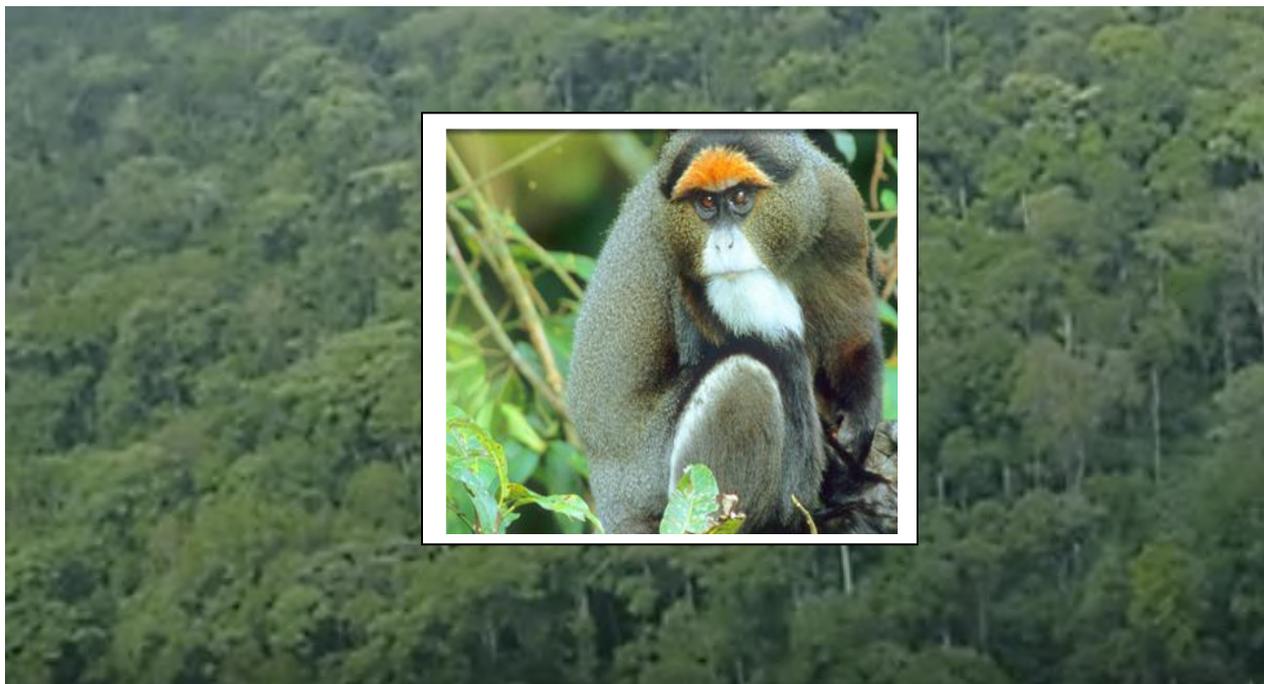




Environmental and Social Impact Assessment Study Report for the Proposed Kakamega Forest Conservation Fence Project.



:

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December 2019



CERTIFICATION

This EIA project report has been prepared in accordance with the Environmental Management and Coordination Act (EMCA) and the Environmental (Impact Assessment and Audit) Regulations 2003. The Kenya Wildlife Service (KWS) EIA team of experts conducted the study and prepared this report in collaboration with Kenya Forest Service, County government of Kakamega and County Government of Vihiga.

DECLARATION BY THE LEAD EIA/EA EXPERT:

I certify that the report presents an objective environmental and social assessment of the proposed Kakamega Forest Conservation Fence Project

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I hereby certify that the particulars given are correct and true to the best of my knowledge.

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On behalf of **Kenya Forest Service**

EXECUTIVE SUMMARY

This Environmental and Social Impact Assessment (ESIA) study describes the social ecological and economic implications for the proposed conservation electric fence project around Kakamega Forest. Fencing is an effective tool for limiting human and livestock encroachment to minimize degradation and promote natural forest regeneration and where a Protected Area has no clearly demarcated boundary, encroachment both intentional and unintentional commonly occur. Fences can control this problem by creating both a physical and a psychological boundary to discourage people and livestock from entering the forest at every point. The ultimate goal for the proposed fence barrier for Kakamega forest is to enhance conservation of the forest resources particularly the rich and unique biodiversity while promoting sustainable nature based enterprises in support of forest adjacent community livelihoods.

The Kakamega forest ecosystem transcends both Kakamega and Vihiga Counties and the proposed project is a collaborative initiative between the Rhino Ark Charitable Trust (RA), the County Government of Kakamega, County government of Vihiga, Kenya Forest Service (KFS), the Kenya Wildlife Service (KWS) and the forest adjacent communities. The forest is of National and Regional Value being the only remnants of the Guineo Congolian lowland rainforest belt that once spread Africa across the Equator. High human population density around the forest and the community dependency on the forest resources is threatening the forest health ecosystem. The fencing project is one subcomponent of the bigger programme concept geared towards enhancing conservation of Kakamega Forest for nature and people. The overall goal is to protect the forest against encroachment, degradation, and to reduce human-wildlife conflicts.

Since the inception of the Environmental Management and Coordination Act (EMCA) CAP 387, it has now become a legal requirement for all projects listed in the second schedule to undertake Environmental Impact Assessment (EIA). This is to ensure environmental concerns are integrated the planning and implementation of development projects and not as an afterthought. This minimizes land use conflicts within the area surrounding the project and promotes sustainable development. The proposed project concept was jointly developed through a dialogue between Rhino Ark Charitable Trust, the Ministry of Environment and Forestry, County government of Kakamega, County government of Vihiga. Kenya Forest Service and the forest adjacent community through Community Forest Associations. Kenya Wildlife Service as a firm of expert registered and authorized to undertake EIA was tasked to lead the ESIA activity in close collaboration with KFS and the two county governments.

This Environmental Impact Assessment study report is a tool that strives to ensure there is a balance between forest conservation and the social cultural concerns relating to the project.

The objective of the ESIA is to identify impacts that the project may have on the biophysical and socio economic environment making reference to the baseline conditions prior to the project implementation. It seeks to evaluate the effects of proposed erection of a solar powered electric fence around Kakamega forest. It aims at assessing and predicting the main positive and negative impacts and sets out potential mitigation and management measures to prevent unacceptable impacts and where possible enhance benefits for the stakeholders, affected communities and the environment. An Environmental and social management plan has been compiled and the plan gives a set of management, mitigation measures to be taken during the fence construction, operation and decommissioning to manage key potential environmental and social impacts identified. It sets out the major impacts and mitigations defined in the ESIA and allocate responsibilities for implementation and performance monitoring in an ESMP format. The key negative impacts and mitigations are summarized below.

Biophysical Impacts

Impact	Mitigation
Loss of trees and other biodiversity	<ul style="list-style-type: none"> • Restrict clearance to the fence alignment and avoid cutting down iconic trees • Plant more indigenous trees in the degraded areas • Align fence along periphery road reserves as much as possible where applicable • Fence line to follow forest boundary as much as possible • Human labour to be used during construction • Confine construction activity within the fence cutline
Insularization of wildlife habitat	<ul style="list-style-type: none"> • Leave the riverines semi closed to act as a corridor for species movement • Continuous monitoring of key biodiversity indicators

Overall biophysical assessment

The project has more positive biophysical assessment impacts than negative ones. The forest is already surrounded by human activities with minimal natural habitat ecosystem connectivity hence insularization of species is almost negligible. There will be increased forest regeneration with less livestock and higher success of growth for planted trees. Better forest health will enhance species diversity and abundance. Minimal net loss of biodiversity in the short term but far higher biodiversity net gain in the long-term after project implementation.

Carbon sequestration to mitigate climate change is enhanced when the forest is maintained intact. Ecotourism, nature based enterprise and access to forest genetic resources and benefit sharing will all be enhanced. This will improve the local and regional economy.

Social cultural impacts

<p>Restricted access to forest resources Potential for fence vandalism Boundary disputes within existing settlements excisions from the forest</p>	<ul style="list-style-type: none"> • Provide community access gates to the forest where necessary • Take some of the resources outside forest to the community e.g. pipe water out • Establish community wood lots • Support community enterprise projects • Alternative energy community projects • Community sensitization and awareness creation • Encourage community policing by employing community scouts and fence attendants from forest adjacent communities • Train fence attendants to ensure it is functional throughout the year • KWS and KFS to undertake regular security patrols along the fence line • Establish Local level fence project committees • Involve respectable elders in identifying original forest beacons • Undertake a boundary survey before fencing • Establish grievance resolution mechanism at village level • Fence out all privately settled areas until land grievances are arbitrated
<p>Interference with cultural practices Potential injury from electrocution</p>	<ul style="list-style-type: none"> • Access gates to be provided at strategic entry points of all identified cultural sites and shrines • Empower and involve Isukha and Tiriki cultural elders in the forest conservation awareness programmes • Conduct awareness and sensitization • Install clearly labeled warning signs every 100metres along the fence line • On the outside of the fence 5 metre fence clearance or a road firebreak should be maintained between fence and private farms • Farmers sensitized to maintain their fence on the boundary between their farms and the fence

Overall Social cultural assessment

Most of the negative social impacts are based on perceptions and will be significantly reduced through community sensitization and conservation education awareness programmes. Forest excisions with human settlements that have never been formalized need to be regularized. Coordinated community sensitization between local leaders and project implementing agencies is required

Economic Impacts

Impact	Mitigation
Loss of income generated from forest resources	<ul style="list-style-type: none">• Provide alternative community enterprise projects comprising of nature based and ecotourism activities• Agricultural extension programmes such as Zero grazing, breed improvement to reduce livestock numbers• Employ local content in the entire project cycle• Promote farm forestry and domesticate some forest plants for commercial production• Educate community on genetic resource commercialization and promote ABS under Nagoya protocol• Enforce laws on illegal income from charcoal burning, mining and illegal logging

Overall economic assessment

The project will have an impact on income generating when PELIS and livestock grazing are completely stopped amongst the households that are currently undertaking this activity. KFS need to gradually annul grazing and farming in the forest as the community gets more and more empowered on alternative livelihoods that are compatible with forest conservation. In the short term food security for farmers under PELIS may be affected negatively but in the long term sustainable forest conservation will augment food security in the region through climate regulation.

Conclusion

The proposed electric fence project requires maintenance to ensure it remains effective and use of manual labour to provide employment and mitigate physical impacts of soil compaction and erosion is encouraged while an elaborate public awareness and sensitization will need to

be undertaken. The findings of this EIA study conclude that the proposed electric fence project is environmentally and ecologically sound. To ensure that the proposed project achieves the desired long-term objective, it is recommended that the Environment Management Plan should be implemented and annual environmental audits carried out to mitigate any unforeseen adverse impacts. A collaborative and partnership approach between Rhino Ark, County government of Kakamega, County government of Vihiga, Kenya forestry Service and Kenya Wildlife Service is required for effective and timely implementation of the project.

ACKNOWLEDGEMENTS

The EIA team acknowledges the Rhino Ark Charitable Trust for financially supporting this Environmental and Social Impact Assessment (ESIA) process. A project vehicle was timely availed and this made transport logistics between Kakamega and Nairobi easy.

We are grateful to the Chief Conservator Kenya forest Service for dedicating a team of officers to work with KWS firm of experts. We also wish to commend the support received from the County Government of Kakamega, County Government of Vihiga through the respective governors Hon. Wyciffe Oparanya and Hon. Dr. Wilberforce Otichillo for supporting the exercise and availing officers to be part of the ESIA team.

The Director General and Director Biodiversity Research and Planning Kenya Wildlife Service for facilitating and allowing the KWS ESIA team to undertake this noble exercise.

The ministry of interior through the Regional Commissioner Western, County commissioners Kakamega and Vihiga, DCC, chiefs and assistant chiefs who played a critical role in mobilizing community around the forest to attend consultation barazas. There are also a number of other government agencies, Non Governmental Organizations (NGO), Community based organizations, civil society and the media who shared useful information and critique during the stakeholder consultation workshops.

We are very grateful to all individuals particularly forest adjacent communities too numerous to mention by name for participating in the consultation forums and for the valuable information provided towards the success of the EIA process. The tireless effort of the EIA team to accomplish the task is highly commendable.

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EIA STUDY TEAM

The EIA study team was composed of a multidisciplinary team of experts from Kenya forestry Service and Kenya Wildlife Service.

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ACRONYMS

ABS	Access Benefit Sharing
ADC	Agricultural Development Cooperation
ADS	Anglican Development Services
AGRA	Alliance for a Green Revolution in Africa
CBD	Convention on Biological Diversity
CBO	Community Based Organisation
CC	County Commissioner
CFA	Community Forest Association
CGK	County Government of Kakamega
CVG	County Government of Vihiga
CITES	Convention on International Trade in Endangered Species
CPP	Consultation and Public Participation
DCC	Deputy County Commissioner
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Co-ordination Act
EMP	Environmental Management Plan
ESIA	Environmental Social Impact Assessment
FCC	Forest Conservation Committee
FTC	Field Technical Committee
GEF	Global Environment Facility,
HWC	Human Wildlife Conflict
IBA	Important Bird Area
IGAs	Income Generating Activities

KAFCOA	Kakamega Forest Community Association
KALRO	Kenya Agricultural & Livestock Research Organization
KEFRI	Kenya Forestry Research Institute
KFNR	Kakamega Forest National Reserve
KFS	Kenya Forest Service
KNBS	Kenya National Bureau of Statistic
KTB	Kenya Tourist Board
KWS	Kenya Wildlife Service
MMUST	Masinde Muliro University of Science and Technology
MoA	Memorandum of Agreement
NBEs	Nature Based Enterprises
NEMA	National Environment Management Authority
NGO	Non-governmental organization
NLC	National Land Commission
NWFP	Non-wood Forest Products
OSH	Occupational Health and Safety
PAs	Protected Areas
PELIS	Plantation Establishment Livelihoods Improvement Scheme
PFM	Participatory Forest Management
PIC	Project Implementation Committee
PPEs	Personal Protective Equipments
PSC	Project Steering Committee
PVC	Polyvinyl Chloride
RA	Rhino Ark Charitable Trust
ROP	Rural Outreach Program

SDG	Sustainable Development Goals
SFM	Sustainable Forest Management
SLM	Sustainable Land Management
ToR	Terms of Reference
UNDP	United Nation Development Programmes
UNFCC	United National Framework Convention on Climate Change
WRUA	Water Resource Users Association

1.0 INTRODUCTION

This report presents Environmental and Social Impact Assessment for the proposed construction of a solar powered electric fence around Kakamega forest estimated to cover 117 kilometre distance. The report has been jointly prepared by Kenya Wildlife Service as a firm of EIA experts and Kenya forest Service based on terms of reference approved by the National Management Authority. The objective of the ESIA is to identify impacts that the project may have on the biophysical and socio economic environment making reference to the baseline conditions prior to the project implementation. Kakamega Forest is the only remnant of near tropical equatorial rainforest found in Kenya and thus forms a unique and critical ecosystem with special ecological, socio-economic and cultural importance. Indeed, it hosts various plant and animal species found nowhere else in Kenya and in the world. The forest is dominated by Central and West African lowland species, but due to its elevation (predominantly between 1500- 1600 meters above sea level) it also contains Afro-montane species. The tropical equatorial influence combines with Afro-montane elements to produce a unique mix of flora and fauna characterised by high species endemism and thus the need to protect it as a critical ecosystem.

1.1 Project background

Kakamega forest conservation fence project concept was developed following a dialogue between the County Government of Kakamega and Rhino Ark in 2014. The stakeholders agreed to establish a partnership to conserve the forest biodiversity, promote ecotourism development and build the capacity of the local communities through conservation education.

Following the dialogue Rhino Ark held several consultations and engagement incorporating other key stakeholders including KFS, KWS County government of Vihiga and the Community leaders. On 15 June 2017, the Board of Directors of Rhino Ark made an aerial recce of the entire forest, walked inside the forest and met with the senior field managers of KFS and KWS, as well as the chairman of the local community forest association. The purpose of the visit was to assess the status of and the current threats to the forest and to help establish whether there is a need for Rhino Ark to be involved in its conservation. The stakeholders meeting deliberated on benefits derived from the electric fencing of the forests by securing local community lives and their livelihoods and protection of the forest resources.

This engagement process, further incorporated officials from the Ministry of Environment and Forestry who jointly with Rhino Ark visited Kakamega Forest and held consultative meeting with the leaders of the Mueleshi CFA. The CFA leaders acknowledged that currently the forest is porous, making it impossible to detect and deter all the illegal activities noting that the number of forest rangers and community scouts are not adequate to man all the forest entry points. It was thus agreed that fencing would help address some of the forest conservation challenges.

The community leaders (Mueleshi CFA) further pointed out that the controlled access to the forest via a fence would: (a) make the CFA work easier with regards to monitoring the

number of community members accessing the forest under various user rights; (b) reduce illegal forest activities among them illegal logging, charcoal burning, encroachment and grazing; (c) enhance revenue to the CFA to do improved monitoring on who accesses the forest; (d) create employment opportunity among the youth via community scouts, fence attendants and; (e) enhanced ecotourism potential as human wildlife conflict gets minimized.

Based on the outcome of these engagements a national Project Steering Committee was constituted under the Ministry of environment and forestry to mobilise resources and oversee project implementation. Rhino Ark Charitable Trust has since taken the lead and mobilised resources to initiate pre-project studies and stakeholder engagement for the construction of the proposed solar powered fence around Kakamega forest as one of the key components of the forest conservation. Other partners namely the County Government of Kakamega and County Government of Vihiga have committed to allocate funds for the project in their annual budget. KWS and KFS have committed to provide technical support including this ESIA undertaking.

1.2 Project rationale

Kakamega forest Ecosystems is faced with a number of anthropogenic and climate change related pressures that threaten its existence. These threats have been identified in a number of studies and most recent in the Taskforce report on Forest Resources Management and logging activities in Kenya report, 2018. The threats include among others; Rapid human population growth around the forest ecosystem compounded with poverty and inequality in consumption of resources. The forest plays a significant role in the provision of ecological, social and economic services to the local, national and regional community. The Forest is a major target for protection of biodiversity in East Africa, ranked third highest priority for conservation among forests in Kenya by the World Conservation Union (IUCN).

Subsistence crop production and pastoralism remain the main sources of livelihood for the majority of the population around the forest. The dwindling size of landholdings and growing pressure on the land has led to declining soil fertility leading to the need to seek the forest land as an alternative; changing lifestyle patterns based on the rapid growth in consumerism and weak conservation measures are outstripping the supply of most natural resources and causing extensive forest degradation. Overharvesting of species mainly from collection of medicinal herbs, bush meat, trophy hunting, overgrazing and charcoaling has led to biodiversity loss. Kakamega town is densely populated and the proximity of the forest to the town makes it face the growing problem of waste disposal and pollution. In addition climatic changes have naturally shifted habitats resulting new species assemblages and invasive species spread. The forest also faces both Institutional and policy obstacles including funding, security and management capability to ensure effective protection.

Kenya's overall sustainable development framework- the Kenya Vision 2030 articulates the country's long-term development programme for the period between 2008 and 2030. It acknowledges that the country's planned 10 percent growth rate per annum will bring changes that are likely to have adverse impacts on the environment. The changes include exploitation of natural resources such as forests, increasing pollution levels and

urbanization. The vision calls for effective management in order to ensure sustainability. It emphasizes the need to conserve strategic natural resources to support economic growth. The cornerstone issues concerning the forest sector include; conservation and management of the water towers for environmental services, water supply, agriculture and tourism purposes in addition to increasing the country forest cover to 10% by 2030. The vision is critical for the successful implementation of the national strategy for the forest sector; the National Forest Programme (NFP). The proposed Kakamega project supports several key thematic areas of NFP including: Natural forest conservation and management, Forest for water, Forestry education, training and research, Forest financing and Forestry and climate change. It envisages enhanced participation of local community, public and private sector participation in the forest development. The National Climate Change Response Strategy (2010) recognises that climate-driven changes affect resources critical for economic development of Kenya,

The National Climate Change Action Plan (2013–2017) presents actions aimed at both adaptation and mitigation of the adverse effects of climate change. The Action Plan includes several major actions related to forests and forestry among them protection and sustainable management of existing forest resources. The Kakamega conservation project is intended to contribute towards implementing the action plan. Properly managed forests have a great promise in helping country achieve the Sustainable Development Goals (SDGs).

The Kakamega fence conservation fence project is intended to address the aforementioned threats and challenges to the Forest ecosystem to ensure sustainable management of this important resource. Below is a situational analysis of the forest

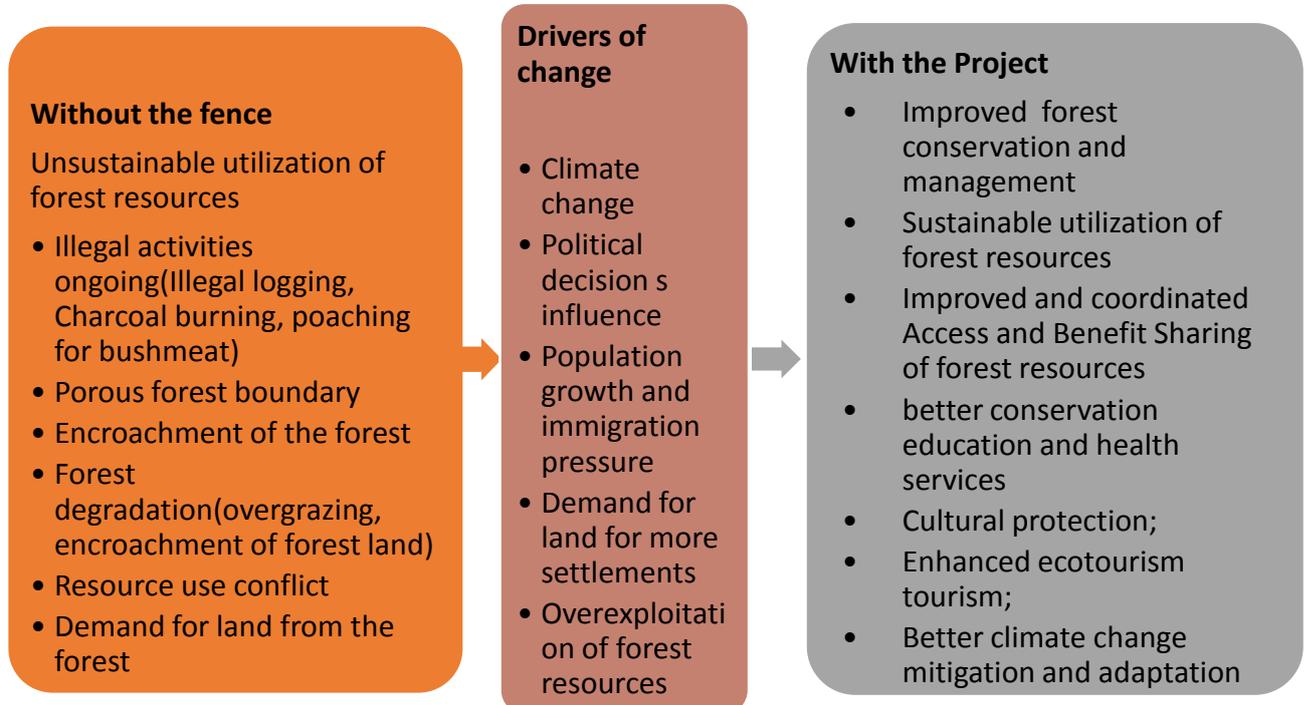


Figure 1. Situational analysis of with the proposed fence and without the fence scenario

1.3 Importance of Kakamega Forest

The forest provides several ecosystem goods and services which includes catchment protection, rain regime regulation for the region, climate change moderator, wildlife conservation, recreation, education, research, provision of timber (poles, firewood) and non-timber products including medicinal plants. This is because of its high species richness and habitat heterogeneity and rarity, both of which are of priority for conservation and protection.

The local community has a very rich and distinct culture and the forest acts as a significant location for traditional ceremonies and worship. There are sacred sites within the forest such as Ikavakava shrine, used for cleansing community offenders by selected traditional healers and Tiriki sacred forests, which are forest patches mainly used as circumcision sites by the Tiriki sub-tribe of the Luhya community.

The Forest has a great eco-tourism potential along the western circuit. Buyangu Hill for instance, is a rocky hill whose top is a look-out tower that offers a spectacular view of the northern part of the forest. Lirhanda Hill is another beautiful feature of the forest found in the north of Yala River and being the highest point in Kakamega Forest, provides an excellent panorama of the forest and surrounding countryside. Isiukhu River hosts and offers beautiful view points for birds, antelopes, monkeys, freshwater crabs, natural glades, secondary vegetation, old secondary forests and the Isiukhu falls. The Yala River is in the south-eastern end of the forest and has a spectacular 20m high waterfall. The trail towards the river and falls offers visitors the opportunity to view typical primary and old secondary forest. There are several natural glades within Kakamega Forest that provide a brilliant and interesting contrast to the forest and ranges in size from approximately 1 to 50 hectares.

1.4 Threats to the forest

Despite its uniqueness and critical importance, the forest is faced with a number of anthropogenic pressures that threaten its existence. These threats were identified in the recent Forest Resources Management Task Force report, 2018. They include:

1.4.1 Illegal activities

Overexploitation and habitat alteration continue to threaten the forest as it is located in one of the most densely populated agricultural areas in the world with over 700 persons per square km. This population pressure causes Kakamega Forest to be one of the heaviest utilized forests in Kenya, with recent studies (studies) showing a constantly increasing demand for wood products. Due to the population pressure illegal logging for supply of timber, poles, firewood, charcoal and traditional medicines are evident. Over grazing also occur in some of the glades and forested areas including rehabilitation sides leading to serious degradation. Forest adjacent communities have land sizes that are below 2 acres and this makes the forest the alternative for livestock keeping and other farming activities. The porous nature of the forest makes it difficult for the forest managers to control and monitor the number of livestock in the forest. Forest overgrazing may have irreversible damage to the unique forest biodiversity. According to visitor comments at Rondo retreat, sightings for unique birds, snakes, primates and insects have been on the decline over the

years and some attribute it to the herds of livestock in the forest. Overgrazed forest patches have low forest regeneration potential and re-growth which lead to declining biodiversity.



Figure 1 Illegal gold mining in Kibiri forest

1.4.2 Forest Encroachment

There are several human settlements encroaching into the forest among them Ikuywa settlement and cases of the neighbouring community encroaching into the forest land along its boundary for farming, grazing and in some cases residential houses. In certain areas forest beacons have allegedly been moved by land owners neighbouring the forest to expand their land including trying to alter river channel further inside the forest to extend their land. There are two major categories of forest excisions: Government institutions which include Shimkus prison occupying an area of 422 ha, the ASK Show ground 32.7 ha and educational institutions occupying a total of approximately 27.2 ha and settlement schemes occupying a total area of approximately 277 ha.

1.4.3 Forest Management and Information gap

There is lack of coordinated research data/information sharing and knowledge management between relevant institutions and stakeholders that includes KFS, KWS, Kenya Forestry Research Institute (KEFRI), County Governments, Masinde Muliro University, researchers and local community. Given the rich biodiversity of the forest there is need to have coordinated monitoring and indicative trend for management interventions to avoid extirpation of species.

1.4 Objectives

1.4.1 Overall objective

The overall objective of the project is to enhance conservation, protection and management of Kakamega forest for continuous provision of ecological, social, economic and cultural needs of the current generation without compromising the ability of the future generations to meet their own need.

1.4.2 Specific objectives

The specific objectives of the project are:

- a) Protect the forest and the communities through the construction of electric fence to, enhance biodiversity conservation, improve control of access to the forest resources and help reduce human-wildlife conflicts.
- b) Promote ecotourism development for socio-economic growth and improved forest conservation; and,
- c) Engage and build the capacity of forest-adjacent communities through conservation education; conservation programmes that provide employment opportunities; and conservation-based livelihoods.

1.5 ESIA Terms of Reference

The main objective of the Environmental and Social Impact Assessment (ESIA) will be to identify and assess impacts resulting from the proposed project activities to the physical, biological, social and economic environment. Potential positive and negative impacts from the various project subcomponents will be assessed in accordance with the environmental Management and Coordination Act (EMCA Cap 387) of the laws of Kenya. In addition World Bank environmental safeguard standards and other national and international legal and policy provisions that are in line with good environmental sustainability principles and practice will be considered.

1.6 Study Methodology

The approach to this exercise was structured such as to cover the requirements under the EMCA as well as the EIA/Audit regulations as stipulated under the Gazette Notice No. 56 of 13th June 2003. It will involve largely an understanding of the project background, the designs and the implementation plan as well as commissioning. Scoping of significant environmental aspects and baseline information was obtained through a detailed review of available documentation, physical investigation of the site and the surrounding areas, public consultation as well as focused group discussions. Below is a typical outline of the basic EIA steps that were followed during this assessment:

1.6.1 Environmental Scoping

Scoping involved preliminary meetings of technical team with selected and physical assessment of the site and its surroundings to isolate the most critical environmental and social issues requiring attention for detailed evaluation.

1.6.2 Desk Study

Documentation review will be a continuous exercise that involves a review of available documents on the project, including approved plans/designs, land ownership documentation, project plans and designs, environmental legislation and regulations, etc.

1.6.3 Field Assessment

With the background obtained from preliminary visits, discussions and documentation, the proposed project site will be comprehensively evaluated and the implementing department/proponent interviewed. The proposed development will be evaluated with a view to establish the physical environment status, social and economic trends. The field assessment will also be designed to establish potential positive and negative impacts through interviews, discussions and physical observation

1.6.4 Consultation and public participation

Four approaches were used for the public consultation process: focused group discussions, questionnaire with the project neighbors; open air community meeting commonly known as barazas and stakeholder workshops. Meetings with relevant government offices and consultations with the local community were undertaken to establish the public opinion in respect to the project. Among the major issues addressed included social, economic benefits, values of the project and compatibility with other undertakings in the area as well as any other perceived impacts of the project to the welfare of the people. The consultations were used to scope significant environmental aspects and predict project impacts.

2.0 PROJECT DESCRIPTION

2.1 Location and scope

Kakamega Forest is situated in Kakamega and Vihiga Counties of Western Kenya and lies between 34° 37' 5" - 35° 9' 25" East and 0° 32' 24" North - 0° 2' 52" South at an altitude of 1500 to 1700 m (Figure 1). The wider Kakamega Forest landscape includes Kakamega Forest, Malava, Kisere and Bunyala Forests. However, the proposed project will focus on the continuous forest block referred to as 'Kakamega Forest' which includes Kakamega Forest Station (15,984 ha), Isecheno Nature Reserve, Yala Nature Reserve, Kakamega National Reserve (4,468 ha), Kisere Nature Reserve all in Kakamega County and Kibiri Forest Station (3,691 ha) in Vihiga County as shown in the map in figure 3 below.

The entire perimeter of the Kakamega Forest (Forest Reserve and National Reserve) is approximately 117 Kilometres long Map of Kakamega Forest.

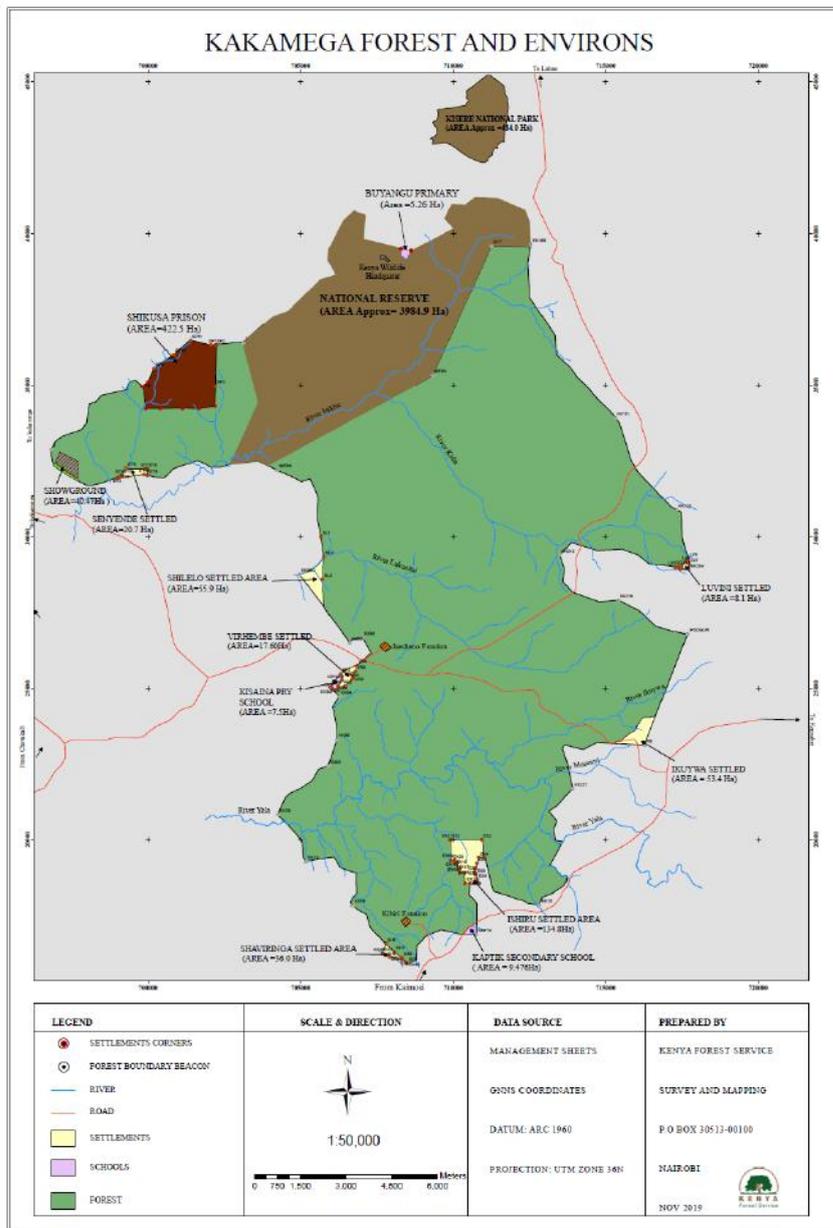


Figure 2. Map of Kakamega forest

2.2 Project Components and Activities

Kakamega conservation project will be implemented through three (3) key components as described below and which are aligned with the Kakamega Forest Ecosystem Management Plan 2012-2022.

2.2.1 Protection and biodiversity conservation

This will entail the following activities:

- Survey and Mapping of degraded forest areas and subsequent rehabilitation
- Construction of the electric fence around the entire Kakamega Forest and
- Rehabilitation and restoration of forest biodiversity.

2.2.2 Ecotourism development

This component will be delivered through the following activities:

- i. Conduct feasibility studies to;
 - Identify the ecotourism potential, establish visitors carrying capacity and identify possible sites for ecotourism facilities;
 - Assess the likelihood of establishing a primate sanctuary;
- ii. Engage potential investors to support the development of the ecotourism facilities such as canopy walk;
- iii. Support the development of a cultural information centre; and,
- iv. Promote public-private partnership for development of a state-of-the-art eco-lodge.

2.2.3. Community engagement, livelihoods and capacity building

This component will be delivered through the following activities:

- i. Develop and implement a Kakamega Forest Ecosystem conservation education programme in neighbouring schools;
- ii. Support conservation programmes among the Kakamega Forest adjacent communities; and,
- iii. Built the capacity of the implementing institutions to enable them manage the project effectively.
- iv. Support community livelihood (Income generating activities) that are compatible with forest conservation

2.3 Fence description

This ESIA report is in respect to the construction of perimeter fence to protect the forest biodiversity as outlined in 2.2.1 above. The activities involve clearance of vegetation along the fence line, digging holes, ramming the posts, fastening of the tensile wires, construction of energizer house and installation of the solar energy to power the fence. There are also a number of pre-fencing activities that have significant social impacts that need to be addressed during the ESIA process. This include survey of the forest boundaries

The Kakamega forest electric fence design shall comprise six (6) strands of live high tensile wire and two (2) strands of earth return wires at the top, subterranean tight lock mesh wire below to 0.7m high and 0.8m tight lock mesh underground for the burrowing animals. At the post ends, the design shall have baboon restraint wires at the posts -also referred to as a comprehensive fence design. The fence can however be redesigned to reduce the cost because the area does not have human wildlife conflict as a major issue.

The broad objective is to enclose the main forest block comprising of the gazetted forest units of Kakamega forest Reserve, Isecheno Nature Reserve, Yala River Nature Reserve,

Kibiri forest Reserve and Kisere Nature Reserve. There are existing settlements that have encroached on the original forest boundary which will be fenced out or inside depending on their individual merit based on existing legal excisions, public interests as determined by Kenya Forest Services boundary survey. The fence alignment in most other areas will follow the forest boundary to the extent possible and is estimated to cover a perimeter distance of about 117 kilometres.

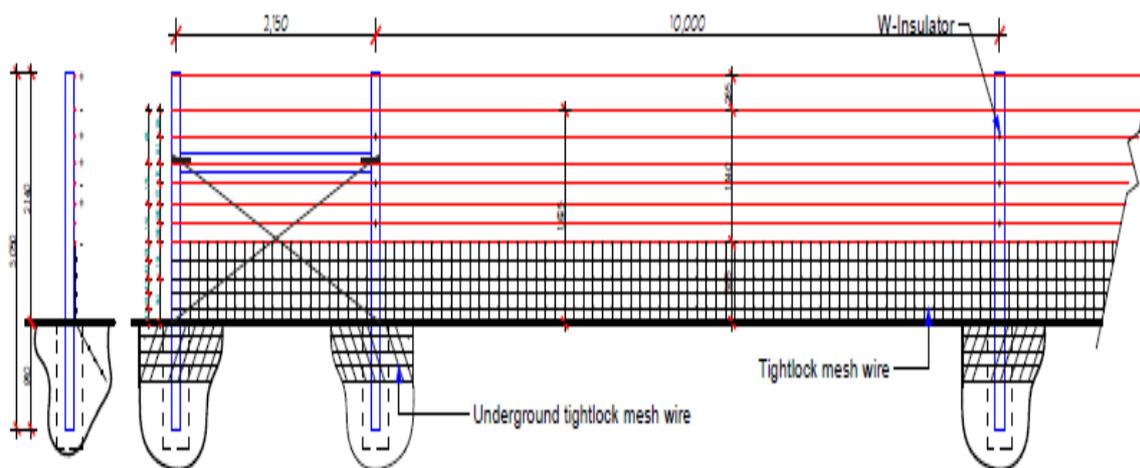


Figure 4: Comprehensive fence design

2.3.1 Line posts

Treated timber posts of 3,050mm (10ft) long 125mm diameter will be used, spaced at 10 metres centre on level or gradually sloping terrain while a spacing of 5 metres centre will be employed on steep terrain. The line posts will be installed in holes of 910mm deep below ground level. In rocky areas, these posts will be concreted within a concrete mixture ratio of 1:3:6 cement, sand, and ballast respectively. In case of terrain in an excess of 10°, the posts will be inserted at right angles to inclination.

Strainer assemblies of 125mm in diameter and 1010mm depth will be used. Straight line strainer assemblies will be installed at a maximum distance of 200m or at any point where there is a rise or fall in the fence line while angled strainer assemblies will be installed at every point where the fence alignment changes in direction. Horizontal post struts will be attached by drilling a 10mm diameter hole through the corner post into the strut for a distance 300mm. In this hole a 12mm diameter 330mm long high tensile rod will then be driven, which must remain protruding by 25mm, above which will be mounted the diagonal crosswire. All wire, including the tight 6 strands will be tensioned in unison, to ensure that both wires have an equal tension. To these two cross wires will be attached 4x150mm lengths of thick wall PVC pipe (or porcelain insulators) to accommodate the live wires. Tensioning the wire will be done to the corner posts at the furthest end of the direction of tensioning.

2.3.2 Plastic Posts

Apart from the wooden posts, plastic posts will be used. All plastic posts used shall be of hard plastic which conforms to the Kenya Standards BS 2782 on mechanical properties and BS 6233 on resistivity of solid electrical insulating materials. Posts to be used shall be not less than 100mm² or (100mm diameter) in size with a tensile strength of not less than 20N/mm².

2.3.3 Tight lock mesh wire

A mesh wire - tight lock mesh - measuring 1,500mm will be used, covering 800mm above the ground level, dug into the ground slanting to the forest side 700mm and about 300mm deep into the ground at the tip. The mesh will be strained from the strainer assemblies as explained above. The mesh will be stapled to the posts on the park side securely by the long shank, using hot dipped galvanized fencing staples.

2.2.4 High tensile plain wire

A highly galvanized high tensile plain wire of at least 280gm/m will be used, 2.5mm for live and earth wires and 1.6mm for baboon proof wires. The wires will be passed through in line W-insulators on wooden posts. All connections to the live wires will be made with line clamps, tightened and then covered with a film of grease.

2.3.5 Staples

On the treated timber posts used in the fence framework, the wires will be secured with long shank, hot dipped, galvanized fencing staples. The staples will be hammered in to the post pointing slightly downwards to avoid the danger of splitting the timber, should they be set in a staggered pattern down the post. The staple will not be driven fully into the timber so that it grips the wire giving allowance for free movement of wire as it comes under load or contracts and expands with temperature changes.

2.3.6 Energy supply

Solar powered energizer units will provide energy for the fence. For a distance of over 10Km, at least 5.0KV supplying 16 joules of stored have proved capable of powering a fence of this design. This qualifies for use of powered Energizers even in the presence of electricity mains.

2.3.7 Security and maintenance

To monitor the fence voltage, voltage alarms will be coupled to the return 4th live wire of the fence. Shock stops will be coupled to the energizer, to enable maintenance services (switch the fence on and off). Both items will be mounted on a board located in an energizer house.

Lightning diverters' kit will be installed built in spiral chokes manufactured using thick wall pipes and galvanized wires and connected between the fence and earth. The chokes for these units shall be manufactured using thick wall PVC pipes and galvanized wire.

2.3.8 Earthing

The energizer and lightning diverters will be earthed. A high powered energizer and effective lightning diverters require a large earth system to collect a large number of electrons from the soil. Soil is not a good conductor, so electrons spread out and travel over a wide area, inclining towards moist mineral soils.

Earthing shall be done as close to the end of the fence line as possible. Independent earth shall be installed at least 0.3m (13 in) into the damp soil, with a Digital Volt Meter used to measure the voltage between the live and earth wires, and between the live wire and the independent earth. The voltage on the latter shall not be more than 0.2KV greater than the voltage between the live and earth return wire, but if so, then the earth return wire shall be checked for loose connections and/or more earth stakes installed along the fence line and coupled to the earth wire. The earth system and the earth return wires, as well as the live ones shall be checked.

2.3.9 Flood gates

These shall be installed on all river crossings in areas where there is a narrow gorge. In these areas, it will be necessary to have a strainer assembly on either side of the gorge, at a height of 6m above the highest water level. A live wire including an isolator switch will then span the gorge between these strainers. In the case of flood carrying debris that subsequently removes the fence between the strainers, power can be carried to the far side of the gorge through the upper live wire.

The tight lock mesh wire and live wires between the two strainer assemblies will be attached to them with narrow gauge wire at each strainer assembly. This will allow a breach in the fence at these two strainers, and avoid pulling out longer sections of the fence.

2.3.10 Warning signs

For public safety, 'HATARI' – Warning signs will be attached to the 5th live wire, at spacing of approximately 100m.

2.3.11 Baboon proof stays

These shall be installed on every post. The contractor will manufacture a jig to perform the 'cervical dropper wire' and the 'central spacer', identical in shape and size. Dropper wire stays manufactured from 6.0mm mild steel round bar will be cut to a length of 300mm and driven 50mm into the post at specified locations, followed by a 60mm piece of thick walled PVC pipe 60mm long (with a 3mm diameter wire hole) driven on to the 6mm HT round iron by 30mm. The preformed drop wire shall then be threaded through the upper stay, by a wire spacer and down through the lower stay. The top of the vertical dropper shall be wound on to the top live wire. The wire spacer shall then be given a half turn attached to

the second live wire. Six 50mm nails with the heads cut off shall then be driven in to the top of each fence post, leaving 25mm protruding.

2.3.12 Access Gates

There will be provisions for access points (gates) to the forest as considered necessary. Several considerations will be taken into account including access to water abstraction points, forest protection access roads and non wood forest products extraction authorized under the provisions of the Forest Conservation and Management Act 2016.

2.3.13 Fault finding

To locate leaks, shorts, faulty joints, broken wires and insulators, fence personnel shall walk the fence line with a transistor radio tuned off a station and on high volume. An audible click will be heard at the source of the fault.

If anyone gets shocks where they should not, such as on gates, it is advisable to check the insulators, earth the wires behind the end insulators and improve the earthing.

2.4 DECOMMISSIONING

The main reason for the erection of the fence is to enhance forest conservation and mitigate against encroachment, degradation and overexploitation of forest resources. The fence lifespan is estimated at 20 years but can be regarded as permanent in the sense that it will be continuously maintained. It is expected that the forest will recover and be restored through reforestation programme and natural regeneration following reduction of livestock and other degrading activities. Biodiversity will equally be enhanced including increase of large mammals and especially the threatened De Brazza monkey.

In this case, the poles may be left to serve as boundary, and the electrical installations removed and used elsewhere for provision of solar energy. All wires will be removed and disposed appropriately in accordance with the public procurement and disposal act and the waste management regulations.

2.5 PROJECT BUDGET

The project budget is estimated at KES. 392,000,000 (Three hundred and ninety two million Kenya shillings).

3.0 BASELINE INFORMATION

Kakamega Forest Reserve is situated approximately 1.6 - 22.4 km east of Kakamega town. The forest was declared a forest area by Proclamation No. 14 of 13th February 1933 which set aside 23,777.3 hectares as Kakamega Forest, along with Malava Forest block. Currently it covers an area of about 19,792.4 hectares in size after several excisions over time and creation of Kakamega National Reserve Kakamega forest has six very important ecological sub-systems: the riverine/riparian systems, near natural forest systems, forest (grassland) glades, secondary forest systems, exotic and indigenous plantations and the soil system which makes it a prime ground for education and research and tourism.

3.1 Physical environment

The forest is situated on a mainly flat to slightly undulating terrain with temperature ranging from 18°C to 29°C and high annual rainfall variation of 1325 mm to 3500 mm.

The Kakamega forest ecosystem is endowed with multiple physical, biodiversity, social, economic, cultural and scenic/ecotourism resources (Biota 2010). The forest is very unique in that it is the eastern-most relic of the once vast Guinea-Congolian equatorial forests and the only remnant example of equatorial rainforest found in Kenya.

It occupies a very special biogeographical position, forming the transition zone of the lowland Congo basin forest to the Afromontane forest, and presents a mixture of species of both forest types. Indeed it is closely associated both geographically and biologically with other two smaller forest blocks namely Kisere (484 ha) and Malava (718 ha) located 6 km and 12 km respectively to the north of Kakamega Forest.

It was initially gazetted as a Trust Land Forest in 1933. The forest was later gazetted as a Forest Reserve in 1941 under the management of the then Forest Department, now Kenya Forest Service (KFS). In 1985, the northern part was gazetted as Kakamega National Reserve under the management of the Kenya Wildlife Service (KWS). Currently, it encloses a total area of approximately 24,819 hectares.

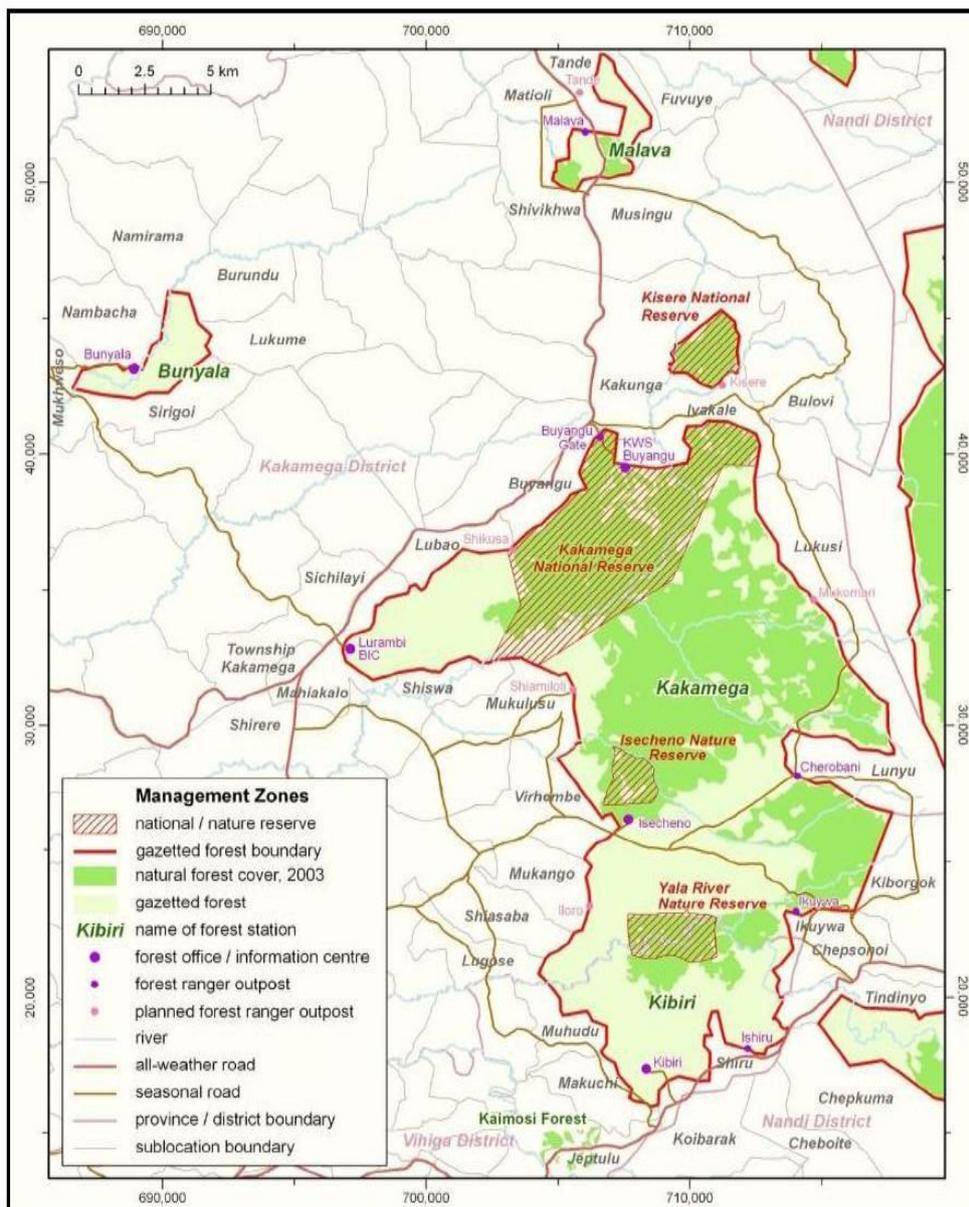


Figure 3 Kakamega forest ecosystem

3.1.1 Climate

Kakamega forest ecosystem is generally wet throughout the year, with an annual average rainfall of approximately 2,000 mm. rainfall is heaviest in April and may (long rains), with a slightly drier June and a second peak roughly in august to September (short rains). January and February are the driest months. Temperatures are fairly constant throughout the year, with a mean daily minimum of about 11° C and mean daily maximum of 26°C .

3.1.2 Geology and Soils

Geology of Kakamega Forest Ecosystem can be described by underlying rocks that include basalt, phenolites and ancient gneisses of the Kavirondo and Nyanzian Systems which are associated with Gold bearing quartz veins. The rocks form moderately fertile clay-loam soils.

3.2 Biological environment

Due to its former connection to Guinea-Congolian rain forest ecosystem, the Kakamega Forest Ecosystem is home to many species that are related to the central and West African flora. There are also several endemic species, i.e., animals and plants that are not found anywhere else in the world. However it is no longer a primary forest but an old secondary forest, despite small patches in the central forest areas that have, to all appearances, the attributes of a primary forest (Holstein et al, 2010).

The uniqueness of the Kakamega Forest lies in its rich ecological diversity in animal and plant species, about 385 species of plants which are not found elsewhere in Kenya are found in this forest.

Kakamega Forest is recognized as national hot spot of biodiversity, known to host some of the most unique snake species. To date, 36 snake species have been recorded. A majority of these snakes originate from West Africa and includes the Forest Cobra, the Black-lipped Cobra, Jameson's Mamba, the Bush Viper, the Rhinoceros-horned Viper and the Gabon Viper. The Gold's Cobra and Kaimosi Blind Snake are prevalent in the Kakamega Forest, but are believed to be in danger of extinction. Species characteristic of West African forests and reaching their eastern limit in Kakamega or the Nandi Forests are the Gold's Tree Cobra and the Forest Night Adder.

3.2.1 Flora

More than 120 species of trees have been recorded in the Kakamega forest Ecosystem. More than 70% of all plant species are of minor or major medicinal importance. Some of the conspicuous plants of Kakamega forest include: Whitlow Root (*Solanum sessilistellatum*) bitter; Spiny bole (*Chaetacme aristata*) Planch; White Thorn (*Acacia sp*); Spiny (*Acanthus-Acanthus pubescence*; *Afromomum sp*, *Aneilema johnstonii*; *Antheroma naudinii*; *Desmondium repandum*; *Dissotis speciosa*; White flowering Commelina (*Comelina albiflora*); Wild Fig (*Ficus thonningi*); *Gomphocarpus semilunatus*; *Habenaria malcophylla*; Tree Orchid (*Tridactyle bicaudata*); *Impatiens hochstetteri*; Lantana (*Lantana camara*); Klip Dagga (*Leonotis nepetifolia*); *Mussaenda arcuata*, *Polia condensate*; Tall Woodland Sugarbush (*Protea madiensis*); Guava (*Psidium guajava*); Kakamega flame (*Spathodea campanulata*); *Nitobe Chrysanthemum Tithonia diversifolia*; Kenaf (*Hibiscus cannabinus*) amongst many others (Holstein et al, 2010).

The forest is also home to threatened tree species, Elgon teak and *Prunus Africana* which are species of special conservation concern (locally threatened and rare). These species are prone to over exploitation due to their quality timber and medicinal value.

On the other hand, scientific research has indicated the presence of 13 different plant communities each representing a different succession stage. Forest plantations in the reserve covering about 3,199 ha comprise of *Pinus patula*, *Pinus eliotti*, *Cupressus lusitanica*, *Eucalyptus saligna*, *Grevillea robusta* and *Bischofia japonica* .

3.2.2 Fauna

Like the flora, the fauna of Kakamega Forest Ecosystem show some peculiarities. Birds are numerous with almost over 500 different species. Up to now, over 487 butterfly species have been recorded, which amounts to more than a half of all butterflies that inhabit Kenya (about 900 species). However, many animal groups have not been studied yet in depth, and this applies particularly to insects and arachnids (Holstein et al, 2010). The forest is a designated Important Bird Area (IBA) and out of the 1,065 bird species found in Kenya, 44% (472 species) are found in Kakamega Forest. Some of these bird species like the Turner's Eremomela and Chapin's Flycatcher globally threatened species, in addition to 15 species regionally threatened, and 46 unique species recognized in Kenya that are endemic to this forest.

In addition, the forest is the habitat to five out of the eight primate species found in Kenya among them the Blue Monkey, Redtail Monkey and the Black-and-White Colobus Monkey. Kisere Forest National Reserve is famous as home to endanger De Brazza's Monkey. The forest is endowed with a high diversity of insects such as butterflies of 487 species constituting 54% of the 900 species known to Kenya. A total of 72 dragonfly species, representing 42% of Kenya's dragonfly fauna, has been recorded in the Kakamega Forest. Twenty species are of national importance in Kenya, since they are only found at this site within the country. At the global level, *Onychogomphus styx* and *Chlorocnemis pauli* are classified as 'Near Threatened', although most species are listed as 'Least Concern'. In addition there are 243 species of bees found in Kakamega Forest.

A number of species, especially invertebrates are endemic of Kakamega forest. Apart from venomous snakes, none of the animals in the forest are dangerous to man (Holstein et al, 2010). Some of the most common fauna of Kakamega forest are: Blue monkey (*Cercopithecus mitis*); Black and white Colobus (*Colobus guereza*); Olive Baboon (*Papio anubis*); Mountain Fruit Bat (*Rousettus lanosus*); Verreaux's Eagle-owl (*Bubo lacteus*); Black and White casqued Hornbill (*Bycanistes subcylindricus*); Pale Flycatcher (*Melaenornis pallidus*); Montane side-striped Chameleon (*Chamaeleo ellioti*); Rhino viper (*Bitis nasicornis*); Gabun viper (*Bitis gabonica*); Olive sand snake (*Typhlops lineolatus*); Spotted Toad (*Amietrophynus maculates*); Common Tree frog (*Hyperolius viridiflavus*); Jumping spider (*Menemerus congoensis*) (Holstein et al, 2010). These are just but a few of the animal species found in the forest.

The forest is also home to globally threatened bird species, Turner's Eremomela (*Eremomela turnei*) and Chain's Flycatcher (*Muscicapa lendu*); a further 15 species regionally threatened, and 46 species known in Kenya only from the forest. Most of these species are found in plantations of mixed indigenous tree species.

Many bird species are crucial for the forest ecosystem, because most tree species depend on birds for seed dispersal. In this regard, the Black and White-casqued Hornbill (*Bycanistes subcylindricus*) is an important species for seed dispersal in Kakamega forest. The forest is also characterized by high insect diversity. Butterflies are represented with 487 species which constitutes 54% of the 900 species known to Kenya, with many of them reaching their easternmost limit in Kakamega. Moths are also species rich in the forest with recorded totals of 53 Hawkmoths (Sphinigae), 37 Emperor moths (Saturniidae), and 43 Tiger moth species (Arctiinae). A total of 72 dragonfly species, representing 42% of Kenya's dragonfly

fauna, has been recorded in the Kakamega forest. Twenty species are of national importance for Kenya since they are only found at this site within the country. At the global level, *Onychogomphus styx* and *Chlorocnemis pauli* are classified as 'Near Threatened', although most species are listed in as 'least concern'.

The Kakamega forest has a recorded total of 170 species of ants with estimated species numbers lying between 200 and 250. Several ant species which have been described as new to science were first collected in Kakamega forest, particularly those in the genus *Axinidris*. It is very likely that Kakamega forest holds more species than any other locality in Kenya and nationally the ant fauna of this forest is unique as most of the dominating species in the forest are of Guinea- Congolian origin. Termites are among the most important group of invertebrates decomposers and have enormous impact on soil properties and nutrient cycling. Research suggests that, of the 62 termite species described in Kenya, 25 species have so far been found in Kakamega forest. To date there are 243 species of bees known in the Kakamega forest.

The forest hosts endemic snakes with so far 36 snake species being recorded. Majority of these snakes are from West Africa including the Forest Cobra, the Black-lipped Cobra, Jameson's Mamba, the Bush Viper, the Rhinoceros-horned Viper and the Gaboon Viper. The Gold's Cobra and Kaimosi Blind snake are endemic to the Kakamega forest and are believed to be in danger of extinction. Species characteristics of West African forests and reaching their eastern limit in Kakamega or the Kakamega forest's Gold's Tree Cobra (*Pseudohaje goldii*) and the forest Night Adder (*Causus lichtensteini*).

3.3 Socio-economic environment

3.3.1 Administration

The largest forest block of the Kakamega Forest Ecosystem falls in Kakamega County. About 35 sub location units of Kakamega County are located within the Kakamega Forest Ecosystem. Some of these units are occupied by the gazette forests and reserves while others are mainly forest adjacent settlement areas. The latter encompasses the rural settlements or agricultural areas as well as the urban areas and that form the critical buffer or intervention zone with regards to the Forest Ecosystem management.

3.3.2 Population size and Distribution

The local inhabitants of Kakamega Forest Ecosystem are mainly the Luhya community. The settlements are densely populated with a mean household size of 4.3. From the 2019 population and housing census, the county population is 1,861,331 (KNBS 2019).

Table 1. Human population in Kakamega and Vihiga County

County	Total Population	Total Number of Households	Average Household size
Kakamega	1,861,332	433,207	4.3
vihiga	587,189	143,365	4.1

Table 2: Human Population density within project area of influence

County	Sub-counties	Total Population	Number of Households	Average Household size	Land Area (Sq. Km)	Population Density (No. per Sq. Km)
Kakamega	Kakamega Central	188,212	52,015	3.6	155.2	1,212
	Kakamega East	167,641	39,589	4.2	417.2	402
	Kakamega North	238,330	51,083	4.7	420.8	566
Vihiga	Hamisi	159,241	37,986	4.2	157.2	1,013

Source; KNBS 2019

3.3.3 Ecotourism

The forest's high diversity of flora and fauna (endemic and non-endemic), unique cultural practices of the forest neighboring communities and natural features portray a great ecotourism potential. Community participation in Ecotourism activities in the forest can greatly contribute to its social and economic development but only if the activities are well planned, organized, coordinated and managed. Examples include: the endemic snake, plants, insects and animal species; cultural sites e.g. the Tiriki Circumncision sites, sacred graves and shrines; cultural practices such as circumcision, bull and cock fighting and natural features such as caves and underground water channels flowing into Lake Victoria. There are also well established bandas, camp and view sites, snake parks and information center.

The local community also has rich indigenous knowledge on the forest, which can be of great value and interests to tourists. Community tour guiding can be a viable option for

ensuring that Ecotourism benefits the local community. Kakamega forest ecosystem is at the core of Western Tourism Circuit which if well harnessed would add to the monetary value of the ecosystem.

Currently visitor accommodation in Kakamega forest is limited to Rondo retreat and KWS bandas with a bed capacity of less than 50

3.3.4 Plantation Establishment Livelihood Improvement System (PELIS)

PELIS is a system of establishing plantation forests in Kenya Forest Service. Piloting of the system was introduced in 2011 and adopted in 2013. Since its inception, Kakamega Forest station has been establishing its plantations through PELIS. The number of farmers who have been involved and benefitted in the programme before moratorium are one thousand four hundred and twenty eight (1,428) in Kakamega County. Similarly in Kibiri forest in Vihiga County number of farmers before moratorium were two thousand one hundred (2,100) members which have now reduced to one thousand five hundred (1,500) farmers.

3.3.5 Grazing in the forest

This is being undertaken in designated areas within the forest estate. A total number of five hundred and eighty seven (587) livestock owned by two hundred and ninety four (294) farmers is currently in Kakamega station and five hundred and four (504) recorded in Kibiri Forest station.



Figure 5 Grazing in the forest

3.3. 6 Firewood collection

This involves permitting community members to collect deadwood at a fee of kSh 100 per head load per head from plantation forests, however, this was before the moratorium. A total of 497 wood licences were issued in 2017/2018. Firewood license in Kibiri Forest were 200 households. The communities surrounding the Forest collect firewood in the forest at a fee of kSh 100 per head load per day. There are however

3.3.7 Mining and Quarrying

Kenya Forest service does not issue mining licences however, in before moratorium there was one quarry/stone within Kibiri Forest. Illegal gold prospecting is taking place in Kibiri using crude methods. The holes dug bring down trees and endanger rangers on patrol as well as legal forest users. This activity need to be completely stopped. Other activities include sand harvesting and quarrying for stones.



Figure 6 Mining and sand harvesting in Kakamega forest

3.3.8 Public utilities inside the forest

The public utilities within the Kakamega Forest include;

Public roads

- I. Shinyalu – chirobani - Ivihiga road
- II. Senyende – Shikusa road
- III. Mukomani-Shamiloli road
- IV. Shinyalu - Ikuiywa – Chepsonoi road
- V. Virhembe Barrier – Illoro road
- VI. Showground - Handiti road
- VII. Kakamega Forest Station – Muleche road

Power lines

There is a power line way leave running from Chepsonoi to Shinyalu. This power line follows the road reserve.

Water way leaves, intake and water points

Communities living around the Forest fetch water in the forest in Kibiri forest water points are located at Kamulembe, Kaptik, Bundolore and Shaviringa.

In Kakamega there are several points where people collect water from the forest.

Table 3 Water collection points in the forest

Area	Water Points	Area	Water Points
Lurambi	6	Ilero	4
Senyende	6	Ikuywa	5
Ikuywe	5	Chirobani	6
Shiswa	4	Shanderema	5
Shamiloli	6	Virhembe	6

3.3.9 Culture

The Tiriki community around the forest practise and uphold their circumcision rites within the forest in areas of Shaviringa where there are 3 sites, Kaimosi 3 sites, next to Kaptik secondary, there are 2 sites, Kaptis next to Ikuywa there are 2 sites and 3 sites next to EC's office.

The Luhyas' have very rich and distinct culture. However as is common all over Kenya, traditional societies and cultures are increasingly coming under threat and in many cases cultural norms are breaking down as younger generations migrate to urban areas in search of alternative livelihood opportunities. The forest management seeks to nurture this rich culture through establishment of cultural centers and gazettelement of some of the unique features and events of the Luhya community. The Kakamega forest ecosystem is an important place for traditional ceremonies and worship. There are sacred sites within the forest such as the Ikavakava shrine used for cleansing community offenders by selecting traditional healers and the Tiriki Sacred patches of forests used mainly as circumcision sites by the Tiriki sub-tribe of the Luhya community.

Some of the notable cultural events include; bull fighting, cock fighting and traditional dances. The people of Ilesi and Mukhonje continue to make a living out of pottery. Lubao town hosts dog sellers every week making it a unique market in the region.

3.3.10 Access to genetic resources and benefit sharing awareness

Access to Genetic Resources, the fair and equitable share of Benefits arising from their utilization (ABS) is an initiative aimed at the implementation of the UN Nagoya Protocol. The ABS focuses on creation of enabling environment for sustainable utilization of genetic resources and associated traditional knowledge through capacity development of resource producers and users - in most cases the partner countries and Kenya is among them. It aims at contributing to poverty reduction, food security and technology transfer, social development including equity and rights, and biodiversity conservation through implementing the Nagoya Protocol (NP) and the third objective of the Convention on Biological Diversity (CBD) in its entirety.

Through the facilitation of GIZ and UNDP, Kenya research and development permitting stakeholder institutions – among them NEMA, KWS, NACOSTI, KFS, KEPHIS, KALRO and DVS

have been capacity built. GIZ and UNDP have also ensured awareness creation and strengthening institutions on ABS activities through enhancing ABS structures at County and Community levels in Kakamega County. Kakamega County being one of the pilot counties on *Mondia Whytei* (mukombelo) genetic resource development have undergone such trainings. As a result, County Technical Committee on genetic resources and a community legal platform (KANFCCO) are functional. Under these structures, a PIC on research and development of Mukombelo has been signed by the resource providers (Kakamega County government, KANFCCO, KWS and KFS) and the users (MANE Fillis - a France company and JKUAT).

Mondia whytei (mukombero) is a woody liana found naturally growing in Kakamega Forest and widely domesticated by the western Kenya community. The plant has a myriad of uses by western Kenya communities since time immemorial and the community utilizing it has continually improved indigenous knowledge on its uses. MANE company – a France based company - has shown interest in accessing several tones of *Mondia whytei* from this region for industrial use in cosmetics and flavoring.

The PIC is a legally binding document and a negotiating tool for communities on ABS matters.

3.3.11 On-going community livelihood support projects

KALRO-AGRA-SLM is a five year project funded by the Global Environmental Facility (GEF) through AGRA which became effective in September 2017.

It aims at improving productivity and sustainable land use systems in selected watersheds within 5 km radius around the Kakamega-Nandi Forest Ecosystem through adoption of sustainable land and forest management technologies.

The strategic objective of the Project is that by September 2020, 100,000 farmers will have been sensitized on SLM technologies through established learning sites and 50 farmer groups trained on the appropriate technologies.

Through this project both parties envision less degraded land, increased yields on maize, beans and indigenous vegetables, more trees planted, and enlightened farmer groups that are collectively improving their lives and livelihoods while sustainably managing and conserving their environments.

The project is implemented through four strategic interventions:

- i. Capacity building of farmer groups in Sustainable Land Management (SLM)
- ii. Increased farmers' access to input and output markets of targeted crops
- iii. Enabling policy and institutional/ framework for up scaling sustainable land and forests management at county government levels
- iv. Improved knowledge management and communication of project results to stakeholders

The Project is implemented by KALRO under AGRA within Vihiga, Nandi and Kakamega counties. It has been implemented by a project Steering Committee (PSC) respective County Governors, Directors of affiliate institutions, Vice Chancellors of the affiliate Universities, chief executive officers of affiliate NGOs and respective heads from

AGRA and GEF - as the apex decision making organ . At implementation level, is a consortium team comprised of Nature Kenya, KALRO, ROP, AGRA, KWS, KFS, MMUST and Alupe University.

The main project outcome will be enhanced capacity of stakeholders to implement and upscale sustainable land and forest management practices. AGRA's agenda on SLM/SFM project is to provide solutions to smallholder farmers with regard to climate change and climate through science and engagement in discussions for improved production. It's meant to mitigate climatic challenges faced by the Nandi-Kakamega forest ecosystem and lessen forest loss through improved on-farm productivity.

It supports Participatory Forest Management (PFM) Plans; Capacity building of Community Forest Associations (CFAs) and other forest stakeholders; development and commercialization of Non-wood forest products and services (NWFPS); Assessment of SLM/SFM and biodiversity conservation related policies and strategies at county level; development of county level SLM/SFM biodiversity frameworks; valuation and assessment of ecosystem.

3.3.5 Forest encroachment over the years

The map below shows forest areas that have been excised and settled over the years. These include a number of public institutions and community settlement. Some are as old as the forest gazettelement

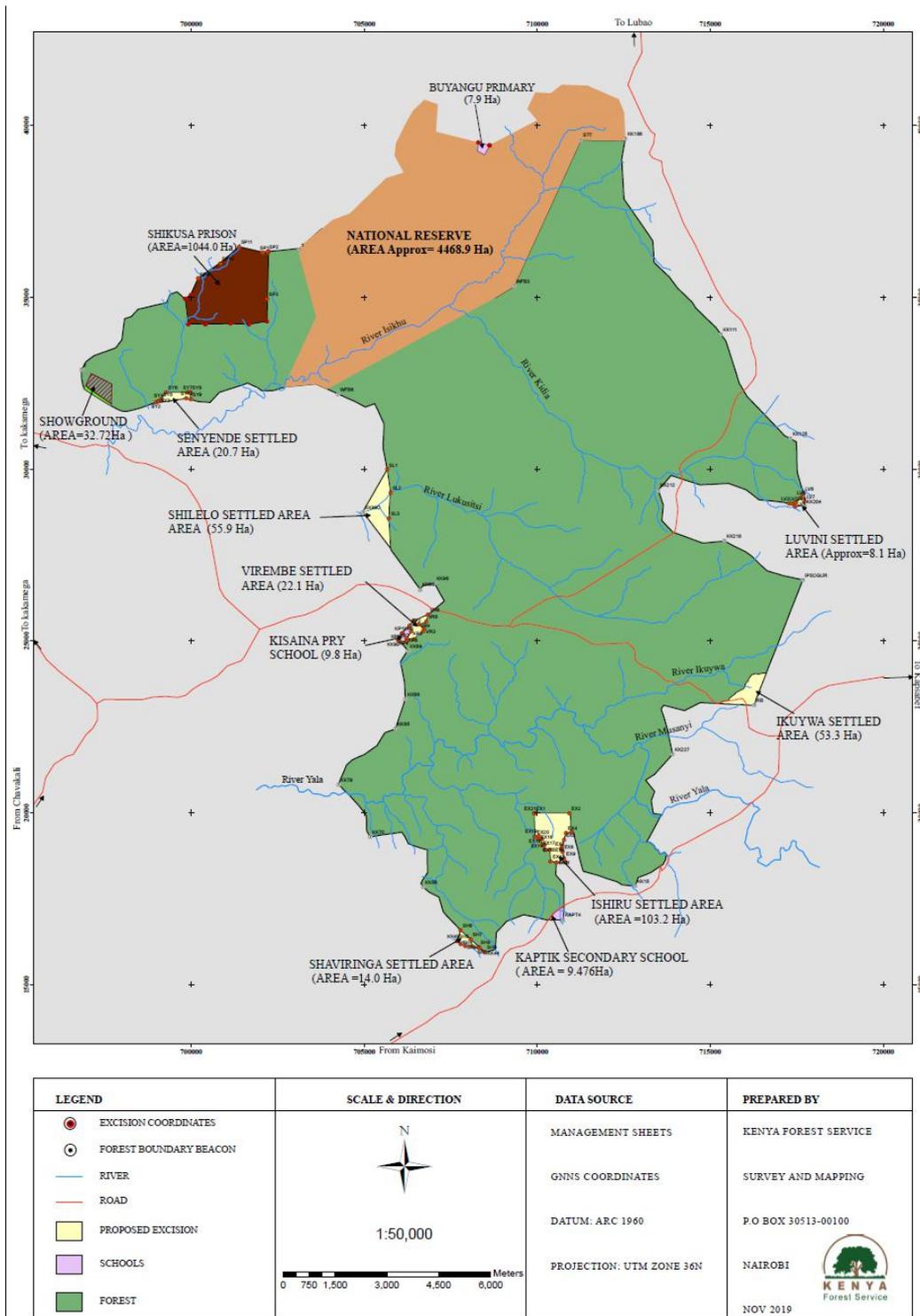


Figure 7. Map of the forest showing excision areas with human settlement

3.4 Ecosystem Services

Ecosystem services are defined as natural product and processes that contribute to human well being and the personal and social enjoyment derived from nature. Ecosystem services are in four broad categories namely:-

- Provisioning
- Regulating
- Cultural
- Supporting

Kakamega forest ecosystem renders all the four services. Provisioning services support human needs and Kakamega forest is a source of food (mushrooms, wild fruits & vegetables, honey etc), fodder, and firewood and building materials for the local communities. The forest is the source of traditional medicine and domestic and livestock water is obtained from the forest.

Regulating services provides control of the natural environment. The forest constitute a number of River catchments and these hydrological system will regulate run off, influence ground water recharge, and maintain water storage potential of the landscape. Existing forest cover establishment controls suspended sediments and regulates water cycle.

Cultural services offer cultural value to the community. The forest provides intrinsic recreational pleasure for users over a number of generations. Some forest sites and swamps are regarded as sacred and used during circumcision ceremonies and rituals. The Tiriki community expressed strong attached to those sites. Others are used as prayer shrines.

Supporting services comprise natural processes essential to resilience and functioning of ecosystems. The rich plant diversity in the forest support local bees and butterflies that are important agents of pollination for crop production as well as forest trees seed production for the forest regeneration.

4.0 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

This chapter sets out laws and policies that facilitate and guide implementation of the forest conservation project in an environmentally sustainable way. It also outlines some crucial international frameworks and obligations that relate to the conservation and management of Kenya's forests.

It is the Government policy that the rights of its citizens to clean and health environment are met. In return, every person has responsibility to protect and manage the environment. In this regard, the Government enacted the Environmental Management and Co-ordination Act, 1999 (EMCA) and the Environmental Impact Assessment and Audit Regulations, 2003, to provide a framework law for coordinated management of the environment.

Both EMCA and the regulations require new enterprises/projects to undertake an EIA. The umbrella body administering these is the National Environment Management Authority, NEMA. The Authority has designated Environmental Committees to oversee the implementation of EMCA at the Provincial and District levels.

Summarized below are the various legal frameworks that have a bearing on the proposed fencing of Kakamega Forest Reserve.

4.1 The Constitution of Kenya 2010

In its preamble, the Constitution of Kenya, 2010 declares that the people of Kenya are respectful to the environment, which is their heritage and they are determined to sustain it for the benefit of future generations.

This constitution also states, in article 42, that every person has a right to a clean and healthy environment. Sub article 1 states that this right includes the right to protect the environment for the benefit of present and future generations through legislative and other measures. Article 43 declares economic and social rights of every Kenyan.

The constitution also endorses the national land policy and chapter 5 which deals with land and environment; states principally in article 60 that land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable.

The principles outlined in subsections of article 60 and article 61 declare that all land in Kenya belongs to the people of Kenya collectively and sub articles 2 classifies land as either public, community or private. The national land commission is established under article 67 and its main function is to manage land on behalf of National and County governments.

On environment and natural resources, the constitution in Article 69 sub article (1) subsection (a) states that the state shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits. The following subsections give regulations in terms of forest cover, biodiversity, cultural resources, indigenous knowledge, systems for environmental impact assessment and prevention of activities that may harm the environment. Section 2 states that every person has a duty to cooperate with state organs and other persons, to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. Article 70 deals with enforcement of environmental rights and everyone who feels their right to a clean and healthy environment

has been denied, has the obligation to go to court to seek redress. **Compliance:** In implementing the project, the proponent will safeguard the rights of the citizen enshrined in the constitution while ensuring that it is an ecologically sustainable development with social and environmental safeguards.

The Constitution of Kenya 2010 recognizes environmental rights under Chapter 5 (Land and environments) in Part 2 (Environment and natural resources). Section 42 gives every person a right to a clean and healthy environment.

The fencing of Kakamega Forest Reserve will ensure the environment is protected for the benefit of present and future generations, particularly those contemplated in Article 69 and obligations relating to the environment under Article 70.

4.2 The Environmental Management and Coordination (Amendment) Act, 2015 (EMCA) Cap 387

This is an Act of Parliament to amend the Environmental Management and Co-ordination Act, 1999. The EMCA is an Act of Parliament to provide for the establishment of an appropriate legal and institutional framework for the management of the environment. It also establishes the National Environment Management Authority (NEMA). The main objective of the Act is to:

Provide guidelines for the establishment of an appropriate legal and institutional framework for the management of the environment in Kenya;

Provide guidelines for Environmental Impact Assessment, Environmental Audit and Monitoring, Environmental Quality Standards and Environmental Protection Orders.

The Act empowers NEMA to exercise general supervision and co-ordination over all matters relating to environment and to be the principal instrument of government in implementation of all policies related to environment. Where any other law relating to environmental issues that is in conflict with EMCA, the EMCA takes precedence. This project report has been undertaken in accordance with the Environmental (Impact Assessment and Audit) regulations, 2003, which are one of the regulations that operationalised the Act.

These Regulations clearly provide the step by step guidelines in undertaking an EIA, the procedures for submission and the approval process by NEMA. It also gives regulations on Environmental Audits, which the project proponent shall be required to undertake a year after the proposed project is commissioned.

Part II of EMCA states that every person is entitled to a clean and healthy environment in accordance with the Constitution and relevant laws and has the duty to safeguard the same. In order to achieve the goal of a clean Environment for all, new projects listed under the second schedule of Section 58 of EMCA shall undergo an environmental Impact Assessment. The proposed project does fall within the Second Schedule and since it is a project that will be undertaken in a conservation area setting, it requires an EIA.

EMCA, Cap 387 part VI section 58 (1) and (2) states that:

The proponent of any project specified in the Second Schedule shall undertake a full environmental impact assessment study and submit an environmental impact assessment study report to the Authority prior to being issued with any license by the Authority:

Provided that the Authority may direct that the proponents forego the submission of the environmental impact assessment study report in certain cases.

The proponent of the project shall undertake or cause to be undertaken at his own expense an environmental impact assessment study and prepare a report thereof where the authority, being satisfied, after studying the report submitted under subsection (1), that the intended project may or is likely to have a significant impact on the environment, may reject the project or issue conditions.

Compliance: The proponent on preparing this ESIA report therefore complies with the stipulations of EMCA Cap 387.

4.2.1 Environmental Impact Assessment and Audit Regulations 2003

Environment (Impact Assessment and Audit) Regulations 2003 (EIA/EA Regulations) under section 147 of the EMCA came into operation on June 13th 2003. These regulations provide the framework for carrying out EIAs and EAs in Kenya by NEMA licensed experts and/or firm of experts. This report is in fulfillment of the above requirement.

Under EMCA, it is an offence for any person or body to commence, proceed with, execute or conduct any project without approval granted under the Act irrespective of whether any other approval had been granted by any other agency. The proponent will obtain an EIA license from NEMA before implementation of the project. Sections 68 and 69 also require that the proponent must submit an Environmental Audit Report one year after commencement of the project, and thereafter undertake self-audit.

The proposed project falls under the Second Schedule of Projects that requires an Environmental Impact Assessment.

Compliance: By conducting this Environment and Social Impact Assessment study and preparing this ESIA report, the proponent has complied with these regulations.

4.2.2 Environmental Management and Co-ordination (Waste Management) Regulations, 2006

The Waste Management Regulations sets out standards for handling, transportation and disposal of various types of wastes that originate from any project. The regulations stipulate the need for projects to resort to waste minimization or cleaner production, waste segregation, recycling or composting. This is important for any wastes generated during the construction and operation phases of the project. The proponent shall adhere to the regulations and shall dispose waste at county government designated sites using NEMA duly licensed waste handlers.

Compliance: The proponent will use the 4Rs principle for reduce, recover, reuse and recycle any waste generated during all the phases of the project.

4.2.3 Environmental Management and Co-ordination (Water Quality) Regulations 2006

The Water Quality Regulations provide for the protection of lakes, river, streams, springs, wells and other water sources. The regulations also stipulate that all projects should refrain from any actions, which directly or indirectly may cause water pollution. This is important for the proposed project because some of the barrier alignment may lie or pass very near water bodies. In **compliance** with these regulations, the project will ensure that the intended water sources are protected and the water distributed within the project scope is potable.

4.2.4 Environmental Management and Co-ordination (Wetlands, river banks, lake shores and sea shore Management) Regulations 2009

These regulations provide for protection and conservation of wetlands and river banks.

They stipulate that no person shall carry out any of the activities stipulated in Section 42 of the Act without a Wetland Resource Use Permit by the relevant lead agency and an Environmental Impact Assessment License issued by the Authority where applicable.

They support the enforcement of Section 42 (g) of the Act which prohibits the draining of wetland, ensuring that every owner, occupier or user of land which is adjacent or contiguous to a wetland shall, with advice from the Authority, have a duty to prevent the degradation or destruction of the wetland, and shall maintain the ecological and other functions of the wetland.

Compliance: The project is not water dependent and water needs will be met through the existing water supply systems and rivers within the national forest Reserve and hence will not degrade any wetland in the Kakamega Forest Ecosystem.

4.2.5 The Environmental Management and Coordination Act (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006

Regulation 4 (1) states that a person shall not engage in any activity that may;

- (a) Have an adverse impact on the ecosystem;
- (b) Lead to the introduction of exotic species;
- (c) Lead to unsustainable use of natural resources, without an Environmental Impact Assessment license issued by the Authority under the Act.

Under regulation 5 (2), without prejudice to the generality of the foregoing, the Authority shall, in consultation with the relevant lead agencies – (a) Issue licenses for the establishment and maintenance of facilities for recovery and rehabilitation of threatened species.

(b) Determine full recovery and rehabilitation measures of threatened species to ensure its restoration into its natural habitat.

Compliance: The proposed project is aimed at the achievement of these regulations.

4.3 Forest Conservation and Management Act, 2016

This is an Act of parliament to give effect to Article 69 of the constitution with regard to forest resources; to provide for the development and sustainable management, including conservation and rational utilization of all forest resources for the socioeconomic development of the country and for connected purposes. The Act recognizes the critical role that forests play in soil, water conservation, wood products provision, biodiversity conservation and as a habitat for wildlife. The Act provides for clear definition in respect to the ownership of forests, i.e., State, Local Authority or individuals. In addition, there are provisions on community participation which are intended to give such communities an incentive to participate actively in forest conservation. An association registered may apply to the Director for permission to participate in the conservation and management of a state forest or local authority forest in accordance with the provision of the Act. Such associations are permitted to participate in, among other activities: protection, conservation and management of such forests; formulate and implement forest programs consistent with the traditional forest user rights of the community concerned in accordance with sustainable use criteria and protect sacred groves and trees. The act further provides for user rights in respect of, collection of medicinal herbs, honey harvesting, harvesting of timber and fuel wood, grass harvesting and grazing, ecotourism and educational activities.

The Act is important because the barrier will enclose forest land and impact on the access of forest goods. The fence will also limit wildlife movement and may thus impact on forest habitat. The barrier may also assist in conservation and also limit illegal activities like logging and charcoal burning in the forests.

Compliance: The proposed project will adhere to the provisions of the Forests conservation and Management Act, 2016 during the project implementation phase.

4.4 Forest (Participation in Sustainable Forest Management) Rules, 2009

The Rules gazetted vide Legal Notice No. 165 of 6th November, 2009, apply to the participation of the private sector and forest communities in the sustainable management of state forests.

The objective and purpose of the rules is to provide for the circumstances under which authorisations may be applied for, granted, varied, cancelled or declined and the manner in which a person granted such authorisation may exercise a right or privilege conferred by the authorisation.

The proposed project will adhere to the provisions of the Forests (Participation in Sustainable Management) Rules 2009.

4.4.1 Forests (Charcoal) Rules, 2009

The Rules were gazetted vide Legal Notice No. 186 of 2009 apply to the sustainable charcoal production, transportation and marketing. Charcoal means wood fuel product derived from carbonization of wood or other plant materials.

Under these rules, all commercial charcoal producers are expected to organize themselves and form Charcoal Producer Associations. Kenya Forest Service, on the other hand is expected to register and issue a registration certificate to Commercial Charcoal Associations. These Associations will: (a) facilitate sustainable production of charcoal by members; (b) ensure that members implement the reforestation conservation plans; (c) develop and implement a Code of Practice for the purposes of self regulation; (d) assist Kenya Forest Service in enforcing the provisions of the Act relating to sustainable charcoal production, transportation and marketing; and (e) do any other thing that is necessary for sustainable charcoal production and transportation. A registered Community Forest Association (CFA) is eligible to engage in charcoal production. Furthermore, the Service shall issue movement permits for the commercial charcoal production.

4.5 Grass Fire Act (Cap 327)

The Grass Fire Act (Cap 327) provides for protection of vegetation by regulating burning of bushes, shrubs, grass, crops and stubble through issuance of permits to carry out planned burning processes within protected areas, trust land and in private lands. **Compliance:** The proposed project will adhere to the provisions of the Grass Fire Act during the clearing of the fence alignment.

4.6 Water Act, 2016

This is an Act of Parliament to provide for the regulation, management and development of water resources, water and sewerage services; and for other connected purposes. The Act vests ownership of every water resource and held by the national government in trust for the people of Kenya. Under this provision the responsibility to regulate, manage, use and control of water resources is vested in the Water Resources Authority (WRA that serve as an agent of the national government .The Water Act protects water bodies and sources from pollution and controls their use by the project. The proposed project will seek to ensure that the amount abstracted from the any river within the project area will be sustainable and that the project design will work to conserve the available water and minimize wastage.

Under section 22 (1) Where the Authority is satisfied that in order to conserve a vulnerable water resource, special measures are necessary for the protection of a catchment area or a part thereof, it may by Order published in the Gazette declare such catchment area to be a protected area (2) The Authority may impose such requirements or regulate or prohibit such conduct or activities, in or in relation to the protected catchment area as the Authority may consider necessary for the protection of the area and its water resources. **Compliance:** This legislation is important as the proposed project may impact on water resources including access to some water sources by both humans and wildlife. It may also impact on water bodies including rivers, streams and wetlands. The proponent will be required to obtain the requisite water permits and licenses from WRA.

4.7 Wildlife Conservation and Management Act, 2013

This is an Act of Parliament to provide for the protection, conservation, sustainable use and management of wildlife resource in Kenya and for connected purposes. Part VI has

provisions for the conservation, protection and management of wildlife. Based on this Act, Kenya Wildlife Service is the principle lead agency in all matters pertaining to conservation and management of wildlife within Kenya. Under the Wildlife Conservation and Management (Amendment) Act 2013, Part (1) under general principles provides for the devolution of wildlife conservation and management as much as possible and formulation of a wildlife conservation and management strategy with clear principles, objectives, standards, indicators, procedure and incentives with which wildlife resources shall be protected, conserved, managed and regulated.

Under the Act, where any person suffers any bodily injury or is killed by any wildlife listed under the Third Schedule, the person injured, or in the case of a deceased person, the personal representative or successor or assign, may launch a claim to the County Wildlife Conservation and Compensation Committee within the jurisdiction established under this Act.

Section 26 (1) states that the provisions of this Act with respect to conservation, protection and management of the environment shall be in conformity with the provisions of the Environmental Management and Coordination Act. Under section 27

(2), a user or other related right shall not be granted under this Act where the requirement for a strategic environmental, cultural, economic and social impact assessment license under the Environmental Management and Coordination Act, Cap 387 has not been complied with.

Section 28 of the Act stipulates that no provision and no right entitlement conferred and granted under the Act shall wherever appropriate operate to exempt a person from compliance with the provisions of the Water Act, 2016 concerning the right to the use of water from any water resource, reservoir or point. Therefore the proponent shall be required to comply with the provisions of the water Act 2016.

Under Section 44 (1) of the Act, every national park, marine protected area, wildlife conservancy and sanctuary shall be managed in accordance with a management plan that complies with the requirements prescribed in the Fifth Schedule. **Compliance:** The proponent has a joint progressive and integrated management plan for the Kakamega Forest Ecosystem that was developed in a consultative process in compliance with this section of the Act. The implementation of this project will comply with the requirements of this Act in order to protect wildlife species and their habitats and ecosystems.

4.8 Agricultural Act (Cap 318)

The Agriculture Act is the principal land use statute covering inter alia soil conservation, Agricultural land use and conservation issues such as preservation of soil fertility. The Act prohibits any land use practices that may intensify soil erosion. They prohibit cutting down or destroying vegetation on any land of which the slope is 35% or higher. The rules stipulate strict regulations on the cultivation of any land whose slope is between 12% and 35% when the soil is not properly protected from erosion. The Act also provides for protection of water courses setting aside a riparian zone of a minimum 2 meters equivalent to the width of river to a maximum of 30 meters. The Act is important because the proposed project impacts on

land use and agricultural sector once the fence is put up. This is because wildlife has led to a decline in agriculture in the adjacent farms and this is bound to change the barriers.

4.9 Workmen’s Compensation Act (Rev. 1988)

This Act provides for compensation for injury. Workmen should be compensated in case of incapacitation resulting from accidents during the course of work. Accidents are likely to occur during the fencing period. **Compliance:** The proponent will ensure safety of workers during the project phase.

4.10 The Work Injury and Benefits Act, 2007

This Act provides for compensation to employees for work-related injuries and disease contracted in the course of their employment and for connected purposes. Key sections of the Act include the obligations of employers; right to compensation; reporting of accidents; compensation; occupational diseases; medical aid; appeals; and miscellaneous provisions. Schedules provided in the Act outline the degree of disablement; occupational diseases; and dependant’s compensation.

Compliance: In case of any accidents or incidents during the project cycle, this Act will guide the course of action to be taken.

4.11 Public Health Act (Cap 242)

The Act protects human health, prevents and guards against introduction of infectious diseases into Kenya from outside, to promote public health and the prevention, limitation or suppression of infectious, communicable or preventable diseases within Kenya, to advice and direct local authorities in regard to matters affecting the public health to promote or carry out researches and investigations in connection with the prevention or treatment of human diseases. This Act provides for the impetus for a healthy environment and gives regulations to waste management, pollution and human health. This Act controls the activities of the project with regard to human health and ensures that the health of the surrounding community is not jeopardized by the activities of the project. The proponent will adhere to provisions of this Act and all instructions provided by the Kakamega and Vihiga County Public Health Department. **Compliance:** The proponent shall acquire the requisite approvals from the Public Health Department for the project and institute measures to monitor any disease outbreak that may emanate from the operations of the project.

4.12 The Land Act, 2012

The Land Act was enacted by Parliament to give effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land based resources, and for connected purposes. The Act applies to all land declared as (a) public land under Article 62 of the Constitution; (b) private land under Article 64 of the Constitution; and (c) community land under Article 63 of the

Constitution and any other written law relating to community land. The Land Act guarantees security of tenure for land under (a) freehold; (b) leasehold; (c) such forms of partial interest as may be defined under the Act and other law, including but not limited to easements; and (d) customary land rights, where consistent with the Constitution and guarantees equal recognition and enforcement of land rights arising under all tenure systems and non-discrimination in ownership of, and access to land under all tenure systems. Under the Lands Act 2012, The Way leaves Act, Cap 292 and The Land Acquisition Act, Cap. 295 have been revoked but Sections 8 and 9 allow for Compulsory Acquisition as an option in acquiring land for public The Land Act guarantees security of tenure for land under (a) freehold; (b) leasehold; (c) such forms of partial interest as may be defined under the Act and other law, including but not limited to easements; and (d) customary land rights, where consistent with the Constitution and guarantees equal recognition and enforcement of land rights arising under all tenure systems and non-discrimination in ownership of, and access to land under all tenure systems. Under the Lands Act 2012, The Way leaves Act, Cap 292 and The Land Acquisition Act, Cap. 295 have been revoked but Sections 8 and 9 allow for Compulsory Acquisition as an option in acquiring land for public utility

4.13 The Land Registration Act, 2012

This is an Act of Parliament to revise, consolidate and rationalize the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes. The Act applies to all land declared as (a) public land under Article 62 of the Constitution; (b) private land under Article 64 of the Constitution; and (c) community land under Article 63 of the Constitution and any other written law relating to community land. The Land Act guarantees security of tenure for land under (a) freehold; (b) leasehold; (c) such forms of partial interest as may be defined under the Act and other law, including but not limited to easements; and (d) customary land rights, where consistent with the Constitution and guarantees equal recognition and enforcement of land rights arising under all tenure systems and non-discrimination in ownership of, and access to land under all tenure systems.

4.14 National Land Commission Act, 2012(No.5 of 2012)

The National Land Commission of Kenya is an independent government commission whose establishment was provided for by the Constitution of Kenya to, amongst other duties, manage public land on behalf of the national and county governments, initiate investigations into present or historical land injustices, recommend appropriate redress, monitor and have oversight responsibilities over land use planning throughout the country. It was officially established under The National Land Commission Act, 2012. The mandate of the National Land Commission is drawn from the National Land Policy of 2009, Constitution of Kenya 2010, National Land Commission Act, 2012, the Land Act 2012 and the Land Registration Act of 2012. Under the National Land Commission Act, the Commission shall among other duties monitor the registration of all rights and interests in land and ensure that public land and land under the management of designated state agencies are

sustainably managed for their intended purpose and for future generations. Also, the commission is required to manage and administer all unregistered trust land and unregistered community land on behalf of the county government and develop and encourage alternative dispute resolution mechanisms in land dispute handling and management. The Commission is also required in consultation and cooperation with the national and county governments, to establish county land management boards for the purposes of managing public land.

4.15 Environment and Land Court Act, 2011

This is an Act of Parliament to give effect to Article 162(2) (b) of the Constitution to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of land. The Environment and Land Court is one of the Courts contemplated by article 162(2). It is a Superior Court and has the same status as the High Court. The court is established under section 4 of the Environment and Land Court Act No. 19 of 2011. It has jurisdiction to hear any other dispute relating to environment and land. The jurisdiction of the court is provided under section 13 of the Act. The Court has original and appellate jurisdiction to hear and determine all disputes in accordance with Article 162(2) (b) of the Constitution and with the provisions of the Act or any other written law relating to environment and land. The court has powers to deal with disputes relating to land administration and management. The court is also empowered to hear cases relating to public, private and community land and contracts or other instruments granting any enforceable interests in land. The court also exercises appellate jurisdiction over the decisions of subordinate courts or local tribunals in respect of matters falling within the jurisdiction of the Court. The court further exercises supervisory jurisdiction over the subordinate courts, local tribunals, persons or authorities in accordance with Article 165(6) of the Constitution.

4.16 The Physical Planning Act Cap 286

Physical Planning Act is a fundamental Act of Parliament that provides for preparation of local-physical development plans giving the local authority power to prohibit or control development activities in their jurisdictions by checking on the content of the plans, process of preparation and ultimate approval. Section 30 states that any person who carries out development without development permission will be required to restore the land to its original condition. It also states that no other licensing authority shall grant license for commercial or industrial use or occupation of any building without a development permission granted by the respective local Authority. In principle, the Planning Act ensures that all developments and other changes to land are vetted and approved as to ensure order, harmony, health and economy of the different uses on any land. The Act also promotes public participation in the preparation of plans and requires that in preparation of plans proper considerations be given to the potential for economic and social development.

Compliance: The proponent shall adhere to all the requirements of the Act as provided through the relevant physical planning authorities.

4.17 Occupational Safety and Health Act, 2007

This Act's main objectives is to secure the safety, health and welfare of persons at work, and to protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work. It assigns duties and liabilities to employers, employees and the public in order to facilitate this and promote healthy work environments subsequently enhancing outputs, ergonomically.

Under Part II of the Act the duty of the proponent is: (1) to ensure the safety, health and welfare at work of all persons working in his workplace; sub section (2) (a) to (g) outlines specific duties under sub section 6 (1) - these include provision of Personal Protective Equipment (PPEs), preventing risks, information, notifications, and maintenance of places of work. Sub section 3 stipulates that employers must carry out risk assessments and, section 4, send a copy to the occupational health and safety officer in the area. Section 8 prevents employers from harming, dismissing, discriminating or disadvantage employees in terms of their work.

Section 11 also makes it a requisite to carry out environmental health and safety audits at least once a year and the report be sent to the Director with the prescribed fee for approval.

Employees duties are described in section 13 and they include sub sections: (a) ensuring their own health and safety and of other persons; (b) cooperation with employer or anyone else in the discharge of duty; (c) wear PPEs at all times; (d) comply with regulations of health and safety; (e) report hazards; (f) report accidents or injuries; and (g) report with regard to any duty or requirement imposed on his employer or any other person by or under any other relevant statutory provision, co-operate with the employer or other person to enable that duty or requirement to be performed or complied with. Section 16 of the Act also prohibits anyone from creating hazards to others in the workplace. Section 21 places duty of reporting accidents and dangerous occurrences in the workplace on employers, to occupational health and safety officers.

Compliance: This Act is relevant to this project and must be complied with by the employer and employees during the construction phase and operational phases of the project.

4.18 The County Government Act, No. 17 of 2012

This Act provides for the establishment of county governments and defines their functions as delegated from the constitution. It also provides for public participation in running of the affairs of the county. The Act gives the county government oversight and control of all devolved functions from the National Government. **Compliance:** The proponent will comply with all laws and rules enacted by the county assemblies of Kakamega and Vihiga Counties that impact on this project and the county governments will be informed and consulted on implementation of this project.

4.19 The Penal Code Cap. 63

Section 191 of the Penal Code states, that any person or institution that voluntarily corrupts or foils water of public springs or reservoirs; rendering it less fit for its ordinary use is guilty or an offence. Section 192 of the same act says a person who makes or vitiates the atmosphere in any place to make it noxious to health of persons/institution in dwellings or business premises in the neighbourhood or those passing along public way commit an offence.

The proponent will be required to ensure strict adherence to the Environmental Management plan throughout the project cycle in order to mitigate against any possible negative impacts on water and air.

4.20 The Employment Act, 2007

This Act declares and defines the fundamental rights of employees; minimum terms and conditions of employment; provide basic conditions of employment; and to regulate the employment of children, among other rights. Key sections of the Act elaborate on the employment relationship; protection of wages; rights and duties in employment; termination and dismissal and protection of children, among others. This Act will guide the management of workers, especially during the construction period. **Compliance:** The proponent will not employ any labourer below 18 years

4.3 SOME RELEVANT GOVERNMENT POLICY PAPERS

4.3.1 FOREST POLICY AND LEGISLATION

The Sessional Paper No 1 of 1968 provides direction in the conservation, management and development of forests in the country. It addresses issues of reservation, protection, management, law enforcement and utilization of forests and forest resources.

4.3.2 National Forest Programme 2016–2030

The National Forest Programme (NFP) is a strategic framework for forest policy, planning and implementation to coordinate the sector's development. The NFP is designed to sustain and restore the resilience of forests in the country by ensuring that forests are able to withstand and recover from climate-related stresses and disturbances such as droughts, wildfires, and epidemics of insects and diseases while adhering to the principles of sustainable forest management. Sustainable forest management will ensure that benefits derived from forests meet current needs and still contribute to the requirements for long-term development. The NFP is geared towards integrating constitutional principles and values as well as the aspirations of the people of Kenya as captured in Vision 2030, and will provide clear linkages with other sectors including engaging with development partners. The

national forest framework aims at sustainable forest management and has the overall goal: “To develop and sustainably manage, conserve, restore and utilise forests and allied resources for socio-economic growth and climate resilience.”

The implementation of this project will contribute to the achievement of the objectives of the National Forest Programme.

4.3.3 Vision 2030

Vision 2030 is Kenya’s development blueprint aiming at making the country a newly industrialized middle income nation, providing high quality of life for all citizens. Environmental management is captured under the social pillar that seeks to build a just and cohesive society with social equity in a clean and secure environment. Forestry development aims at increasing the forest cover from the current 2.7% to 10% by the year 2030 through afforestation and reforestation programmes. The proposed project will take cognizance of this vision.

4.3.4 Wildlife Sessional Paper no 3 of 1975

This policy paper is about sustainable utilization of wildlife resources putting emphasis on benefit sharing with communities living within wildlife areas.

Session Paper No. 3 of 1975 governs conservation of wildlife within and outside protected areas. It also supports community initiatives towards conservation and plays an advisory role to the local communities by providing regulations that enable the generation of optimum returns from wildlife. The Policy, however, does not allow consumptive utilization of wildlife resources within the parks, only non-consumptive uses such as recreation and tourism. The Wildlife (Conservation and Management) Act Cap. 376 of 1976 provides for the protection, conservation and management of wildlife in Kenya. The Wildlife Policy and Legislation are now under review, with an aim of bringing them in line with the current thinking and approaches to conservation. The goal of the draft Wildlife Policy (2007) is to provide a framework for conserving in perpetuity, Kenya’s rich diversity of species, habitats and ecosystems for the well-being of its people and the global community. The policy focuses on conservation and management of wildlife inside and outside protected areas, sustainable management of wildlife resources and resolution of human wildlife conflicts.

4.3.5 The Kenya National Biodiversity Strategy Action Plan

This is a national framework of action for the implementation of the Convention on

Biological Diversity (CBD) to ensure that the present rate of biodiversity loss is reversed, and that present levels of biological resources are maintained at sustainable levels. Two of the goals spelled out in the action plan are quite relevant in the proposed project namely:

- To achieve sustainable utilization of resource ecosystem for the benefit of the present generations while ensuring their potential to meet the demands of future generations

- To preserve genetic resources and biological diversity in the nation's ecosystem and to preserve their cultural value.

4.3.6 The Kenya National Climate Change Response Strategy

The purpose of this strategy is to put in place robust measures needed to address most of the challenges posed by climate variability and change through thorough impact assessments and monitoring of various projects.

4.4 INTERNATIONAL CONVENTIONS AND TREATIES

4.4.1 Convention on Biological Diversity (CBD), 1992

Granted that the Kakamega Forest Reserve has a wealth of biodiversity that is important at national, regional and international level, the principles of the Convention on Biological Diversity shall be a consideration whenever the use of biodiversity of the area is under consideration. The following articles of the convention are applicable in respect to the proposed project:

Article 3. Principle which holds that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

Article 7. Identification and Monitoring which states *inter alia* that each Contracting Party shall as far as possible and as appropriate, in particular for the purposes of Article 8 to 10:

- (a) Identify components of biological diversity important for its conservation and sustainable use;
- (b) Monitor through sampling and other techniques the components of biological diversity identified, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;
- (c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity and monitor their effects through sampling and other techniques; and
- (d) Maintain and organize, by any mechanism data derived from identification and monitoring activities pursuant to subparagraph (a), (b), and (c) above.

The proposed project will review and take into consideration past and recent inventories in the area to acquaint itself with the key species that should receive special attention to avoid their decimation in implementing the project. Monitoring of the components of biological diversity in the project sites will be undertaken over time to assess the impact the proposed project will have on them compared to the baseline stocks.

Article 8. In-situ Conservation. Each Contracting Party shall, as far as possible abide as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (b) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
- (c) Promote the protection of ecosystem, natural habitats and the maintenance of viable populations of species in natural surrounding;
- (d) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
- (e) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies;
- (f) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;
- (g) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.

Article 10. Sustainable Use of Components of Biological Diversity requires that each Contracting Party:

- (a) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements;
- (b) Support local population to develop and implement remedial actions in degraded areas where biological diversity has been reduced;
- (c) Encourage cooperation between its government authorities and its private sector in developing methods for sustainable use of components of biological diversity.

The proposed project seeks to contribute to Kenya's implementation of this article through:

- (a) Strengthening Kakamega Forest Reserve position as a special area for the conservation of indigenous species through fencing of the entire forest area;
- (b) Restoration of indigenous species through enrichment planting in favourable areas;
- (c) Providing labour opportunity to locals during the implementation for livelihood support and purchasing of indigenous tree seedlings from the local communities for enrichment planting.

4.4.2 The Nagoya Protocol

This is a 2010 supplementary agreement to the 1992 Convention on Biological Diversity on Access to Genetic Resources, the fair and equitable share of Benefits arising from their utilization. Kenya is a signatory to this protocol. (ABS) is an initiative aimed at the implementation of the UN Nagoya Protocol. The ABS focuses on creation of enabling environment for sustainable utilization of genetic resources and associated traditional knowledge through capacity development of resource producers and users - in most cases the partner countries and Kenya is among them. It aims at contributing to poverty reduction, food security and technology transfer, social development including equity and rights, and biodiversity conservation through implementing the Nagoya Protocol (NP) and the third objective of the Convention on Biological Diversity (CBD) in its entirety. Kakamega Forest being a biodiverse resources area, the implementation of this project will safeguard the protection of the biodiversity therein and contribute to continued access to genetic resources and their utilization.

4.4.3 United Nations Framework Convention on Climate Change (UNFCCC)

The landmark UNFCCC was opened for signature at the 1992 United Nations Conference on Environment and Development (UNCED) conference in Rio de Janeiro (known by its popular title, the Earth Summit). On June 12th1992, 154 nations signed the UNFCCC, which upon ratification committed signatories' governments to a voluntary "non-binding aim" to reduce atmospheric concentrations of greenhouse gases with the goal of "preventing dangerous anthropogenic interference with Earth's climate system." These actions were aimed primarily at industrialized countries, with the intention of stabilizing their emissions of greenhouse gases at 1990 levels by the year 2000; and other responsibilities would be incumbent upon all UNFCCC parties. The parties agreed in general that they would recognize "common but differentiated responsibilities," with greater responsibility for reducing greenhouse gas emissions in the near term on the part of developed/industrialized countries, which were listed and identified in Annex I of the UNFCCC and thereafter referred to as "Annex I" countries.

4.4.4 Convention on International Trade in Endangered Species (CITES)

The Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. The plan provides for protection and continuous monitoring of rare and endangered plant species within the forest reserve.

4.5 LOCAL INSTITUTIONS INVOLVED IN IMPLEMENTATION OF THE PROJECT

Institution	Role /responsibility
Kenya Forest Service	Provide the technical and expert advice during the EIA Study
	Conduct vehicle and foot patrols to avert illegal activities in the forest and fence vandalism.
	Provide technical and expert advice on natural forest conservation.
	Sensitise and mobilise the local community to ensure their full participation in the proposed project
Local Community	Provision of unskilled labour during the construction phase
	Assist in fence line maintenance during the operational phase
	Guard against fence vandalism through community policing
Ministry of Environment and Forestry	Provide policy directions on project implementation Establish a National Steering Committee for the project comprising of the key stakeholders
County Governments of Kakamega	Advise on adjacent land uses to the project site Creating awareness and public sensitization on the project to ensure community ownership Mobilize finances for fence maintenance
County government of Vihiga	Advise on adjacent land uses to the project site Creating awareness and public sensitization on the project to ensure community ownership Mobilize finances for fence maintenance
Kenya Wildlife Service	Provide technical and expert advice the monkeys other wildlife species conservation
	Provide technical support for the construction of the fence
	Provide human wildlife conflict resolution measures and process any compensation for wildlife injury and/or deaths to the local communities
	Sensitise and mobilise the local community to ensure their full participation in the proposed project
	Conduct the EIA study
Rhino Ark Charitable Trust	Provide fundraising initiatives for the project
	Ensure active engagement of relevant stakeholders to ensure successful project implementation
National Government Administration	Sensitize and mobilise the community to ensure community ownership of the proposed project
	Ensure security throughout the project cycle

5.0 CONSULTATION AND PUBLIC PARTICIPATION

5.1 Introduction

This chapter outlines the engagement of project stakeholders and is the main component of the ESIA process that provides clarity on the projects social and economic impacts based on the perception of diverse stakeholders. Stakeholders are ‘all those people and institutions who have an interest in the project ranging from being project beneficiaries, impact receptors or sources, proponents, implementers, government leaders, civil society organizations among others. These include those positively and negatively affected by the project. Stakeholder participation involves processes whereby all those with a stake in the outcome of a project can actively participate in decisions on planning and management. They share information and knowledge, and may contribute to the project, so as to enhance the success of the project and hence ultimately their own interests’. Different types of stakeholders’ contributed to the EIA process in different ways and inputs from the broad variety of stakeholders’ greatly complemented EIA process. Kenya has entered the era of participatory development in all matters of national life. Participation in this case is not just through elected representatives but also through direct action. The Environmental Management and Coordination Act (Revised, 2015) and its subsequent Environmental (Impact Assessment and Audit) Regulations, 2003 underscore the need for stakeholder participation in the EIA process.

5.2 Objectives of Public Participation

Public participation was carried out in order to:

- Inform the local people, leaders and other stakeholders about the proposed forest fencing project and its objectives;
- Initiate public involvement processes, in a bid to induce and cultivate a sense of peoples’ ownership to the project;
- Suggest and facilitate the peoples’ roles in the project’s sustainability, in terms of management and maintenance
- Seek views, concerns and opinions of people in the area concerning the project.
- Establish if the local people foresee any positive or negative environmental effects from the project and if so, how they would like the impacts to be mitigated;
- Find out if there are issues or places of cultural/or religious importance to the local communities that could be negatively impacted upon by the project and its infrastructure.

5.3 Identification of Stake holders

Like in all civil projects, the core stakeholders for the project are drawn from the government line Ministries Departments and Agencies (MDAs), Forest adjacent communities, Community Forest Associations CFAs, opinion leaders within the community;

local politicians; County Government leaders, Sub-County commissioners; Sub-County officers; area chiefs and their assistants and the Civil Society groups. This is the group that is likely to benefit or be affected by the proposed development. This category was also consulted as key informants on sectoral policy and to advise this EIA study on mitigation measures to be put in place so as to minimize adverse impacts in respective sectors.

5.4 Methodology

Stakeholder engagement was mainly achieved through direct interviews, focused group discussions, preliminary leaders meetings, workshops, questionnaire administration and public barazas. The EIA term began the public consultation process by holding preparatory meetings to strategize on how to engage the stakeholders in the EIA process together with the chiefs and assistant chiefs, who helped in the process of identification of the significant actors/ stakeholders who could provide data relevant to the proposed project. The following is a detailed discussion of public consultation methodology used by the EIA team.

Direct interviews were conducted with Foresters, ecosystem conservators, opinion leaders within the community; local politicians; County leaders, County commissioners; area chiefs and their assistants. Others include representative from the national government ministries. Their comments were sought through engaging them in discussions about the proposed project and the benefits that are likely to accrue as a result of its implementation. This kind of engagement gave the respondents the opportunity to give insights and details about the issue at hand.

5.4.1 Inception meetings

The ESIA team held preliminary meetings with the Governor Kakamega, Governor Vihiga, Regional County Commissioner and County Commissioners for the two counties that the project extends; this inception meeting with the top most county leaders laid a foundation for the wider community consultations/barazas. The meetings established a clear pathway for the wider stakeholder engagement and gave the ESIA team blessings to engage the local communities.

5.4.1.1 Meeting with Governor Kakamega County

The ESIA team conducting impact assessment study for the project visited his Excellency the Governor for Kakamega County on 3rd Sep 2019 at 9.00 am. His Excellency the Governor welcomed the team and the Assistant director (AD) western lead the team through self-introduction. The AD briefed the Governor on the fencing programme and welcomed the ESIA Team leader to give brief overview of ESIA process. Mr. Chege a representative from KFS also commended the Kakamega County Government for their support toward forest conservation and gave brief conservation status of Kakamega Forest. AD requested one officer from the County to Join the ESIA team.



Figure 8. Meeting with Governor Kakamega

His Excellency the Governor thanked the team for visiting and informed the team that he was in Nairobi when he received the Team visitation request. He said he came for the meeting because the project is the one the county has been longing for. He informed the team that he requested to bring in Chimpanzees into the forest to promote Tourism in the Country but he was given condition of fencing the forest. He said he had meetings with CS Environment and Forestry and quite a number of other stakeholders on Fencing Kakamega Forest where the County announced to put in 100 Million. He requested the Team to move fast in finishing the project. He said there is need to agree on the implementation committee for the project noting that the County Government has less knowledge and expertise on conservation. He also requested the fencing design to incorporate cable car. He assured the team that the County is committed and fully supports the project.

5.4. 1.2 Meeting with Governor Vihiga County

The team made a courtesy call to his Excellency the Governor on 4th Sep 2019 at his office. The Governor welcomed the team and the meeting started with self-introduction. The CEC Environment informed the Team to consider access point for the resources that are locked in within the forest like for instance Circumcision ceremony, KFS and other entrepreneurs also collect seeds from the forest others do sand harvest and forest products.



Figure 9. Vihiga County Governor with ESIA team

AD requested one person from the county to join the ESIA team and the Governor appointed chief officer environment to join the team and in case he is not available he will appoint an officer. KFS representative gave overview of challenges that Kakamega Forest face and highlighted on issue of population pressure in the area. The ESIA team Leader briefed the meeting on how the proposed project came to birth and the main objective of ESIA.

His Excellency the Governor thanked the team for the call and informed the team that he is well aware of the project from inception and had a meeting with the CEO Rhino Ark on the project. He agreed that the project was the way to go in conserving the Ecosystem. He highlighted the issue of population pressure that faces the forest. He also informed the meeting that the project was initially for Kakamega County alone but he proposed Vihiga County and Partnered the project. He said the County is Keen to partner with other stakeholders in contribution for the project. He also added that it's good the exercise is being executed by the experts from Government office and not consultant who mostly cheat. He assured the County's fully support for the project.

5.4.1.3 Meeting with the Regional and County commissioner



Figure 10 Meeting with regional and county commissioner

This meeting was held to brief the regional and county national government coordination unit on the project. The Commissioners were of great support of the project and advised as to work with the deputy commissioner's chiefs and sub chiefs as entry points to the communities. They further requested for constant briefs on the project. The regional commissioner informed the team that there is a joint project supervisory to ensure all projects are implemented as scheduled and minimize on stalled projects.

5.4.4.4 Meeting with Kakamega East area Chiefs and Assistant Chiefs

This meeting was organized through the DCC Shinyalu East sub-county madam Ramkat to take advantage of administrators' presence during the world literacy day held in Shinyalu the same day.

KWS and KFS officials held a courtesy call to the ACC where Warden in-charge KFNR and Forester Isecheno introduced the project process. They explained ESIA as a process before project implementation to allow for public participation, awareness and project acceptance. The ACC concurred with the team noting that most projects have stalled at implementation stage due to community/public rejection.

A brief meeting was thereafter organized to create awareness to chiefs and assistant chiefs and ensure their inclusion in the process and request them to call for the public Barazas.

Project overview

Madam Rose Malenya explained the project as a multi-sectoral stakeholder project including Ministry of Environment and forest, KFS, KWS, Rhino Ark and County governments of Kakamega and Vihiga. It aims at conserving Kakamega forest by providing an electric fence around the forest to ease management, control entry and enhance conservation. Stakeholders are drawn from national and county governments as well as private and private partnership where rhino ark Trust is a resource mobiliser. The project is at proposal stage and according to law, before such a project is implemented it has to undergo ESIA.

Q&A

Mr Harun Shiverenje sought to know the target forest blocks for the fence project since Kakamega forest exists in blocks and some blocks are under KWS and others under KFS management. It was explained that all blocks are under consideration. The management arrangement here is called co-management for different objectives but the whole resource is public.

The chiefs stated that communities have been using the forest for several activities and products – firewood, water, farming, connecting routes among others. They wondered what will happen if the forest is closed? The Warden Rose Malenya Explained that access gates will be provided for continued use and the project will not stop communities from utilizing the forest but will create order in forest use and management.

It was explained that a team of ESIA experts and the co-managers - KWS and KFS – who are also implementing partners will be creating awareness to communities about the project. This will commence soon. A draft programme for barazas in locations neighboring the forest

is already prepared and will be shared with the administrators. Communities will be reached through such barazas.

The meeting was also informed that two (2) workshops have been planned in Kakamega and Vihiga to reach and collect views from leaders and other stakeholders.

Communities should be encouraged to give out their views about the project during such sessions. It is the role of government to ensure communities are consulted and their views are documented.

Chiefs and assistant chiefs neighboring the forest are therefore requested to mobilize their communities as per the program that will be shared.



Figure11 Consultative meeting with area chiefs at Shinyalu DCC hall

5.4.2 Stakeholder Workshops

Three stakeholder consultation workshops were organised as part of the public consultation and participation process. Since the project extends from Kakamega to Vihiga County, inception workshops were held in the two counties respectively and a final workshop drawing stakeholders across the counties to share the ESIA findings and collect more views. The workshops were held on the 17th September, 19th September and 21st November 2019. The stakeholders comprised leaders representing the forest adjacent community, businesses, Non-Governmental Organizations, religious based groups, media, County and National government and civil society. The discussions in each of the workshops have been presented below as workshop proceedings.

5.4.2.1 Kakamega County Inception workshop



Figure 12. Participants follow workshop proceedings

Introduction

The stakeholder workshop for Kakamega County leaders was held on the 17th September, 2019 at Bishop Nicholas Stam Pastoral Centre. It was attended by a total of 105 leaders as per the annexed list (Annex 3) representing the forest adjacent community, businesses, Non-Governmental Organizations, religious based groups, media, County and National government.

The meeting started at 10:15am with a word of prayer from Reverend John Anyanga. The workshop moderator Mr. Bram Shikanda welcomed the participants and requested them to introduce themselves after which he took them through the day's program. He invited the DCC to welcome the participants to the meeting. He appreciated the Kenya Wildlife Service (KWS), Kenya Forest Service (KFS) and the Kakamega County Government team for undertaking the ESIA on the proposed fencing project. He informed members the importance of the proposed fence and encouraged them to participate fully and give their views and concerns objectively.

Opening Remarks by His Excellency the Governor of Kakamega County

Mr. Palapala the Chief Officer of **Environment** representing the Kakamega Governor, officially opened the workshop and emphasized on the importance of the fence in boosting conservation of the ecosystem, tourism diversification and reducing human wildlife conflict.

He welcomed the partners: Kenya Wildlife Service, Kenya Forest Service, Rhino Ark together with the County governments of Vihiga and Kakamega and the invited participants.

He informed the meeting that erecting an electric perimeter fence around the forest is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly with the partners in collaboration with communities.

The law requires that before such a project is implemented an Environmental and Social Impact Assessment study is undertaken whereby all stakeholders participate in consultations to generate views on the proposed project. The consultative forum may identify significant social concerns about the project if any, and obtain indigenous technical knowledge about the project area.

He informed the meeting that the Kakamega County government, was supportive of this project as Kakamega Forest is a key resource of the County with immense potential to contribute to eco-tourism and enhance revenue generation. This heritage enjoys global significance as the only tropical rain forest in Eastern Africa, and home to diverse flora and fauna. He assured the stakeholders that the County Government is committed to the forest conservation, protection and raising awareness on sustainable consumption of the natural resources therein;

The forest is a water tower which originates a number of rivers and streams that supply water to Lake Victoria. The resource supports host communities through eco-tourism activities that include adventure tourism, camping and bird watching.

I however wish to point out that population growth and technological innovations are proving to be a threat to sustainable utilization of natural resources. This risks the well-being of the present and future generations;

The County government intends to attain successful sustainable development which is premised on three pillars: economic, social and environmental. The strategic policies in natural resource management are aimed at building stakeholder partnerships with the community as well as the public and private conservation and tourism promotion entities including KWS, KFS and Rhino Ark;

Erecting of the electric perimeter fence is a natural outcome of this strategy geared towards technological support for sustainable development of Kakamega forest;

He noted that the growth in human population around the forest invites extreme pressure due to encroachment, poaching and human- wildlife conflict which threatens its existence;

The County has committed Shs100 million budget towards the fencing project and we are grateful to Rhino Ark and the other stakeholders for financial support;

I urge the Kakamega forest community to support this noble objective of conservation, revenue generation, eco-tourism and even more importantly to them, creation of employment opportunities for residents.

On this note, it is my great pleasure to declare this stakeholder consultative workshop on Environmental and Social Impact Assessment for the proposed construction of an electric perimeter fence at Kakamega forest officially open.

Workshop objectives

The Assistant Director welcomed the participants to Western Conservation Area and emphasized on the importance of conserving Kakamega rainforest being the eastern remnant of the guinea-congolese forest that hosts endemic animals and plants. He also enumerated the following objectives of the workshop;

- Inform stakeholders of the proposed fencing project
- Seek stakeholder opinions on the impacts and possible mitigation measures
- Promote sustainable development
- identify key impacts and measures for mitigating adverse impacts
- modify and or improve design
- ensure efficient resource use
- enhance social aspects of a project
- inform decision-making and condition-setting
- avoid serious and irreversible damage to the environment
- protect human health and safety

Remarks by Conservator of Forests KFS

Mr. Benedict Omondi the Head of Watershed Management representing the Conservator of Forests requested all stakeholders to give their views and assured them that their recommendations will be given to policy makers to give a way forward. He informed the participants that the fencing project was one of the tools that would enhance efforts to retain the integrity of the forest for now and future generations. He also noted that the forest is a watershed that once it is protected and is healthy will result to sustainable ecosystem services as well as tea plantations and other sources of livelihoods. He informed the meeting that the fence will make provision for regulated entry areas for the community. He asked participants and well wishers to invest more in promoting agroforestry to reduce reliance on the natural forest.

Remarks by Member of Parliament Shinyalu

Honorable Levi represented the Shinyalu Member of Parliament and informed the meeting of the need for proper sensitization and public participation reaching all stakeholders to enhance transparency and support for the project. He also reiterated that the community should benefit through employment as part of the fence construction and maintenance in the long-term.

Remarks by Senator Malala

Mr. Peter Okwako represented the Kakamega County Senator. He informed the stakeholders that the leaders of the County were keen on supporting Kenya Wildlife Service, Kenya Forest Service and the community in conserving forest. He however cautioned that the fencing project should be implemented humanely and any conflicting issues should be resolved amicably.

Remarks by a member of Forest Conservancy Committee, Western Kenya

Mr. Sylvester Mambili requested the community to support the fencing project for long term benefits in terms of sustainable livelihoods, provision of herbal medicine and use of cultural sites as one of the remaining indigenous forest in Western Kenya. He informed the stakeholders that from his various exposures to other fenced forests in other parts of the County, more benefits arise from stakeholders who support alternative source of livelihood especially for the adjacent communities.

Environmental and Social Impact Assessment (ESIA) Process

The team leader presented an overview of the ESIA process and why the proposed project needed the assessment. He also took the participants through the proposed fencing project description, scope and the type of fence with sample pictures.

EIA team leader further outlined the need for stakeholder involvement through the use of workshops, meetings and questionnaires. This engagements will bring out the potential impacts, both positive and negative, likely to be associated with the implementation of this project and the possible mitigation measures.

Project Milestones

- ESIA
- Survey of forest boundary
- Formation of the fence management committee
- Community sensitization & engagement
- Installation of fence
- Map degraded area and rehabilitate
- Re-introduction and re-stocking of species of concern for tourism

Plenary

Statements to be understandable by expanding on issue, response

The following issues and concerns were discussed in the plenary after the presentation of the proposed fence project and the ESIA process.

Issue	Response
Benjamin Okalo of KEEP was concerned whether the existing Forest zonation setting	He was informed that zonation schemes are done during the development of Management plans. The

various areas for specific purposes such as ecological conservation, tourism development and community exploitation would be considered.	management plans are regularly reviewed and this gives an opportunity for improved zonation as the need may arise
Lugano Mambiri inquired which tools had been used to create awareness to stakeholders.	Stakeholder engagement was carried out in collaboration with the Governor, County Commissioners, Chiefs, Sub-county and Ward administrators and CFA members. The ESIA team informed him so far 15 Villages in Kakamega County had been sensitized about the fencing project and their concerns documented through questionnaires. There were plans to visit more villages in Vihiga County.
Honorable Levi complained that public participation in Shinyalu was not well done	He was informed that a meeting had already been done through a baraza but more meetings will be organised and publicized widely
Mr. Bernard Assistant Chief of Mahiakalo comments	He informed the stakeholders that the people who made it to the barazas were representatives of the forest adjacent community and he believes that their views will enhance the project
Mr. Simon Tonui of NEMA advised on public participation process	Public participation approaches used in the past have been challenged in court. He pointed out that there was a need to identify the opinion leaders, and invisible beneficiaries of the forest for sufficient consultations
Joyce Jelagat of Kenya Water Towers Authority (KWTA) , Herbert of Eco2librium, Alexina Shirisia and Rose Nyangasi asked the livelihood options that will be given to the forest adjacent community after the fencing project	The meeting was informed that this was an opportunity for NGOs, CBOs, County government, different sectors to take up community projects. The community was challenged to come up with ideas of alternative livelihood such as <i>Mondia whytei</i> (Mukombero) farming, stingless bee keeping which is medicinal and ecotourism ventures.
Dr. Mbakaya of KARLO-ALUPE commente on alternative community livelihoods	He informed the workshop that the Sustainable Land Management and Sustainable Forest Management project started in the year 2017 and covers Kakamega, Vihiga & Nandi Counties The main issues of concern that it addresses in collaboration with various partners include; On-farms forestry where planting of trees is done on: Community land,Field plots,Woodlots ,Riverine Riparian,Public institutions, Civil pastures, Agro forestry systems (fodder banks)
Seth Otieno of KEFRI highlighted the following; • The threat of some undergrowth beneficial	He was assured that stakeholder sensitization would continue through KWS, KFS, NGOs and County

<p>plants going extinct due to over-grazing and community removal</p> <ul style="list-style-type: none"> • Frequent indigenous hardwood trees loss such as <i>excelsa</i> because it takes long to grow to maturity 	<p>Governments</p> <p>Other conservation groups around the Kakamega Ecosystem are also working with the community to sensitize them on some of the threatened species for conservation</p>
<p>Christopher Amutabi of Eco2librium Sustainable Solutions inquired about the fencing project interfering with wildlife migrating for example River Isiukhu connecting to Kisere and Kaimosi, Kibiri and Yala forest fragments</p>	<p>The scientists present informed the meeting that an ecological assessment will be carried out and all the migratory wildlife will be considered</p>
<p>Alexina Shirisia a member of CFA inquired the fate of ungazetted settlements and schools</p>	<p>The meeting was informed that the fence alignment will follow the forest boundary but where there are settlements further consultations will be done and any disputes resolved</p>
<p>Mzee Welukhe Comments</p>	<p>He said that he supports the fencing project but asked KWS & KFS to educate the community on agro forestry options and appropriate use of access gates. He also requested all present to continue with awareness for the future conservation of especially indigenous and medicinal trees</p>
<p>Silvester Mambili of FCC comments</p>	<p>He informed the stakeholders that Maragoli hills was forested but it has been degraded and was concerned that if Kakamega Ecosystem is not fenced it will also be degraded. He therefore urged all present to continue sensitizing community for the support of the fencing project</p>
<p>David Osir of Rondo retreat</p>	<p>He pointed out that Rondo visitation was currently low at 33% due to loss of attractions that has led to community guides loss of employment. He said that he supports the fencing project as a tool for sustainable use of the forest due to population constant increase. The fence will also add value through the development of eco-lodges, tourism number increase, diversified wildlife species and direct benefits to the community</p>
<p>Saul Shamala the Kisere chairman comments Fence will help reduce HWC</p>	<p>He added his support for the fencing project as a tool in reducing Human Wildlife Conflict</p>

A group work session was held to provide more insight on the project impacts.

The views that were recorded during workshop questionnaires are analysed here below. The views were clustered into groups of similar responses on the different issues in the questionnaires.

The comments are ranked according to the frequency of the response/comments given as follows:

Question	Response
What communication strategies do we employ to ensure there is adequate public involvement and community sensitization about the project	<ul style="list-style-type: none"> ➤ PA system ➤ Any community gathering to be used ➤ Posters and notice ➤ Local media ➤ Local leadership in community ➤ Local language use ➤ Baraza ➤ Road shows ➤ publications
<p>2. Community Livelihood</p> <p>Suggest practical projects that need to be implemented around the forest to minimise dependency on the forest</p>	<ul style="list-style-type: none"> ➤ water projects ➤ Ecotourism ➤ Agric – improved SLM ➤ Value addition to medicinal plants ➤ Domestication of indigenous plants ➤ Agro-forestry ➤ Dairy farming ➤ Beekeeping ➤ Fish farming ➤ High value indigenous crops
<p>3. Identify five most important positive impacts of the proposed forest fencing project? Include opportunities that come along with the project.</p>	<ul style="list-style-type: none"> ➤ Employment opportunities ➤ Reduced Human Wildlife Conflicts (HWC) ➤ Increased biodiversity ➤ Regeneration of degraded areas ➤ Increased water conservation ➤ Tourism ➤ Enlightenment of communities ➤ Carbon sequestration
<p>4. Identify five most important negative impacts of the proposed fencing project.</p>	<ul style="list-style-type: none"> ➤ Evictions ➤ Electrocutation of people ➤ Vegetation clearance ➤ Restricted access to forest resources ➤ Long distances to access forest

	<ul style="list-style-type: none"> ➤ Affect migratory species ➤ Food insecurity
5. Suggest possible mitigation measures to minimise the negative impacts	<ul style="list-style-type: none"> ➤ Compensate those with legal docs ➤ Manageable land use practices ➤ Ecological survey ➤ Community sensitization ➤ Financial support to groups ➤ Implement mgt plan

Closing remarks

The meeting was concluded with remarks by the Deputy County Commissioner, Kakamega Central - Denis Ogola. The DCC reiterated the importance of conserving natural resources in this Country to avert catastrophies such as habitat degradation and drying rivers as witnessed in Mau forest ecosystem. He emphasized the role of forests in alleviating climate changes through carbon sequestration hence reducing global warming. He informed the stakeholders that the Regional and County Commissioners were in support of the project and through his office he would mobilize the community consultations. He thanked the Kenya Wildlife Service, Kenya Forest Service, Rhino Ark, Kakamega County Government and all stakeholders present and promised to actively participate in the project to completion.

The meeting ended at 5:00pm with a word of prayer from Reverend Jonah Kanyanga.

5.4.2.2 Vihiga Inception Workshop



Figure13: Vihiga workshop participants during the workshop.

Introduction

The stakeholder workshop for Vihiga County leaders was held on the 19th September, 2019 at Mago Guest House. It was attended by a total of 76 leaders representing the forest adjacent community, businesses, Non-Governmental Organizations, religious based groups, media, County and National government.

The meeting started with a word of prayer from Bishop Konzolo at 10:20am.

Opening Remarks

Remarks by the County Commissioner

Mr. Elijah Nyachae the Assistant County Commissioner, Sabatia representing the County Commissioner welcomed the participants to the workshop. He informed the participants that the County Commissioner was in support of the proposed project. He pointed out that the conservation of the forest ecosystem is important due to its far reaching benefits in the future locally and in the region.

Workshop objectives

The Assistant Director welcomed the participants to Western Conservation Area and emphasized on the importance of conserving Kakamega rainforest being the eastern remnant of the guinea-congolean forest that hosts endemic animals and plants. He also enumerated the following objectives of the workshop;

- Inform stakeholders of the proposed fencing project
- Seek stakeholder opinions on the impacts and possible mitigation measures
- Promote sustainable development
- identify key impacts and measures for mitigating adverse impacts
- modify and or improve design
- ensure efficient resource use
- enhance social aspects of a project
- inform decision-making and condition-setting
- avoid serious and irreversible damage to the environment
- protect human health and safety

Remarks by Conservator of Forests KFS

Mr. Benedict Omondi the Head of Watershed Management representing the Conservator of Forests requested all stakeholders to give their views and assured them that their recommendations will be given to policy makers to give a way forward. He informed the participants that the fencing project was one of the tools that would enhance efforts to retain the integrity of the forest for now and future generations. He also noted that the forest is a watershed that once it is protected and is healthy will result to sustainable ecosystem services as well as tea plantations and other sources of livelihoods. He informed the meeting that the fence will make provision for regulated entry areas for the community. He asked participants and well wishers to invest more in promoting agroforestry to reduce reliance on the natural forest.

Remarks by the Head of Conservancy (HoC), Kenya Forest Service

Mr. William Cheptoo the Assistant Head of Conservancy representing the Western Head of Conservancy welcomed the participants to the region and informed the meeting that the

Kakamega ecosystem starts from Kibiri to Malava but the project will cover from Kisere to Kibiri forest blocks. He also promised that the HoC was keen on the ESIA process and would give support till the project completion.

Remarks by the Chief Officer, Water, Environment, Energy & Natural Resources– Vihiga

Dr. Richard Boiyo the Chief officer welcomed participants to Vihiga County and especially the ESIA team. He informed the meeting that the County Government was committed to conservation and was willing to collaborate with key stakeholders to increase the forest cover.

He invited the Member of County Executive Committee representing the Governor on matters Water, Environment, Energy and Natural Resources to emphasize the County Government's position on the Kakamega Forest Fencing project.

Remarks by the Vihiga County Governor

Professor Inonda the County Executive Committee (CEC) Member of Water, Environment, Energy and Natural Resources representing the Governor officially opened the workshop. He reiterated the importance of conserving Kakamega forest that is similar to Mabira in Uganda and Nyungwa in Rwanda. He said that the County government was contributing financially to the fencing project to improve the ecosystem services provision in the short and long term for the forest adjacent communities, the county and Kenya as a whole. He informed the meeting that the Governor was keen on supporting conservation through putting in place policies and regulations on Forest Management, Agro-forestry on farm tree growing and Climate Change. He further pointed out that the Vihiga Climate Change policy was the first one in the lake region economic zone that comprises of 14 counties and had resulted to the Climate Change Fund Act that opens to access to financial support from various donors.

He told the meeting that he is also a lead expert and requested for keenness on the ESIA team with handling the stakeholder views and the project impacts mitigation. He highlighted the challenge of some settlement schemes that had not been degazetted but assured all present that the County Government had maps and documentation on the list of the names of the people allocated land. He further offered support on the use of Geographic Information System technology to assist on the boundary mapping and verification issue between the settlement schemes and the forest land.

Remarks by the Member of County Assembly (MCA) -Shiru Ward and Deputy Speaker

Hon. Butuya the area MCA who is also the Deputy Speaker of the County Assembly thanked the Kenya Wildlife Service and Kenya Forest Service for creating an opportunity to raise awareness and collect stakeholder views on the fence project. He said he would support the fence project as long as the interests of the community are incorporated. He gave the example of Masai Mara Game Reserve that was benefitting the community and the county through revenue raised from high tourism numbers. He hoped the Kakamega Fence would result to more paying tourists for wildlife viewing for the benefit of the community and Vihiga County. He also requested KFS to put mechanisms to support Corporate Social Responsibility when harvesting the mature plantation trees so that what has been sold can

come back to Forest adjacent communities inform of social amenities such as all weather roads, churches and schools. He also requested the issue of degazetting the settlement schemes to be highly considered for harmonious implementation of the fencing project.

Remarks by the Member of Parliament

Hon. Charles Gimose expressed his support for environmental conservation but requested that the fence should give access gates for some community needs such as water as well as cultural shrines used as circumcision sites. He informed the participants that the settlement schemes currently in the forest land resulted from Government compulsory acquisition of private farms where government offices, hospitals and schools were built. He therefore warned that in this area the fencing is very emotive and had to be done very carefully to minimize negative impacts. He also informed the meeting that the degazetting of the settlement schemes was discussed in parliament but had taken too long for owners to be issued with title deeds. He informed the meeting that he would assist and cooperate with the boundary team in developing agreeable route for the proposed fence.

Remarks by a member of Forest Conservancy Committee, Western Kenya

Mr. Sylvester Mambili requested the community to support the fencing project for long term benefits in terms of sustainable livelihoods, provision of herbal medicine and use of cultural sites as one of the remaining indigenous forest in Western Kenya. He informed the stakeholders that from his various exposures to other fenced forests in other parts of the Country, more benefits arise from stakeholders who support alternative source of livelihood especially for the adjacent communities.

He informed the meeting that he believes charcoal burners are very destructive and should be arrested and punished regularly. He assured the forest adjacent community that grazing, water access, and PELIS allocated areas will continue as authorized by Kenya Forest Service but through access gates for control and monitoring purposes.

He also pointed out that glades are very key in Kakamega forest but some have been invaded by guavas and other invasive species and thus the need to focus on rehabilitation.

He raised the need for community engagement in coming up with alternative livelihoods to reduce forest dependence through development partners in collaboration with the county and the national government.

Environmental and Social Impact Assessment (ESIA) Process

The team leader presented an overview of the ESIA process and why the proposed project needed the assessment. He also took the participants through the proposed fencing project description, scope and the type of fence with sample pictures.

EIA team leader further outlined the need for stakeholder involvement through the use of workshops, meetings and questionnaires. This engagements will bring out the potential impacts, both positive and negative, likely to be associated with the implementation of this project and the possible mitigation measures. He also highlighted the project steps as below.

Project Milestones

- Environmental and Social Impact Assessment
- Community Sensitization & Engagement
- Survey of forest boundary
- Formation of the fence management committee
- Installation of fence
- Map degraded area and rehabilitate
- Re-introduction and re-stocking of species of concern for tourism

Plenary

The following issues and concerns were discussed in the plenary after the presentation of the proposed fence project and the ESIA process.

Issue	Response
<p>Charles Gimose (MP) inquired which map will be used for the fencing alignment</p>	<p>He was informed that the original forest map will be used and there will be a boundary survey that will determine the fence alignment</p> <p>He was informed that recommendations will be captured and will be required to push the agenda for title deed and get amicable solutions for the people and the forest fencing and conservation</p>
<p>Mr. David Kombuor the Vihiga County Surveyor informed the meeting that the National Land Commission was handling the settlement schemes issues.</p>	<p>The meeting was informed that the National Land Commission and the Land & survey director will give maps of the legal settlements and the list of genuine people</p> <p>They were also assured that a boundary survey team with representatives from the community, KFS, KWS, the National land Commission, Kakamega and Vihiga counties will give authenticated maps and a report.</p>
<p>Abdulrahman from Musasa complained that the invitation letters to the workshop had a mobile number that was not functional</p>	<p>He was apologized to and informed that one digit of the mobile number missed out as a result of a regrettable typing error and would be rectified in subsequent engagements.</p>
<p>Mr Musasa inquired how KWS and KFS with conflicting management approaches were</p>	<p>He was informed that both organizations are parastatals with different mandates but work for the same government on conservation of flora and fauna.</p>

working together on this project.	
<p>Susan Mahunya the Nyayo Tea Zones manager informed the meeting that it was established in 1986 through a government act as a buffer to stop forest destruction.</p> <p>She inquired whether the organization would be involved in the fencing project</p>	She was informed that Nyayo Tea Zones is an important stakeholder and was welcome on to the project.
John Mugunda inquired about the status of land for shaviringa cultural group	<p>The meeting was informed that the settlers who maybe affected are those who have gone beyond what was given in 1985</p> <p>The new buyers will be interviewed if they were sold forest land and that will be a crime</p>
Mr. Mambiri inquired whether the people at the Shiru settlement scheme will fenced in the forest land	He was informed that the boundary survey team will recommend the ideal fence alignment
Solomon Inyama a member of the Shaviringa cultural group informed the meeting that the community needs to use the forest shrines every 5 years. He requested if they will be allowed access points since their use has minimum impact and it allows forest recovery.	The workshop participants were informed that the fencing has a provision for access gates that will be placed in consultation with forest adjacent communities
Mr. Inyama also inquired whether the people who fall on the fence will be compensated	He was informed that continuous awareness will be done and the levels of voltage will vary to have low at day and higher at night. The participants were also assured that this fence was solar powered and it has been done in other areas and there has not been serious electrocutions.
Mr. Inyama requested for the local community from Kibiri to be employed during the fence installation and maintenance	He was assured that the community will be incorporated.
Reverend Kadambi emphasized the Spiritual value of the forest	The meeting was informed that the key sites should be identified and will be considered for installation of access

and that Culture helps to preserve	gates through the implementation plan He was also advised that the identified sites should be agreed on with the foresters and community every 5 years
Reverend Kadambi also inquired whether the community barazas were also for youth and women.	Te workshop was informed that the public meeting were open to all stakeholders and women and youth were particularly welcome.
Mr. Fredrick Manoa Igunza Chairman of evictees from Maragoli Have NGOs & CBOs Inquired whether the settlement schemes would be fenced into the forest land since they were not degazetted.	He was informed that the matter was being handled by the Land and Surveys office in Vihiga and the fencing will exclude them. He was also assured that the will be a boundary team that will follow up to come up with the fence alignment.
Mr. Bernaba Shaviringa informed the meeting that Tiriki East had no allocated Market yet. He requested the fence to leave an area that can be converted to a market.	The meeting was informed that acquiring additional land in the forest requires the process of degazettement through the parliament They were also warned that the Government does not allow further encroachment onto forest land.

Workshop questionnaire Group Discussion

The team leader divided the workshop participants into 3 groups which discussed the 5 questions and their responses were merged as below. The views were clustered into groups of similar responses on the different issues in the questionnaires.

The comments are ranked according to the frequency of the response/comments given as follows:

Question	Response
1 Public Participation What communication strategies will be employed to ensure there is adequate public involvement and community sensitization about the project	<ul style="list-style-type: none"> ➤ Road shows, ➤ Churches ➤ Community barazas, ➤ Use of social media, churches, mosques, traditional shrines, ➤ Use of posters, ➤ Use of opinion leaders,
2. Community Livelihood	<ul style="list-style-type: none"> ➤ Fish farming,

<p>Suggest practical projects that need to be implemented around the forest to minimise dependency on the forest</p>	<ul style="list-style-type: none"> ➤ Establishing cultural centers, ➤ zero grazing cattle & goats ➤ introduction of improved livestock breeds ➤ Use of alternative energy such as biogas, energy saving Jikos, Electricity , gas, ➤ Artisanal Mining ➤ Ecotourism enterprises, ➤ Wildlife enterprises such as snake, guinea fowl, chameleon farming, ➤ domestication of medicinal plants, ➤ establishment of tree nurseries, ➤ on farm agro forestry, ➤ installation of piped water
<p>3. Identify five most important positive impacts of the proposed forest fencing project? Include opportunities that come along with the project.</p>	<ul style="list-style-type: none"> ➤ Reduce pressure ➤ Minimize Human Wildlife Conflict ➤ Carbon offset/ sequestration ➤ Sustainable forest use ➤ Employment ➤ Beautifucation ➤ Tourism & ecotourism ➤ Control livestock numbers ➤ Better living standards in the longterm ➤ Forest Regeneration ➤ Value addition of the forest ➤ better Migration of wild animals ➤ Create employment opportunities ➤ Introduction of other wildlife species ➤ Alternative livelihoods ➤ Improved security
<p>4. Identify five most important negative impacts of the proposed fencing project.</p>	<ul style="list-style-type: none"> ➤ Habitat loss during implementation

	<ul style="list-style-type: none"> ➤ Long distance walks to access gates ➤ Restocking of wildlife can lead to over population ➤ Risk of wildlife attacks ➤ Displacement ➤ Evictions ➤ Affect livelihoods ➤ Controlled movement
<p>5. Suggest possible mitigation measures to minimise the negative impacts</p>	<ul style="list-style-type: none"> ➤ Sensitization of community ➤ Awareness creation on conservation ➤ No of gates to make considerations ➤ School curriculum on conservation ➤ Implement appropriate Corporate Social Responsibility projects ➤ Allocate resources to KFS and KWS to employ more people ➤ Negotiation, mediation & arbitration

Closing remarks

ESIA Team Leader

Mr. Peter Mwangi the team leader assured the stakeholders that once the report was ready it would be submitted to NEMA who would publish it in the newspapers for further comments. He also informed the meeting that consultations would continue through village meetings to incorporate the issues of concern and recommendations into the report. The Warden in collaboration with Foresters will engage all stakeholders at various levels.

Director of Lands Survey in Vihiga County

Mr. David Kombuor the Director of Lands Survey in Vihiga County closed the workshop by giving direction on the process of the degazettement of the settlement schemes. He assured the participants that the County Government through his office was following the procedures to ensure all rightful beneficiaries would be allocated land. He however warned that those who had encroached into the forest land will have to be relocated.

The meeting ended at 5:00 pm with a word of prayer from Reverend Khadambi.

5.4.2.3 Final stakeholder workshop

The workshop was attended by representatives from different stakeholder organizations and areas of service including but not limited to National and County governments, NGOs, private sector and community based organizations linked to conservation.

The meeting started at 10:26 am by a word of prayer from Rev .Ephraim Konzolo General Secretary Friends Church, followed by self-introduction of the members.

Members were taken through the programme of the workshop by Mr. Mwangi who apologized for starting the meeting late because of technological inconveniences caused by power blackout.

Opening remarks

The Kenya Wildlife Service Assistant Director Western Conservation Area Mr. Osman welcomed the participants to the meeting after recognizing all the senior officers present. He highlighted the critical importance of the forest in biodiversity conservation and observed that the fence project will enhance the forest health and reduce human wildlife conflict. He underscored the significance role of forest adjustment communities in conserving the forest.

County Commissioner Kakamega representative – Mr. Robert Nzuki

The County Commissioner of Kakamega confirmed the office active participation in the communities as per the constitutional requirements for public participation during the process. He also stated that the chiefs and assistant chiefs mobilized the communities around the project area to enable public participation in collection of views. He stated the ESIA process started two month ago, involving chiefs and asst. chiefs in creating awareness together with the ESIA team. The team had assured the public that their findings would be shared in the report and workshop as fulfilled today.

County Commissioner Vihiga County representative – Mr. Fraklin

He thanked the ESIA team for the invitation and commended the work of KFS and KWS in conservation.

Community Forest Conservation Committee (CFCC) Western Region - Mr. John Baraza

The chair stated the main role of FCC is to assist in implementing forest Act 2016. He said that they work hand in hand with KFS through CFAs, CBOs, TMAs, and that apart from participating in ongoing planting of trees the stakeholder groups assist in management of forests in a sustainable manner. He added that fencing the forest will protect resources and allow controlled access to forests by communities as well as encourage ecotourism to market Kakamega forest internationally. He reminded his group that the “Shamba system” was coming to an end in Kenya and there was need to come up with better conservation based activities to allow them benefit maximally from the forest.

He was impressed with the Fencing project and commended the implementers of the project and especially the ESIA team for the community engagement that they did.

C.E.C. Trade, Tourism and Industrialization Representative CGK - Mr. Stephen Musee

Mr. Musee appreciated the project and its uniqueness in its own context. He pointed out that the project was uniting Kakamega and Vihiga counties, KWS, KFS Rhino ark and the community with a main objective of conserving Kakamega forest with an integrated approach on how the community will benefit from the project.

Workshop objectives

Participants were taken through the Project overview –

Workshop objectives were presented as

1. To create awareness for ESIA process;
2. To share preliminary findings with the respective stakeholders and the public; and
3. To collect more views from the stakeholders in relation to the project;

by Mr. Chege

Official Opening remarks by County Government of Kakamega Governor Representative – Mr. Antony Munanga Director; Natural Resources

The Governor representative and County Director of Natural Resources recognized efforts of partnership between the County government of Kakamega and KWS in formulating terms of reference for the EIA exercise. He stressed that CGK is committed to working with the ESIA team and remains one of the implementing stakeholder of the project. He informed the meeting that the project is complex and it requires all stakeholders on board.

Mr. Antony went through a brief on the uniqueness of Kakamega Forest stating that it's a world heritage site with endemic species which need to be protected and the only equatorial forest facing illegal logging, degradation and unsuitable utilization thus need to find a lasting solution. He informed the participants that consultations within relevant county ministries have recognized Nature Based Enterprises and ABS activities, included them in CIDP funding to minimize current pressure on natural resources

He urged members to take public participation keenly to ensure their views are recorded for its these views that will play a major role in designing the fence, hence reduce conflict.

He stated that Kakamega county is waiting for the approval and willing to support the implementation immediately because Kakamega forest has a great potential for ecotourism. He commented efforts of KWS, KFS, Rhino Ark, County governments of Kakamega and Vihiga as well as the National government active participation in the process to save a diminishing natural resource.

He then declared the meeting officially opened.

Given the busy schedule of policy makers, MCAs gave their views under the guidance of Hon. John Musilwa – M.C.A Isukha Central

Hon. John Musilwa

He acknowledged the presence of other MCAs in the meeting and requested them to give their views. Hon Helemina L'lanziva Isukha North MCA gave the ecological benefits that the Kakamega area is getting from Kakamega forest. She highlighted that her Ward neighbors the Forest and that her people including herself conserves the forest. She requested the KFS and KWS to allow her people to benefit from the forest in terms of grazing, collecting firewood, and among other benefits that people get from the forest. She urged her colleagues and other leaders to sensitize people on the safety of the fence and the importance of conservation.

Hon. Elphas Shilosio MCA - Muranda CGK

He stressed on continued sensitization of the community on fencing project. He wanted to know whether Nyayo tea zone will be fenced in or out. He also wanted to know who benefits from Carbon Credits of Kakamega Forest.

Hon Calystus Ayodi - MCA Muhundu ward CGV

He acknowledged and commended the ESIA team for public engagement that they undertook with the local communities. He asked how local communities will continue accessing the forest after fencing for cultural activities, medicinal herbs and tree harvesting. Hon Musilwa responded that there will be access gates for entrance to access all legal activities in the forest as earlier communicated during meetings and barazas.

Hon Nixon Bitiye - MCA Shiru CGV

He stressed that cultural sites, gold mines areas with medicinal herbs like mukombelo must be fenced outside. He wanted to know the fate of Shaviringa and Idereri settlements whose inhabitants were settled in the forest to pave way for Vihiga county headquarters and the degazetment process had taken decades.

Hon. Limisi MCA - Isukha East Ward

He appreciated the project and confirmed that he had been involved in the process. He emphasized the need of leaders being involved in the project after the approval by NEMA. He emphasised the need for continued community sensitization and proposed the distance in between gates to be reasonably considered considering the old people in the community.

Hon Musilwa summarized the session and suggested distance between gates to be reduced sighting 4kms as being inconvenient to many community members. He requested to understand the mechanism that is in place to ensure the proposed introduction of the Chimpanzee will have no harm on the people around and how to trees along the proposed fence line will be disposed off.

Mr. Peter Mwangi the ESIA Lead Expert - Proposed project Situation Analysis; Drivers of Change, base line Survey, proposed project impacts and the ESIA recommendation

Plenary

Plenary session was led by Mr Chege

Issues of concern discussed in the plenary of the proposed fence project ESIA findings.

Issues	Response
<p>Bernard Muhanda - wanted to know Nyayo Tea zone will be fenced inside or outside though he preferred them being fenced inside to avoid more encroachment. He also indicated that he does not see the need of introducing more wildlife species from Congo forest and stressed that Kakamega forest according to him is beautiful enough for eco- tourism he added that among the CFAs, they have trained scouts who he would wish they be involved in the project.</p>	<p>Mr. Chege said before fencing; a committee will be formed and such suggestions will be discussed. He assured the participants that introduction of animals was just a proposal and another suitability assessment will be undertaken in consultation with community members before new animals are brought. Ms. Anastasia added that Kakamega forest is related to congolean forest so the animals in Congo forest can comfortably survive in Kakamega forest though there are procedures to be followed before implementation.</p>
<p>Rev. John Kanyanga wish was they include church organizations like NCKK in capacity building as this will contribute highly in the community embracing the project He as well raised the issue of carbon credit. He stated that they signed an agreement and to date nothing has been done. He emphasized on some activities being banned as they lead to destruction of the forest even if it's fenced. He didn't see the need of allowing mining activities within the forest for they destroy the forest.</p>	<p>Madam Alice (Forester Kakamega) - agreed that carbon credit agreement was there and groups involved were ECO2 and MUILESHI. Currently consultations were ongoing and feedback would be shared Mr. Chege - appreciated his concern and said the move will be done gradually. For instance the, current legal grazing permits indicate that currently 1100 animals graze in the forest and this can be archived if the community members are given an alternative like better breeds.</p>
<p>John Kennedy - informed members of the upcoming forest marathon and encouraged the team to use that opportunity to emphasize the importance of fencing the forest.</p>	<p>MR. Chege – confirmed that this was a good initiative and encouraged members to participate.</p>
<p>Daniel Muchesia - sought to know if they were able to identify some other genetic species and if they had plans of replacing the over-exploited indigenous trees. He indicated the urgency of establishment of woodlots as away preventing the community</p>	<p>John Barasa - informed members that extraction of wood and wood products had been stopped for the next four months and indicated that the Government had not stopped anyone from mining but must have done EIA before being given a go ahead.</p>

<p>from over-depending on the forest.</p>	
<p>Wycliffe Amulavu -Tiriki elder - was of the opinion that, their shrines are fenced inside the forest to ease protection. It was important community leaders are involved in the process.</p>	<p>Mr.Chege assured the elders that their request was heard and will be put on consideration.</p>
<p>Abraham Imbayi was concerned about the endemic species e.g Kaimosi blind snake; migrant birds from Europe; and medicinal plants conservation. He wanted to know how locals were going to benefit from all this? Welcomed the team to borrow monitoring information from his tour guiding group.</p>	<p>Mr. Mambili assured participants that fencing of Kakamega forest is not going to prevent community members from utilizing the forest legally but prevents illegal activities like charcoal burning. He said with time they will be need of introducing green charcoal. He confirmed that sensitization had helped the community members embrace the project.</p> <p>MR. Chege informed members that the ESIA report in itself will attract investors. He assured Abraham the team will appreciate if he shared his findings.</p> <p>Ms. Anastacia informed the members that there is county technical team dealing with the research on Genetic resources. It is as well an opportunity for MMUST to do the same.</p>
<p>Rev. Khatambi requested KFS and KWS to be sober when addressing the public to ensure they aren't aggressive He requested the team to continue with sensitization as they wait for response from NEMA He encouraged KFS to awaken the other private forests as it will assist reduce pressure on the forest. He requested the administration to consider shrines where the spiritual based groups go for prayers.</p>	<p>Mr.Chege informed members that KFS is currently embracing human right based approach which emphasizes respect and the rangers are being trained on the same. He agreed that woodlots be encouraged by KFS.</p>
<p>Paul Lumadi indicated that fencing around the big trees, will make the animals like monkey to cross the fence. He indicated that if communities are given alternative livelihood, they will embrace the</p>	<p>Ms. Anastasia appreciated the initiative and it will take the community and the government to ensure the forest has a future</p>

project. For instance they are currently encouraging the communities to plant <i>Mondia whytei</i> and there is a company that is buying them and he believes through that people will not go to the forest for <i>Mondia</i> .	
Samson Mbuyuka raised concern on how the locals are going to get the seedlings to come up with private forest.	Ecosystem conservator Mr. Rono assured him of his assistance with the seedlings and indicated that community members in his area could collect them from his office
Julius Maloba Lunayo appreciated the project and requested the Shrines be captured in the map of the forest	Mr. Chege confirmed that the forest boundary had not been re-aligned and assured him it will be considered when mapping
John Luseno appreciated the project and he said there is need for site assessment for the sake of vegetation regeneration. He shared with members that they have a briquette project as alternative source of fuel.	John Luseno was encouraged to document the initiative being done to attract funding

Closing Remarks

The head of conservancy Mr. Lawi Okuto thanked participants, organizers and experts for the good report. He thanked sponsors: Rhino Ark, KFS, KWS, Kakamega and Vihiga County for the initiative.

He appreciated the move stating that Maragoli hills that was once a beautiful forest was destroyed leaving the area bare and rocky.

He stated that the major contribution to ensure the forest is conserved will be through alternative use like establishing woodlot within farmlands, areas which were taken and are not put in proper use be repossessed and planted with indigenous trees.

He appreciated the activities already in place indicating it is the right direction; for instance the briquette which will reduce on over-utilization of the forest, the community being guided on how to generate income through planting of *Mondia* (mukombelo) and ensuring ready market by the investor.

He said he is certain beyond doubts that the project will be accepted and appreciated the politicians for supporting the move. He encouraged members to give comments when the report is shared because it is only by them giving their views that their issues will be addressed.

5.4.3 COMMUNITY BARAZAS

A total fifteen community barazas were organised and held at strategic meeting centres around the forest. The aim was to consult and enlist views from the primary stakeholders who interact with the forest on regular basis. The meetings were convened by the local leaders and the ESIA team presented the fence project overview to participants. Each of the Baraza deliberations has been summarized below.

5.4.3.1 Shamiloli Baraza

Shamiloli Community Baraza was held on 10th Sep 2019 at Shamiloli shopping centre. It was facilitated by the area Assistant chief Mr. Julius Alexander. The Baraza was attended by a total number of 73 participants. (Annex attendance list)

After the introductions of the ESIA team local administration KFS board representative of the Forest Conservation Committee in Western Kenya Mr. Sylvester Mambili gave the opening remarks. Mr. Mambili informed the meeting that Kakamega forest was recognised as the best managed forest in Kenya in 2017.. He informed participants that the proposed fence project will mainly affect charcoal burners and traders and anyone who engages in illegal forest activities He challenged the youth to ensure protection of the forest and to say no to illegal activities in the forest. The Ecosystem conservator Kakamega County Mr John Rono also informed the community that the Forest management Act incorporates communities in conservation of the Forest through CFA. The ESIA team leader Mr. Peter Mwangi explained the proposed fence project and the objectives of the ESIA including the requirement to consult and inform the community as the main stakeholders of the project. The participants were taken through a questionnaire which they filled and returned, . The meeting was thereafter open to question and answer session which the ESIA Experts documented and summarized.

Community project concerns from Shamiloli Location

Issue raised	Response
There are Invasive species dominating some forest glades indigenous trees and vegetation where community graze their livestock	The Agencies acknowledged the presence of Invasive species dominating parts of Kakamega forest and assured the community that control of invasive species will be incorporated as part of restoration action and project mitigation measures
Access gates to the forest and the number of gates for the communities.	There will be access gates for entering the forest and it will be of two type the big gates and small once, the number of gates will be decided as the project progress and that the communities will be involved in deciding some of the gate location through

	fence committees
Project Employment opportunities and methods employed in the recruitment of unskilled labour.	The project will make use of local content as much as possible. The unskilled labour will be sourced from the local community and recruitment modalities will be agreed by the fence implantation committees at village level community representatives
Where to get permit for access to Forest resource	Permit to enter the forest the community was informed to get in touch with their CFA representative. The area CFA's are also urged to make awareness on the conservation and management of the forest. The Ecosystem Conservator Kakamega informed the community that they are reviewing the management plan through community involving and he urged them to participate so that all their issues concerning Kakamega forest are well documented.
Purpose and objective of the fence not well understood by the community.	The main aim of the fence was to protect and conserve Kakamega forest, not to restrict the community from getting resources from the forest. Also the fence will make the boundaries for the forest visible.
Need to understand whether or not the normal activities like firewood, water, livestock grazing are allowed in the forest after fencing	The fence will follow the forest boundary only leaving a maintenance buffer but gates will be provided to allow access to essential ecosystem services. Location of the gates will be discussed and shared with the community.
Request to lift the ban on forest products for Kakamega Forest highlighting that the community are well protecting the forest	The Agencies acknowledged the presence of Invasive species dominating parts of Kakamega forest and assured the community that it will be controlled and also the concern will be incorporated into the report
Request for friendly relationship between the community, KWS and the KFS to ensure success in Conservation	There will be an access gates for entering the forest and it will be of two type the big gates and small once, the number of gates will be decided as the project progress and that the communities will be informed

How the forest would be aligned relative to the adjacent private farms and the forest boundary

The unskilled labour will be sourced from the local community and the modalities will be agreed by the implementing agencies and the local community representatives



Figure 8 Shamiloli meeting

5.4.3.2 Mahiakalo Baraza

The Baraza was held on 10th Sep 2019 at Mahiakalo Chief's office ground facilitated by the area chief Mr. Morris. The Baraza was attended by a total number of 56 participants(annex list) attendance list. The ESIA team leader informed the community on the proposed fencing project in details. The ESIA team recorded open ended questions and concern of the community as follows:

Community concerns from Mahiakalo location

Issue raised	Response
Community access to forest after fencing for grazing, medicinal herb, water, firewood and other resources.	There will be access gates provided the communities were informed that their views will be captured in the report and that there will be fence committee with community representative that will decide where to have the gates.
One elder confirmed his support for the fencing but wanted to know the fence boundaries	The fence will follow the forest boundary and a survey will be done during fence alignment
need to know whether there will be introduction of new wild animals into the	Those that have never existed in Kakamega forest will not be

forest	introduced but there is a proposal from the county Government to introduce animal like chimpanzee to promote tourism development in the area. The communities were assured that if the introductions happen they will be informed.
Need to know the threat of electric fence	The proposed fence design has succeeded in other areas like Aberdare's and Mount Kenya. There were no cases of human injuries reported. The agencies assured the community that when fencing start there will be more sensitization of the community on safety.
Space between the farm and fencing that will be left after fencing	There will be space for maintenance of the fence like 2-3 meters.
The fate of PELIS after fencing	It will continue but according to the law and regulations of PELIS.
Need to know time of fencing	After the ESIA report is finalized and submitted to NEMA for approval which is after 3 months. When approved depending on availability of fund the project will roll out.
Cost/benefit sharing mechanisms between the implementing agencies and the community.	The communities were requested to form groups that would be directly linked to the fencing project that could attract funding for their activities from donors The three agencies can assist in introducing the community project proposals to prospective donors.
One elder announced his support for the fence but wanted to know the Alternative livelihood that he will depend on after fencing the forest which he depend on	A well conserved forest could attract ecotourism ventures that can accrue revenue to the community. Alternative livelihood like bee keeping and poultry farm can also be viable. The team emphasized that the views the community were providing will be

incorporated in the report.

Figure 9. Community Baraza at Mahiakalo chief's office



5.4.3.3 Ivihiga Baraza

The Baraza was conducted on 11th Sep 2019 at Ivihiga chief's office facilitated by the area Chief M/s Loise. She informed the ESIA team that the location has three sub-location Lunyu, Ikhuya and Lukusi. The Baraza was attended by a total number of 59 participants who signed the attendance list.

The FCC chair informed the participants that the proposed fence project will restrict illegal actors like charcoal burners.

The participants were given more than 50 questionnaires which they filled and returned 32 questionnaires. The participants were also given opportunity to ask open questions and the ESIA team recorded the following issues/concerns from the community.

Community concerns in IVihiga

Issue raised	Response
Need to know the fence type	The fence will be electric and it will be design in a way that it will not cause human accident. When the fence start the technical people will do public awareness. The participants were informed that the fence has succeeded in other areas and that they have nothing to fear.
Need to know whether there is introduction of human threat animals in	No plan to introduce problematic animals that never inhabited Kakamega Forest. There is a

Kakamega Forest	proposal by the County government of Kakamega to introduce Chimpanzees that do well in equatorial rainforest.
Compensation for crop damage by wildlife that stray from the forest.	KWS does the processing of compensation for wild animal attacks and deaths and the communities were encouraged to fill in the compensation forms when such cases arise.
After fencing who will Guard the Gates, and request for friendly relationship between KWS and KFS rangers and the communities	Those who guard the gate will be KFS, KWS and a community member
The benefits that will come with the fence	A well conserved forest could attract ecotourism ventures that can accrue revenue to the community.

5.4.3.4 CHIROBANI BARAZA

The Baraza was held on 11th September 2019 at Itumbi Pefa church Chirobani, facilitated by area Assistant chief Mr. Willy Sengua. The Baraza was attended by a total number of 56 participants who signed the attendance list. The ESIA team leader informed the participants on the proposed fencing project and the objectives of the Baraza. The participants were given more than 50 questionnaires which they filled and returned 28 questionnaires. The participants were also given opportunity to ask open questions and the ESIA team recorded the following issues/concerns from the community.

Concerns/ Questions from the community

- The ESIA lead expert requested the participants to highlight the main activities that are causing destruction of Kakamega Forest
- Reason for Community entering/reliance on Kakamega Forest
- Need to know the reason for fencing and when the fence starts
- Request for piped water from the forest to the community
- Need to be educated on new project for livelihood
- Human wildlife conflict
- Poverty
- Suggestion for youth employment to guard the forest instead of fencing
- Need to know the fate of those who live in the forest land
- How to source herbal medicine, firewood, water and other materials from the forest after fencing

Agencies/community responses

- The participants gave cause of destruction for Kakamega Forest as: Charcoal burning, timber, poverty that cause reliance on the forest products, medicinal herbs, burning for regeneration of grasses. The community also identified the main reasons for entering the forest as grazing and water.

- Reason for fencing is to protect and conserve the forest
- There will be no restriction to the activities that the community are practicing in the forest so long as its according to the law.
- Fencing will reduce human wildlife conflict
- The unskilled labour will be sourced from the communities that surrounds the forest no outsider will be allowed except the few technical people. Community leaders will be involved in identifying there people for the job.
- The community was informed that there is forest management plan review that is underway and that there will be public awareness on the same. Community was told to express all their views concerning forest in that management plan.
- The agencies assured the community that all their views and concerns will be incorporated into the report.



Figure 16: Community Baraza at Itumbi PEFA church Chirobani

5.4.3.5 VIRHEMBE BARAZA

The Baraza was held on 12th Sep 2019 at Assistant chief office Virhembe sub-location. The Baraza was attended by a total number of 59 participants who signed the attendance list. In attendance was Mr. Elisha the community area administrator. Assistant chief Mrs. Mercelina Likalaba facilitated the meeting and welcomed the ESIA team. ESIA lead expert informed the community on the purpose of the Baraza and gave details on the proposed fencing of Kakamega forest. The participants were given more than 50 questionnaires which they filled and returned 35 questionnaires. The participants were also given opportunity to ask open questions and the ESIA team recorded the following issues/concerns from the community.

Community concerns

- Mr. Msinji one of the community member asked the Agencies how he will source carving materials that he source from the forest after fencing
- Mr. Msinji also asked why the Government want to fence the forest , highlighting the community have lived with the forest for so long without destruction

- Mr. Litunda thanked the team for informing the community about the project. He also asked the team on the criteria that will be used in putting entrance Gates
- Need to know whether the accident that results from the fence insured
- Need to know whether there is receipt for entering the forest after fencing
- Concerns on introduction of new wild animals that can harm human

Agencies response

- There will be no restriction to the activities that the community are practicing in the forest so long as it's according to the law.
- Reason for fencing is to protect and conserve the forest. Also fencing will make the forest boundary visible.
- The fence will be electric and it will be design in a way that it will not cause human accident. When the fence start the technical people will do public awareness. The participants were informed that the fence has succeeded in other areas and that they have nothing to fear.
- No plan to introduce problematic animals that never inhabited Kakamega Forest
- The communities were informed that their views will be capture in the report and that there will be committee inclusive of community representative that will decide where to put the gates.



Figure 10 Community Baraza at Assistant chief office Virhembe sub-location

5.4.3.6 BUYANGU BARAZA

The Baraza was held on 16th Sep 2019 in Buyangu church facilitated by the area chief and assistant chief. The Baraza was attended by a total number of 42 participants who

Buyangu Community concerns

- Reason for fencing
- Need to know the fence boundary
- The community have only one road entrance to the forest that connect them to other areas, need to know whether the road will be closed after fencing
- Chairman KAFCOA appreciated KWS for giving out school compound and requested assistance to get the title deeds for the school

- Need to know the programme that will come with the fencing project
- Modalities use to source unskilled labour for the fencing work
- Head teacher Buyangu primary requested an access gate and fencing the school compound for student security
- Compensation for wildlife damage
- How to move stray wild animals that are living in the community farm
- Need to know whether there is introduction of new wildlife into the forest
- Difference between National Reserve and National Park
- Request for bench marking for the community to Aberdare Forest or other forest that have similar fence

Agencies response

- To conserve the forest for present and future generation, to make the forest boundary known to the community.
- The community was informed that the fence will follow the forest boundary
- The agencies clarified that the road will be considered when fencing.
- Title deeds will be decided by the government
- The agencies informed the community that the project is owned by national government, County and private partnership. The CRS projects will come through the Count, KWS and KFS.
- The fence technicians together with community leaders will select people from the community to do the fencing work.
- KWS does the processing of compensation for wild animal attacks and deaths and the communities were encouraged to fill in the compensation forms when such cases arise.
- Community to report the mater to KWS for action
- Those that have never existed in Kakamega forest will not be introduced but there is a proposal from the county Government to introduce animal like chimpanzee to promote tourism development in the area. The communities were assured that if the introduction happens they will be informed.
- In parks there is complete protection of natural resources and the only activities allowed are tourism and research. On the other hand in reserves, human activities are allowed under specific conditions.



Figure 18: Buyangu community Baraza at Buyangu church

5.4.3.7 LUBAO BARAZA

The Baraza was held on 16th Sep 2019 at Lubao assistant chief's office ground. The Baraza was facilitated by the area Chief and the Assistant chief. The Baraza was attended by a total number of 24 participants. The participants were also given opportunity to ask open questions and the ESIA team recorded the following issues/concerns from the community.

Concerns from the Lubao community

- Alternative livelihoods
- Accessibility to the forest resource after fencing
- Need to know whether Shikusa prison will be fenced in or out
- Need to know whether there is introduction of new animals
- The fate of Connecting route to the forest after fencing
- Requested not to bring outsiders for fencing work specifically the unskilled labour
- The fate of Shingo primary school that is in the forest land

Agencies response

- The communities were informed that a well conserved forest could attract ecotourism ventures that can accrue revenue to the community. Alternative livelihood like bee keeping and poultry farm can also be viable.
- All legal activities that the community are undertaking according to the law will not be restricted.
- The community was assured that the issue will be discussed and incorporated into the report
- Those that have never existed in Kakamega forest will not be introduced but there is a proposal from the county Government to introduce animal like chimpanzee to promote tourism development in the area. The communities were assured that if the introduction happens they will be informed.
- Official roads that are gazetted will remain but the smaller once might be closed.
- The communities were informed that their views will be capture in the
- The unskilled labour will be sourced from the communities that surround the forest no outsider will be allowed except the few technical people. Community leaders will be involved in identifying there people for the job.



Figure19: Lubao community Baraza at chiefs office ground

5.4.3.8 Ikuywa Baraza

The Baraza was held on 23rd Sep 2019 at Ikuywa dispensary ground. The Baraza was facilitated by the area Chief. The Baraza was attended by a total number of 56 participants.

The agencies present and the ESIA experts informed the community on the proposed fencing of Kakamega forest. They gave importance of fencing and highlighted many destruction that the forest is facing due to population pressure. The participants were given over 50 questionnaires which they filled and returned 47 questionnaires. The participants were also given opportunity to ask open questions and the ESIA team recorded the following issues/concerns from the community.

.Concerns from the Ikuywa community

- Requested Nyayo tea to be planted on their side
- Access gates for cultural rite like circumcision and also water, firewood, grazing etc
- Benefits of protecting the forest for the community
- Presence of problematic snake and request for compensation from KWS
- Need to know the space between the farm and the forest boundary
- Unskilled labour for fencing work to be sourced from the community

Agencies response

- There will be no restriction to the activities that the community are practicing in the forest so long as it's according to the law.
- Medicinal benefits, rain, food security and among others
- The communities were informed that there is no compensation for snake bite.
- There will be space for maintenance of the fence like 2-3 meters.
- The unskilled labour will be sourced from the community that surrounds the forest no outsider will be allowed except the few technical people. Community leaders will be involved in identifying their people for the job.



Figure 20: Ikuywa Community baraza

5.4.3.9 ILORO BARAZA

Consultative baraza held at Musembe Friend’s church in Iloro brought together community members from Iloro, Kwirenyi, Shasava and Musembe villages on 12th Sept. 2019 morning hours. Through the guidance of Mr. Maurice Otunga Chimbeyia - area Assistant Chief - the ESIA study team, KFS and KWS implementing agencies and FCC Member Mr. Sylvester Mambili created awareness and documented community views on the proposed Kakamega Forest Conservation Project. Mr. Mambili congratulated the community for being part of communities living around Kakamega Forest for good conservation efforts. He informed them that their efforts contributed to the forest being rated the best conserved forest in Kenya in 2017 of which a trophy was awarded. He reminded them on his earlier efforts for Kakamega communities to benefit from PELIS program and several income generating activities for community support including purchase of fruit pulper that remains un-utilized. He likened the project to “Huduma Number” program and Biblical Noah’s Ark emphasizing that its benefits were currently invisible but uncountable in future. He however reminded them that charcoal burning and overgrazing at PELIS sites were not good for conservation.

The community was generally concerned about the likelihood to discontinue farming and grazing within the forest, the fate of people moved from Mukumu, Ikuywa and Kisaina currently settled within the forest, Agricultural Development Co-operation (ADC) Land parcels included in the forest and absence of elected leaders in their meeting. They were uncertain given that several private individuals and companies including “Forest Run”, Rondo Retreat facility and forest concessions had ended up not benefiting the community.

Community concerns

- Purpose and objective of the fence. Whose decision was it?
- Top down planning of the project – why fence yet we have conserved for long
- Fate of people settled in the forest
- Community social responsibility (CSR) projects accompanying the project
- Private individuals using the forest for resource mobilization without community benefit. Forest Run
- Who was Rhino Ark –purchasing the forest?
- Existing Human wildlife conflicts and compensation

- Fate of PELIS after fencing
- Replacement of current exotic tree species with indigenous ones
- Fate utilities - Access roads and routes, Rondo Retreat
- Absence of MU-I-LESHI CFA members and leadership
- Impacts of Wildlife species to be introduced
- Provision of Access gates to the forest and the number of gates for the communities.
- Employment opportunities and engagement criteria
- Fate of legal activities like firewood collection, water, livestock grazing after fencing
- Communities not awarded concessions even if they met criteria
- Position of Nyayo Tea Zones and fence boundary alignment
- Use of funds/revenue collected from forest use – tourism, research, grazing and firewood collection

Response from Experts

The government was aware of the good conservation initiatives on the ground and the fence is complementing the efforts by providing a clear boundary mark and not restrict but control access to the resource. It was not decided by anyone to fence the forest but it is a proposal that is seeking communities living around and utilizing the forest to advise on how best the forest can be conserved including providing alternative methods.

Rhino Ark Trust is a conservation partner and resource mobilizer. The Trust has successfully mobilized resources for several forests including Aberdare and Kakamega which have been secured. A representative from the Trust will be joining the team for such meeting.

Two types of access gates to the forest will be provided and manned. The main gates (big) under KFS and KWS as well as utility access gates (small) ones manned by the community. The number utility access gates will be decided by the project committees once the project is accepted and is under implementation. All activities and members accessing resources will use these gates.

MU-I-LESHI CFA was the community engagement tool with KFS as per the Forest Act..... The CFA was informed by KFS of the meeting. They seem to have absconded meetings due to reasons well known to them.

Once the project is approved and is under implementation, the community living around the forest will provide unskilled labour. The local administration will carry out recruitment. However for skilled labour, it's advisable that it's left to the technocrats. Qualified community members are advised to provide qualification certificates.

Any revenue/funds collected by government for provision of a service of goods is not utilized by the receiving agency or station. However this is transferred to central government. It is the same funds together with taxes that are allocated to government projects like roads, security and schools.

Private companies/individuals (saw millers, researchers, hoteliers, Forest Run) utilizing the forest to raise funds do so with permission. However the community has never complained and demanded for benefit sharing either from the indigenous knowledge or the goods. It is important that the community demands this for it to be enshrined in law.

No harmful wildlife species will be introduced in the forest. In case any introduction is to be done, the community will be consulted.

Current Human Wildlife conflict cases reported are primates and snakes. However in most cases the community takes law into its own hands and kills the monkeys for food. Most cases are inside the forest and it's difficult to move wildlife from its home. There exist law and penalties for such crimes.

Forest boundary alignment will advise whether current settlements will be fenced inside. There exist no records on ADC farms as per the 1933 gazette notice. The government is aware of all excisions and has records/inventory of schools and other settlements that will guide decision making.

Community leadership was aware of the ongoing activity. Awareness meetings had been done to both county and National Government administrators for Kakamega and Vihiga Counties. The team had visited the two governors, the Regional Commissioner; County Commissioners down to the chief's level including the baraza which had been mobilized by the chief.

Kakamega forest is conserved for both conservation and utilization (timber production). Exotic species are within exploitation KFS managed section while the rest under indigenous species are preserved for biodiversity conservation.



Figure 21. Community baraza in Ivihiga

5.4.3.10 IVAKALE BARAZA

Consultative baraza held at Ivakale market brought together community members from Kambiri, Makuche, Bukaburu, Mang'ang'a and Ivakale villages on 13th Sept. 2019 afternoon hours. Communities were mobilized by acting Chief Kambiri location; Mr. Bulobi and Asst. Chief Shanderema Caleb Natiri. Under the leadership of Mr. Natiri; the ESIA study team, FCC Member Mr. Sylvester Mambili, KFS and KWS implementing agencies created awareness and documented community views on the proposed Kakamega Forest Conservation Project. The ESIA expert Mr. Mwangi guided the community through questionnaire filling.

The community was generally concerned about the fence boundary, expected employment opportunities and recruitment criteria. Human wildlife conflicts – primates and snakes –and how these would be controlled by implementation of the fence. The community felt that their elected leaders were better placed to have informed them of the project before the experts and national government administrators. They will not tolerate unskilled laborers imported into their area.

The aspiring MCA then reiterated that the community would not accept fencing reminding the rest that the two governors did not have forest resources in their home villages. He said instead of wasting time the ESIA team pays sitting/participation allowance to participants. However; Rev. Geoffrey Anjela sought to put records clear by informing the baraza that politicians want to listen to they want to hear and in most cases its not beneficial to the community. He added that the community was not opposed to the project except the politician and a few others behind that idea who practice illegal activities. He added that KWS had been of great assistance to the community. He also reminded them of several CSR projects implemented in areas surrounding the national reserve.

Community concerns

- Whether this project was discussed in parliament before being cascaded down to the community
- Why use powered fence
- effects of electricity fence to community especially children
- distance between fence and private land
- whether the political leaders were aware of the meeting (MCA and MP)
- criteria for employment recruitment
- surety that un-skilled labour will be given to local community members
- Employment terms - permanent or short term
- Income generating activities that will replace temporary employment
- Purpose for views being collected - meant for project discussion to lead to proposal or implementation
- Appreciation for conservation by government
- whose decision was it to fence the forest
- access to the forest for legal utilities – who will be allowed
- need for experts to provide participation allowances

Responses from experts

The government was aware of the good conservation initiatives on the ground. Electric fence was meant to complement the efforts by scaring wildlife, providing a clear boundary mark but meant to restrict but control access to the resource. It had not been decided by anyone to fence the forest but it was a proposal that seeking communities living around and utilizing the forest to advise on how best the forest can be conserved including providing alternative methods.

County government as well as the national government were aware of the project proposal. Awareness meetings had been done to both county and National Government administrators for Kakamega and Vihiga Counties. The same are stakeholders in the project

with Rhino Ark Trust being a conservation partner and resource mobilizer. County governments of Vihiga and Kakamega leadership had not only pledged for support but were resource mobilizers towards the same.

All legally accepted forest use activities will only be regulated but not stopped. Access gates will be positioned at specific sites after agreed distances to allow access to the resources. The number utility access gates will be decided by the project committees once the project is accepted and is under implementation.

Once the project is approved and is under implementation, the community living around the forest will provide unskilled labour. The local administration will carry out recruitment. However, for skilled labour, will depend on technocrats. Recruitment will be the responsibility of local area administrators. Most of the work will be on casual basis offered to villagers within implementation sites during construction. After that a few will be maintained and trained in fence maintenance and these will be on permanent basis.

Power used on this type of fence is low voltage solar power and has never been reported to cause harm in the many areas used. All along the fence there will be warning signs **“HATARI”**. Awareness to communities will continue during construction and after to ensure communities are safe.

Current Human Wildlife conflict cases - primates and snakes – will be controlled to a great extent. However more efforts to end the problem will be put in place in-collaboration with the warden KFNR.

It may not be possible for the government to give tokens to each one for conserving the forest. The government collects revenue/taxes from resources within Kenya and shares for projects implementations including roads and hospitals that benefit everyone.



Figure 22: Community baraza in Ivakale

5.4.3.11 CHESERO BARAZA

Consultative baraza held at Ngubuli Chiefs’ centre in Chesero location brought together community members from Fuvale, Chesero, Furave, Ngubuli and Mungakha village members– locally known as Chesero Forest. This community was privileged to air their views on the proposed fence project on 27th September 2019.

In attendance were FCC Member Mr. Sylvester Mambili, Chairman; Wildlife Compensation and Conservation Committee Kakamega County; Mr. Saul Shamala, Assistant County Commissioner (ACC) Kabras East; Madam Rose Kbit, Chief; Ngubuli location assistant chiefs Lwanda, Chesero and community administrators and village elders. Through the guidance of Chief; Ngubuli Mr. Ezekiel; K. Shitanda the ESIA study team; KFS, KWS and County government of Kakamega agencies created awareness and documented community views on the proposed Kakamega Forest Conservation Project. Mr. Mambili congratulated the community for being part of communities living around Chesero Forest terming them the best biodiversity protectors whose conservation efforts are recognized worldwide. He informed them that their efforts contributed to the forest being rated the best conserved forest in Kenya in 2017. He reminded them that he represents CFAs which are an equivalent of CBOs at national level.

Warden KFNR madam Rose Malenya informed members that CFA was an equivalent to CBOs of which KANFOCC was the reference group.

The community was generally concerned about access road across Mang'ulilo bridge through Chesero forest to link Nangurunya, Fuvale and Mungakha villages. Though informed by the Mr. Shitanda and Mr. Shamala of the true status – the road does not go beyond the bridge, the community was concerned that several survey maps were in circulation with varied boundaries causing confusion among them.

There were concerns about poor meeting venue choice by organizers with the community preferring inside the forest. However they were informed that the venue was chosen to allow wider catchment participation of members.

Community concerns

- Access and use of Mang'ulilo bridge
- Electricity provision as part of CSR projects
- Poor road network
- Human wildlife conflict – primates, snakes
- Functioning of the fence – exposure tour
- Boundary alignment
- Access to the forest in case of a fire without roads
- Fencing in areas where rivers act as boundaries (Isiukhu river)
- Distance between the fence and private land
- Community benefits from tourism/revenue
- Share fence power (transformer) with community
- ESIA process and feedback - confirmation of community views being included in the report
- Encroachments – change of river courses and removal of beacons

Response from experts

This project is not out to punish communities but to improve their livelihoods. Access roads are links between communities as well as forest management tools. With proper consultation and management, a ring road around the forest block can be used as access road, a fire break as well as a fence management corridor. The issue is captured and will be

presented as a recommendation to the committees to allow the road beyond the bridge. This will improve communication and create good relationship with KWS on the ground.

The project is powered by solar panels whose power is low and may not power surrounding homesteads. However other stakeholders can be approached to support community electricity request. The ACC advised members to pull resources for power provision through her office as they wait for government LAST MILE project.

The fence will be constructed within forest land in a strip of 5 meters with a management corridor of about 2.5 meters maintained both out and inside the forest. However this corridor will not be available for forest neighbours to farm. The forest neighbours are therefore equally encouraged to construct fences at their boundaries to reduce conflicts of crop destruction by fence maintenance staff.

The fence will reduce human wildlife conflicts to a greater percentage. However for primates, there will be need to put in more measures to attain 100% control. Such measures will be developed on need basis but there will be need for clear boundaries without leaning tree branches from either sides of the fence boundary so that the fence is effective.

Boundary alignment will be carried out to establish the correct boundary and show any encroachments. Where beacons have been uprooted, digitized reference points are available. The best reference point lies within Nandi Forest from which beacons will be reinstated. There will be a ground true-thing activity to sites mentioned to allow the team make an informed recommendations during report writing.

Where the boundary is along a river as mention about Isiukhu River, the fence will be constructed along the river within the forest; however, where river courses have been changed to alter boundaries, such land will be repossessed. Existence of several survey maps does not affect government boundaries as per the 1933 gazettelement apart from de-gazettelement and therefore encroachments by communities will not be compensated.

Currently tourism activities within Chesero forest block are very low. Management costs are far above revenue collection. Boundary is porous and entry seems to be free leading to a lot of bio-piracy and transfer of indigenous knowledge without compensation. Once protected, biodiversity improved and entry controlled, revenue collection will increase and community benefit from activities like tour guiding and hospitality. They will as well demand for a share depending on existing legislation since revenue collected is remitted to government and shared out through revenue allocation for projects. Even as we plan for that, there are great environmental benefits and services currently enjoyed by the community. These include fresh air, clean water and reliable rainfall which translate into food security.

ESIA activity is not complete until the community confirms their views were included in the report. Once the report will be ready, it will be submitted to NEMA Kakamega office with copies to relevant stakeholders. An advertisement will be placed in the most accessed news media with instructions on where to get the report. The community/public will be given 30 days to give their views. It will be important that this notice is placed at the ACC notice board for us here to be able to follow the process. It's after the 30days that those recommendations will be in-cooperated before a license is issued for implementation.



Figure 23. Chesero community baraza

5.4.3.12 SHANDEREMA COMMUNITY

Consultative baraza held at Shanderema Chiefs' Baraza Site brought together community members from Mukomari, Ngolomosio, Masunguluti, Shianda, Mahasi, Musembe and Shanderema on 13th September 2019 morning session. The communities were mobilized by the Kambiri acting Chief Mr. Bulobi and Asst. Chief Caleb Natiri.

Under the leadership of Mr. Natiri; the ESIA study team, FCC Member Mr. Sylvester Mambili, KFS and KWS implementing agencies created awareness and documented community views on the proposed Kakamega Forest Conservation Project. The ESIA expert Mr. Mwangi guided the community through questionnaire filling.

The community was generally concerned about fence boundary especially width of maintenance corridor and its complimentary uses. It was evident the community wanted the fence to solve human wildlife conflict especially crop destruction by primates.

Community concerns

- Brief on KWS and KFS Management mandates
- What portion was to be fenced – KWS or KFS side
- Type and purpose of the fence. Whose fence – human or wildlife
- Recognition as best conservationists
- KWS and KFS management boundaries
- Human wildlife conflict reports – porcupine and baboon
- Type of wildlife to be controlled by the fence
- Authenticity of KFS receipts and area of use

Responses from the experts

KWS and KFS are both state agencies co-managing Kakamega forest. There are no visible boundaries separating their management portions inside the forest but are known by each manager. Forest Act that establishes KFS permits consumptive use of the forest resources including firewood collection, grazing, sand harvesting as well as PELIS in permitted areas (plantations). These activities are regulated by payment of a fee and issuance of receipts. Original receipts and not photocopies of the same must be carried every time one is extracting. The same activities are not allowed in KFS managed natural forests. Contrary to these, Wildlife Act that establishes KWS does not allow the above activities. Such portions allow for recreation and biodiversity conservation. Receipts issued by KFS are not legally accepted in KWS managed portions.

Fencing is proposed for the whole Kakamega main forest and Chesero blocks. Therefore both KWS and KFS blocks will be fenced if the project is approved. The proposed fence is electric; solar powered and is not meant to deter human entry but to control human entry and prevent wildlife tress pass to farms and homes. However, the fence may not be 100% wildlife proof but will reduce such incidences. Technologies are available to control burrowing animals like porcupines. A section of the fence will be buried several inches underground to control such.

Conservation efforts by the community were appreciated. There maybe not be possibility to distribute revenue benefits to every community member but it's important to recognize that stable climatic conditions – rainfall, flowing rivers and micro- climate - provided by the forest are far much important.

Human wildlife conflict cases reports once reported are attended. Sometimes such reports are given much latter after the incidences making it difficult to be beneficial. All conflicts should be reported to the administrators immediately or call the warden.

Figure24: Shanderema community baraza



5.4.3.13 MUSUNJI COMMUNITY BARAZA

The meeting started at 3:00pm by a word of prayer from a community member. The area Administrator introduced the members and briefed them on the agenda of the proposed project.

Proposed project objectives

Mr. Peter Mwangi elaborated on who are the key stakeholders who include villagers around the forest, kakamega and Vihiga County, KWS, KFS and Rhino ark. He explained the need to have the proposed project in the area which included among others, the communities around highly depend on the forest thus need to protect it so that the future generation may as well benefit. There is problem of encroachment if not tackled early, may lead to extortion of our forest. Though the forest is still in good state, pressure is increasing leading to forest degradation, increase of invasive species like Guavas and mauratius thorn (muhabari). Components and the scope of work of the proposed project to the members. It was agreed that the proposed project is fencing of kakamega forest that will cover to counties that is Kakamega County and Vihiga County. It came out clear that the fencing will not in any way hinder the community members from benefitting from the forest as they are currently doing though they will be distinct entrance for different community as per need.

Benefits of the proposed project

The anticipated benefits of the project include among others: -

1. Improve and protect the forest. Currently it has been invaded and stones have replaced the trees, dumping at river Yala.
2. The community to generate income through tourism, local indigenous medicine
3. Improve current living standards for instant power can be generated from the water fall and can serve Vihiga and kakamega county.
4. Creation of employment during implementation, the locals will be able to offer casual services and for maintenance purposes some of them will be trained and absorbed
5. Improved livelihoods.

Community concerns

Community concerns stated were:

1. We use the forest for medicinal purposes', will we be restricted?
2. We use the forest for our cultural practices, will we be given a specific gate to use?
3. What specific guidelines are they going to use to locate the suitable place to place the gate
4. Will we be allowed to collect shrubs for firewood and charcoal?
5. Our animals will be electrocuted
6. Those of us who collect clay for pottery are we going to be restricted?
7. Will we be allowed to fetch firewood?
8. What distance will be considered from one gate to another
9. How are you going to handle accidents from electric shock?
10. What height is the fence?
11. What distance will be considered between the fence and the community fence?
12. What type of trees are you going to plant?

Response to the concerns

The forester concerned will be giving guidance frequently on the use of medicinal plants.

The locals will be incorporated to guide on the suitable place to set up the gate as regulated.

When the time for shrub harvesting comes, you will definitely be guided. The, forester in charge and the CFA officials will do a memorandum and be taken to the FCC to requesting for permission to harvest.

During the day the power level is low but at night, the voltage is high. In any case the animals once they sense, they will never go there again.

Culturally the girls are not allowed to meet with the boys who have circumcised. They will be guided on proper use as time goes by and come to an agreement.

There would be no specific gate for clay harvesting, however being a legal activity, the locals will be guided on where to harvest after getting a permit.

The distance between one gate to another will vary depending on demands at the specific area. However, before settling on a specific area the community will be involved.

The height of the fence will be 7-8feet high

During implementation, the casual labourer's will be sourced from the community and others will be trained and be employed during the maintenance phase.

There will be a distance between the community and the electric fence. The community members are advised to fence the compound and a survey will be done to know the suitable place to put the fence leaving a corridor for maintenance purposes.

The trees that they intend to plant in the forest will be indigenous trees,

The members of the community appreciated the County for the good work and offered their goodwill in supporting the proposed project until completion. The community members were promised that they will not be victimized by the question and the answers they have given for it is through their response that will guide on the proper way to put the fence without affecting them negatively.

The KWS Warden, advised the community members to get permit for the wild animals some of the may be rearing at home and as well confirmed that it will be kept confidential. There being no other business, the meeting was adjourned by a word of prayer from one of the community members.



Figure25; Musunji Community baraza

5.4.3.14 KAMULEMBE COMMUNITY BARAZA

Introduction

The meeting was held on Thursday 26th September 2019. It was started at 11:30am with a word of prayer from Ambaye Kangaya and the area assistant chief Mr. Ambali Willis lead self-introduction of the ESIA team and leaders present. Mr. Mambili briefed the community on the purpose of the proposed project.

Project objectives

Mr. Peter Mwangi elaborated on who are the key stakeholders who include villagers around the forest, Kakamega and Vihiga County, KWS, KFS and Rhino ark. He explained the need to have the proposed project in the area which included among others, the communities around highly depend on the forest thus need to protect it so that the future generation may as well benefit. There is problem of encroachment if not tackled early, might lead to serious degradation of the forest. Though the forest is still in good state, pressure is increasing leading to forest overexploitation, increase of invasive species like Guavas and mauratius thorn (muhabari). He further expounded on the components and the scope of work of the proposed project to the members. It came out clear that the fencing will not in any way hinder the community members from benefitting from the forest as they are currently doing though they will be distinct entrance for different community as per need.

It was made known that the fence will not interfere with anybody's land as for it will be put on the forest land and a corridor will be there between the fence and the community fence for maintenance purposes.

Benefits of the proposed project

It was agreed that the proposed project will:

1. Create employment opportunities for the locals during implementation as well as running of the project
2. Creation of alternative livelihood
3. Tourism will increase hence promote development
4. Improve the living standards of the people in the community
5. Reduction of human and animal conflict
Protection of the culture

Community concerns

The community raised various concerns on the proposed project which include;

1. Will we be allowed to go the forest after fencing?
2. Will we be allowed to graze our animals after fencing?
3. Those residing in the forest, will they be fenced inside or will they be displaced?
4. Is the whole fence electrified?
5. We use the forest for cultural activities, I have a small land where I house boys when they are circumcised. Will the private forest also be fenced?
6. What type of trees do you intend to plant?
7. What criteria will they use to employ people?

8. What will be the distance to avoid accidents?
9. What will happen for those who can't walk?

Response to the concerns

1. All the legal activities will continue and gates will be put in specific areas for the villagers to continue benefiting from the forest.
2. The community members who are legally residing in the forest will be advised by the government on the way forward because currently it's under discussion and verification will be laid.
3. Before the gates are put in place, a survey will be done and a suitable site will be settled for.
4. To avoid accidents, those bordering the forest will be advised to fence their compounds and when the fence will be put a corridor will be left in between for maintenance.
5. We will encourage alternative livelihood to avoid overdependence on the forest and tourism will assist in bringing more income. The locals can utilize their homes and make the local food hence get money through tourism.
6. Policy on how the locals will benefit from the forest is under discussion and once through, it will be the guiding principal
7. The locals were encouraged to visit Josephine's home and learn alternative farming. It is evident that it is realistic since Ashiundu used to harvest eight bags but currently he is harvesting twenty bags of beans after implementing what he learnt.

The community members requested to be considered when they will be clearing for the sake of putting up the fence. They were advised to form groups and through their FCC chair they will be able to get casual jobs as well as the trees being harvested.



Figure 26. Kamulembe Community baraza

5.4.3.15 MUSASA COMMUNITY BARAZA

Introduction

The meeting started at 3:30pm by a word of prayer from a community member. The area Chief Ms. Esther Nikoche introduced the members and briefed them on the agenda of the proposed project. Mr. Karanja Boniface CFA chair introduced Mr. Mwangi to take the members through the objectives of the proposed project.

Proposed project objectives

Mr. Peter Mwangi elaborated on who are the key stakeholders who include villagers around the forest, kakamega and Vihiga County, KWS, KFS and Rhino ark. He explained the need to have the proposed project in the area which included among others, the communities around highly depend on the forest thus needs to protect it so that the future generation may as well benefit. There is problem of encroachment if not tackled early, may lead to extortion of our forest. Though the forest is still in good state, pressure is increasing leading to forest degradation, increase of invasive species like Guavas and Mauritius thorn(muhabari). components and the scope of work of the proposed project to the members. It was agreed that the proposed project is fencing of kakamega forest that will cover to counties that is Kakamega County and Vihiga County. It came out clear that the fencing will not in any way hinder the community members from benefitting from the forest as they are currently doing though they will be distinct entrance for different community as per need.

Benefits of the proposed project

The anticipated benefits of the project include among others: -

6. Improve and protect the forest. Currently it has been invaded and stones have replaced the trees, dumping at river Yala.
7. The community to generate income through tourism, local indigenous medicine
8. Improve current living standards for instant power can be generated from the water fall and can serve Vihiga and kakamega county.
9. Creation of employment during implementation, the locals will be able to offer casual services and for maintenance purposes some of them will be trained and absorbed
10. Improved livelihoods.
11. To ensure there is peace between the forest, wild animals and the community

Community Concerns

Present Community members raised the following concerns:

1. Those of us who are bordering the forest will we be given some space before the fence?
2. In case of electrification what will happen?
3. Will we be allowed to get the medicinal plants?
4. What will happen to some of us who surrendered our land to the county government and we were resettled at the forest?
5. Which animal do you intend to bring?

6. Electric fence will bring accidents
 7. What will happen to those of us without title deeds?
 8. How will we benefit from the project?
 9. What distance will it be from one gate to another?
 10. The buffer zones will they be of good size?
 11. Can the buffer zones be utilized by the locals?
 12. Animals like rhino and baboons are a nuisance
13. The government had promised a road which will be passing through the forest. Will they continue or the project will prevent it from being implemented.
 14. Land owners who bought land from other owners will they be safe?

Response to the concerns

The electric fence will follow the right forest boundary. No one's land will be interfered with. However, community members ensure you put fence around your compound especially those ones bordering the forest

The fencing of the forest is an activity which has taken place in other areas like Aberdare and so far, no cases of electrocution have been reported. More sensitization will continue to prevent such as well as warning signs.

You will enjoy all legal activities for instance those going to the forest for medicinal plants will still enjoy. You will liaise with the forester for more guidance

We are aware about those who were settled in the forest from different areas. The government will give a directive on how to assist you.

Currently no animals will be brought. In case they will want to introduce a new animal; there will be community sensitization and no harmful animal will be brought. We will consider the animals familiar with the forest like gorilla.

The government is aware some people were settled and are yet to receive title deeds. The matter will be followed by the government through the Land commission to ensure the matter is solved amicably.

The locals will be employed as tour guides, you can as well sell the indigenous vegetables and herbal medicine among others.

The distance from one gate to another will depend from one area to another. A fence committee will be formed which will include the villagers to settle on suitable site to place the gate.

A survey will be done and the buffer zones will be used for maintenance of the fence.

The official roads will be maintained and the project will not interfere with the plan especially if its preserved for it.

Mr. Edward representing Vihiga county government assured the locals that the Governor was aware about the project and is supporting it. He informed participants the road that they had raised concerns about will be implemented as promised. There being no other

business, the meeting was adjourned by a word of prayer from one of the community members.



Figure27: Community Baraza at Musasa

5.4.3.16 SUMMARY COMMUNITY BARAZA CONSULTATION

In all the 15 community barazas the following issues emerged as the significant socio-economic concerns:-

- Whether the fence will curtail continued access to the forest for firewood collection, grazing of livestock, medicinal plants collection, cultural rituals and farming for those under PELIS among other community livelihood activities. In response to this concern participants were assured that access gates will be provided at predetermined points along the fence line for all legally allowed uses for the forest resources
- Whether the project will benefit the local community. In response participants were informed that most of the employment opportunities during construction and maintenance of the fence including indirect opportunities coming from enhanced tourism will be given to the local content. The lead expert underscored the role of the project in protecting the forest for continued supply of environmental service which is pivotal to the sustenance of the local social economic development particularly regulating ecosystem functions such as climate, provisioning of non wood products such as medicine and maintenance of cultural benefits like circumcision rituals and other spiritual fulfilment.
- Whether the settlements within existing excisions that have not been degazetted will be fenced in or out. There was general expression of eviction fears by those who were settled in the forest some of who were displaced from their ancestral land to pave way for public utilities. In response EIA experts explained that matters of excisions and forest settlements will be resolved amicably by the relevant Agencies and County governments in the specific areas of concern and existing settlements but in most of the other areas the forest will follow the original boundary plan as

much as possible. In Kibiri the community that was settled in the forest comprise of the Maragoli sub-tribe whereas the forest adjacent community are Tiriki sub-tribe. The Tirikis expressed entitlement to the forest land and the settlement of the Maragoli's in the forest occasionally create jitters between the two groups. The Maragoli's are seeking to be formally settled in the land they were allocated through degazettement of the forest land and issuance of title deeds while the Tiriki's feel they are intruders and not entitled.

- Whether connecting roads passing through the forest and peripheral roads useful to the forest adjacent community will be allowed. In response participants were assured that all public roads that are classified will remain accessible and appropriate barriers and gates will be installed where necessary. Peripheral roads particular the Chesero forest will be considered on its merit.
 - Whether the ban on forest logging for Kakamega Forest can be lifted to enable the community collect dead wood for firewood noting that the community has been on the first defence line in protecting the forest. In response the ban was for one year ending November 2019 but the lift or extension is dependent on existing and or perceived threat on the forest resources.
 - Firewood collection, Farming under PELIS and grazing in the forest emerged to be the most important uses of the forest by the forest adjacent communities and in the villages where these activities take place communities are hesitant to welcome the project. In addition all areas where there are forest excisions and settlements or any kind of encroachment into forest land including by public facilities like schools a section of community members become opposed to the fencing project. However in the overall project area there are more people welcoming the fence project than those opposed. A detailed analysis of the questionnaires will present the real picture.
 - Need to know whether there is introduction of new wild animals that are threat to human into Kakamega Forest. In response participants were assured that there is No plan to introduce problematic animals that never inhabited Kakamega Forest. There is a proposal by the County government of Kakamega to introduce Chimpanzees that do well in equatorial rainforest for tourism development. The communities were assured if it happens they will be involved as well.
- Fence accidents. In response participants were assured that the Power used on this type of fence is low voltage solar power and has never been reported to cause harm in the area that the fence was used. Awareness to communities will continue after the ESIA that is during construction and after to ensure communities are safe. All along the fence there will be warning signs like "HATARI".
- Space between the community farm and the fence. In response participants were assured that there will be corridor for maintenance of the fence like 2-5 meters depending on the topography of the area. The participants were assured that the space will be on the side of the forest not community land.

5.4.4 FOCUSED GROUP MEETINGS

5.4.4.1 BUYANGU PRIMARY SCHOOL BOARD OF MANAGEMENT (BOM)

The ESIA study team together with the implementing Agencies for the proposed project conducted Focus group discussion meeting with Buyangu Primary Board of Management on 18th Oct 2019 at Buyangu Primary School.

The meeting started with a word of prayer from one of the board member followed by self introduction of the participants. School board of management chairman welcomed the ESIA team.

ESIA team leader Mr. Mwangi gave brief description of the proposed project and the two objectives of the meeting:

- To inform the meeting on the proposed project
- Get their views/concerns on the proposed project

He also highlighted KWS, KFS, Rhino Ark, Kakamega and Vihiga counties as the implementers of the proposed project. He informed the meeting that public participation and consultation is one component of ESIA report and according to Environmental Management and Coordination Act (EMCA) the proposed project is among those projects that requires ESIA report thus the team is preparing a report which will be sent to National Environment Management Authority (NEMA) for approval.

The participants were given opportunity to ask questions on the proposed fencing project and the ESIA team gave responses after which the team also asked questions.

Concerns and responses

- There was need to understand the objectives of fencing Kakamega forest. The agencies responded that the main objective is To protect and conserve the forest for present and future generation, to make the forest boundary known to the community.
- Space between the farm and fencing that will be left after fencing. The ESIA team leader informed the meeting that there will be space for maintenance of the fence like 2-5 meters depending on the topography of the area. He assured them that the space will be on the side of the forest not community land.
Community access to forest after fencing for grazing, medicinal herb, water, firewood and other resources. There will be access gates; the Board of Management were informed that their views will be captured in the report and that there will be committee inclusive of community representative that will decide where to place the gates
- Need to know whether there will be introduction of new wild animals into the forest that are threat to human and especially pupils, the agencies responded that Those animals that have never existed in Kakamega forest will not be introduced but there is a proposal from the county Government to introduce animal like chimpanzee to promote tourism development in the area. The communities were assured that if the introduction happen they will be informed
- Need to know the source of power for the fencing and the risk of power to the pupils
The fence will be powered by solar. The proposed fence design has succeeded in other areas like Aberdare's and Mount Kenya. There was no cases of human injuries

reported. The agencies assured the community that when fencing start the community will be involved and sensitization and awareness programmes will continue.

ESIA Team concerns

- When Buyangu Primary school was established, the agencies where informed that the school was established in the year 1985 around the same time when Kakamega National reserve was gazette.
- Number of pupils that he school have, it was noted that the school has 391 from Early Childhood Development (ECDE) to class eight. The school also has eight teachers employed by teachers service commission (TSC), three BOM teachers and three ECDE teachers.
- Size of land allocated to the school and how the land are utilized, the agencies were informed that the school land is 10.6 hectares and 13 Acres are used for sugarcane plantation and the remaining land is school compound.
- The agencies informed the BOM to consider changing sugarcane to trees because Government policy requires public institutions to have 10% forest cover.



Figure 28. Consultation meeting with BOM Buyangu primary school

5.4.4.2 CHIKUSA PRISON MEETING

Objectives

1. To inform on the proposed Kakamega forest fencing
2. Discussion on the proposed project
3. Views/ Concerns of the Shikusa Prison
4. Response to the concerns from the ESIA team

Introduction

The meeting was called to order at 11:10 am with self – introductions of the participants.

The Officer in charge, Shikusa Prison, who was chairing the meeting, welcomed members to the meeting. He informed the meeting that he was aware of the proposed project confirming one of his officers attended Kakamega workshop for the proposed project and briefed him on them. He welcomed the ESIA team leader to take members through the discussion.

Discussion on the proposed project

ESIA team leader gave brief description on the proposed project highlighting the implementing agencies of the project as Kakamega and Vihiga Counties, KFS, KWS and Rhino Ark. He informed the meeting that according to Environmental Management and Coordination Act (EMCA) the proposed project is among those projects that requires ESIA report thus the team is preparing a report which will be sent to National Environment Management Authority(NEMA) for approval. He informed the participants on the main objective of the meeting was to consult on the proposed project and get views/concerns of the Shikusa Prison.

Ecosystem Conservator Mr. Rono informed the meeting that Shikusa Prison sits on 422 hectares of land excised from Kakamega Forest. He highlighted illegal human activities as the big challenge that Kakamega forest face. He said the boundary between the prison and the KFS is about 40km and it's not fenced; the loggers use the boundary to enter forest. He requested for cooperation of the prison in protecting and conserving the forest. He also requested the Shikusa Prison to adopt planting indigenous trees.

The chair informed the meeting that he has history of the area; he was posted in Shikusa Prison in 1990 letter on transferred and came back as officer in charge. He said the activities that they undertake are them as those of 1990's. He informed the ESIA team that Shikusa Prison utilizes all the land allocated to them. He said they do farming and other activities which are Government directives and they are preparing a seedling to ensure 15-20% forest cover within the facility.

Mr. Chege highlighted the purpose of the fencing is mainly for protection and conservation of Kakamega forest. He said normally fence encloses the area that is part of forest; he added if the proposed project gets approval the implementing agencies are looking forward to fencing in all the institutions that are within the forest area.

Shikusa prison concerns on the proposed project

- They need to know the forest boundary so that they can share them with senior management
- They welcome the proposed project and willing to give support where necessary but requested the team to contact and do consultation with their senior management
- That the facility land has no title deed, the process was done but never actualized
- Shikusa prison borders the community, Nyayo Tea Zone, KFS and one side is road, the beacons for the facility area intact and visible.
- Fencing the facility inside is to their advantage but the notion and the perception of senior management need to be incorporated.
- There is a road that connect the community to the facility and also the facility has a dispensary that serves the community

Response to the concerns from the esia team

- That the fence will follow the forest boundary and there will be a survey for the boundary which will incorporate all the stakeholders.
- The ESIA team will make a letter to commissioner general of prison or the Cabinet Secretary and copy Shikusa Prison so that they have the information.
- The team informed the meeting that there will be access gates for the community to access services in the facility
- Fence sensitization for the stakeholders will be done to avoid fence accidents and destruction
- The team requested for a master plan for the facility, officer in charge assured the team that he will engage physical planner for the master plan and share.

The meeting recommended for a good relationship between the Kenya Forest Service and Shikusa Prison in protecting and conserving Kakamega Forest from illegal activities. Shikusa Prison management to work hand in hand with sub-county forest officer Mr. Juma in planting the best species within the facility.

The meeting ended at 12:50 pm with a word of prayer from Mrs. Alice A Ingutya.



Figure 30; ESIA team meeting with Shikusa Prison Management

5.4.4.3 MUELESHI CFA MEETING

The ESIA study team together with the implementing Agencies conducted Focus group discussion meeting with MLESHI CFA and on 16th Oct 2019 at Kenya Forest Service office Isecheno.

The meeting started with a word of prayer from vice chair MULESHI followed by self introduction of the participants. In attendance was FCC Mr. Sylvester Mambili.

ESIA team leader Mr. Mwangi informed the meeting on the proposed fencing of Kakamega forest and stated the purpose of the meeting was mainly consultation on the proposed project and discussion on the letters that was written by MLESHI CFA to the ESIA team. Mr.

Mwangi also informed the meeting that the chairman MLESHI CFA told him that he will not make it to the meeting.

CFA Members present informed the ESIA team that they got information from the MLESHI chairman that the meeting schedule for 16th Oct 2019 was postponed and that was why the turnout for the meeting was very low.

Senior scout and a member of MLESHI CFA Mr. Enoch M. Shuma informed the participants that no CFA members are against the proposed fencing of Kakamega forest he assured the team that they are for the project. the only thing that they need to know was whether the activities that the community undertake will be stopped or allowed after fencing.

Vice chair MULESHI CFA appreciated the ESIA team for having consultation with them on the proposed project. He informed the meeting that Rhino Ark contacted them during the preparation for the proposed fencing of Kakamega forest project and told them that they will come back and involve the CFA in the sensitization and education of the community on the fence.

ESIA team leader Mr. Mwangi elaborated on the ESIA report and made the participants to understand that the fence sensitization and education is different from public consultation for ESIA report. He highlighted that the ESIA report is prepared by experts and then submitted to National Environment Management Authority (NEMA).

Vice Chairman MLESHI CFA promised the ESIA team that he will share the information with his Chairman. He also assured the team that the MLESHI CFA members will do sensitization of the proposed fencing in the upcoming community barazas for the review of management plan for Kakamega forest.



Figure 31 : ESIA team meeting with MUI ELESHEI CFA

5.4.4.4 KAPTIK SECONDARY SCHOOL MEETING WITH BOM

Welcome

The meeting started at 12.05pm with a word of prayer from Father Austin Ateya.

Mr Nyariro, KFS forester in charge welcomed the members to the meeting. He outlined the importance of Kakamega Forest and said that the forest was being destroyed at a fast rate and it had been decided that to save the forest, a fence be built around it.

Ms Emily Atai explained that there were some Government institutions within the forest land. She said institutions were organized because they had Boards of Management and that was why the meeting was set up to give Kaptik Secondary School a chance to state how the fence would affect them.

The fence

Ms Atai declared that the fence proposed to be built around Kakamega-Kibiri Forest was an electric fence with wooden posts, wire and tight locks below to prevent small burrowing animals that might want to get out of the forest. It will also be supported by **solar** power.

Ms Atai explained that the **voltage** would not be strong enough to kill but to shock any human or animal that gets close as a reminder that they were crossing the forest boundary. The power will be stepped up during the night because people were expected to be resting at that time. She said, there will be **gates** within the fence to allow for movement. All legal activities within the forest will continue but through the gates.

Institutions fenced inside

Ms Emily Atai explained that the fence would have serious impacts on the environment and the community. She said that a project of such magnitude required that an environmental and social impact assessment (ESIA) be carried out, which would allow them to know the weaknesses of the project and gives us a chance to fix the errors before the project commence. She further said that "At the moment, people enter the forest at any point, and there's need to have '**controlled entry**,' so it can be known when people enter the forest they are entering the forest for what purpose. "We have the *Nyayo* Tea zone around the forest, but it seems not to be full proof, so we want to have the fence as a support."

Ms Atai explained that the fence will run for **117km** perimeter from Kakamega to Kibiri. She said all people who were legally in the forest were '**stakeholders**,' including: the communities using the forest, KFS, Rhino Ark, KWS, the County Governments of Vihiga and Kakamega and that Rhino Ark Trust was the resource mobilizer for the project.

Ms Atai said that the institutions that lay within the forest land, had organized Boards of management and the Secretariat had decided to reach them individually. She said that that was why that day they were meeting the BOM of Kaptik Secondary School to give their views. All these views from the stakeholders will guide NEMA and the proponents of the fencing project to either accept or reject the project, she said.

Ms Atai allayed the fears that people living within the forest would be kicked out. "Nobody is being *evicted*," she clarified: 'If anything, then everybody is in fact being given *security*.'

There will be an understanding on just how much land should be given to institutions. The purpose of this meeting is to give institutions a chance to tell us what they feel about the fence.”

Ms Malenya started by seeking to know from the Principal how much land Kaptik Secondary School had and what it was using it for. Mr Pascal Were explained that the land was hived off the forest as a grant by His Excellency President Daniel Torotich Arap Moi in 1978. The Principal said the total acreage of Kaptik School was as follows: Total space for the school was **23.75 acres** of which 5 acres were for the Church parish and **18.75 acres** for the school. He said the church had not been built so the school was using the church space temporarily.

The Principal said Kaptik School had 968 students, both girls and boys studying in 6 streams; 2 acres was under tea; half acre was under *Eucalyptus* trees, 2 and one half acres was under *cypress* trees. There was a water stream passing near the school and a section of the land was a swamp. He said the school had also set up 3 fish ponds; half acre was under vegetables 7 acres under sugar cane plantation that had just been recently harvested and sold to Butali sugar factory. He said 3 acres was a playing field for the students; and the tuition block took 2 acres. The Principal ended his presentation by informing the meeting that the school had no Land Title Deed, which he said was preventing some development projects from being done at the school.

Father Ateya and the PTA Chairman, Mr Nyaleso concurred with the Principal that without the Title Deed, even the church could not develop the parish.

In response, Ms Atai stated that obtaining a Title Deed was a long and tedious process and that **since 1933**, no institution had been given a Title Deed. She advised the School management that that was forest land and they should not plan on setting up huge buildings there.

Ms Malenya suggested that growing tea and sugarcane on former forest land should not be encouraged instead the school should grow trees.

D’Jivetti sort a clarification from Ms. Malenya why growing cash crops especially tea was discouraged for the school yet the *Nyayo* Tea Zone was in forest land as well.

Malenya clarified that the *Nyayo* Tea Zone was set up to prevent encroachment into the forest but a school growing tea could easily be used undercover as individuals’ businesses. If Kaptik Secondary School management felt that the land they had was excess they needed to put the excess land under forest cover.

Principal Were explained that the extra land was needed for use by agriculture students Ms. Malenya cautioned that such plantations could cause conflicts in school and she would recommend that the land be planted with trees. This proposal did not seem to augur well with the school management.

Mr Andati questioned the validity of the school having a swamp and recommended that the school increase the tree acreage instead of growing sugar cane.

Mr Nyariro advised the school to present a proposal on how they want to use the land for consideration by KFS.

Project commencement

Mr D’Jivetti informed the meeting that many people were concerned and were contacting the Department of Environment to tell them when fencing would start because they were worried of being locked.

Ms Atai explicated that the process was progressing well and the responses of the public would be sent to the Secretariat and put together in a report that would be returned to the people to verify if had captured their feelings accurately. 6 copies of the Report will be submitted to NEMA to share with the public and affected institutions in relevant offices where the public can access and examine them. NEMA will assess the reports and either accept or reject the report. If approved, NEMA shall give certain conditions to be fulfilled before and during implementation of the project.

Ms Atai said auditing of the project will also follow the reports. So it may be January at earliest, when the reports come back.

There being no other business, the meeting ended at 12.33 pm with a word of prayer from Father Ateya.

5.4.4.5 MEETING WITH MALAVA AREA MP



Figure 32 Meeting with the Mp Malava Hon. Moses Malulu

Introduction

This meeting was held on 27th September at Malava MP Residence at Chemuche Ward. The consultation meeting started with self-introduction from the members present. Hon.Moses Malulu Injedi area MP as well as the host, Madam Rose Malenya-KWS Warden, Mr. Chege KFS, Vivienne Litali EIA expert, and Mr. Peter Mwangi the lead expert ESIA.Mr. Peter Mwangi briefed on the agenda of the proposed project.

Fence objective

Mr. Peter Mwangi the lead expert explained the need to have the proposed project in the area which included among

others, the communities around highly depend on the forest thus need to protect it so that the future generation may as well benefit. There is problem of encroachment if not tackled early, may lead to extortion of our forest. Though the forest is still in good state, pressure is increasing leading to forest degradation, increase of invasive species like Guavas and Mauratius thorn (muhabari). It was reported that the proposed fencing of kakamega forest transcends two Counties that is kakamega County and vihiga county. It came out clear that the fencing will not in any way hinder the community members from benefitting from the forest as they are currently doing though they will be distinct entrance for different community as per need.

It was made known that the fence will not interfere with anybody's land as for it will be put on the forest land and a corridor will be there between the fence and the community fence for maintenance purposes.

Project benefits

It was agreed that the proposed project will:

- Create employment opportunities for the locals during implementation as well as running of the project
- Creation of alternative livelihood
- Tourism will increase hence promote development
- Improve the living standards of the people in the community
- Reduction of human and animal conflict

Area MP's Concern

The area MP had various concerns on behalf of the community on the proposed project which include;

- How will the fence control the invasive species like guavas and Mauracis thorn?
- Currently, the last mile power has caused death. What measures are you going to put in place to avoid such accidents?
- What is the cost of the electric fence and why don't you use nyumba kumi?
- Is the whole fence electrified?
- Issue of the fence will bring conflict as the locals have different routes to the forest and different need.
- What will happen to the current roads?
- The boundary already exists, why fence?

Response to the Concerns

There is increase in pressure in the forest considering the population is high and land is limited forcing the community to go to the forest for firewood, grazing their animals leading to increase of invasive species hence by fencing and having specific entries, will assist in ecological balance.

The risk of the fence is not lethal because it is a solar powered fence with chocking effects. Fencing of the forest is an activity which has taken place in other areas like Aberdares, Mt. Kenya and so far there has been no case of electrification that has been reported. The power is regulated in that during the day power is a bit lower compared to at night. In

addition, the community will be sensitized and a corridor will be created between the forest and the community fence.

There will be a team in place to ensure the community needs are raised and a consensus is reached concerning the gate. Alternative livelihood will also be considered. For instance, if a community need in the forest is water then the resource can be brought to the community so that they don't have to go to the forest for water hence avoiding conflict and enhancing sustainability of the project

Fencing of the forest is necessary since some of the species are disappearing like the debraza monkey (ikhondo) which were plenty in the forest but it has disappeared and is only found in Chisero forest.

The area MP appreciated the project and said he is not against the project but emphasized that the community be sensitized well on the project to avoid conflict and they consider the roads passing through the forest because roads are a challenge in the area. The team through the Lead expert requested the MP to sensitized his people about the project when he meets them. He clarified the name of the forest is Chisero forest and not Kisere as it appears on the map and promised to take it up at the parliament, there being no other business, the meeting was adjourned.



Figure 33. Meeting with CBO and Civil society

5.4.4.6 MEETING WITH MARAGOLI LAND OWNERS GROUP

Introduction

This was an impromptu meeting held on 18th September 2019 when the group visited ESIA team working station at KWS offices in Kakamega Town. The group had branded T-Shirts

labeled “My Land my Right”. The comprised of leaders of the Maragoli community settlements at Shiru and Shavilinga in Vihiga County. The settlement is inside Kakamega forest. They requested audience with ESIA team after attending a court case in Kakamega High court where they are seeking redress on ownership document of their plots of land.

Group’s Concerns

After self introduction of the ESIA team and the group representatives present the chair Mr. Fredrick Manoah Iguza presented historical overview of the settlement.

He informed the ESIA team that in 1985 a number of families from the Maragoli community were evicted from Mbale and Bukuli to pave way for the current Vihiga county Headquarters and create room for school, hospital and other public facilities. Their land was taken under compulsory acquisition by the government and they were relocated to Tiriki and Shavilinga on forest land. He alleged that the families were allocated pieces of land but some were not compensated and to date they remain like squatters because they have never received title deeds for their land. They claimed that some families still have title deeds for their original land but is of no value because the land is already under public utility. They lamented that some ancestral graves are still within Mbale County headquarters and need traditional rituals need to be undertaken to appease the gods.

The group has been engaging the lands offices to get title deeds for their current settlement to no avail which is why they resulted to the court to seek justice. They said that the electric fence proposal was a concern to them and has raised alarm on possible eviction and that was why they were seeking audience with the ESIA team.

They pointed out that their lack of ownership document on the land make it possible for the Tiriki community to undermine and harass them saying that they are immigrants. The group reported that there about 1500 families with an estimate of close to 6000 people settle in the area.

ESIA team Response

The lead expert Mr. Peter Mwangi thanked the group for seeking clarification on the proposed fence project. He explained that the fence project objective was to conserve the Kakamega forest from further encroachment but will not in any way affect the existing community settlement. The alignment of the fence will be in such a way that the community will be fenced outside. The group was informed that the ESIA team will be undertaking a consultation and public participation exercise and community barazas had been planned and that two of the barazas will be held at their area and they were all encouraged to attend and give views and perceptions of the project.

5.5 QUESTIONNAIRE ANALYSIS

5.5.1 Introduction

About 750 questionnaires were administered to the forest adjacent communities out of which 554 were successfully filled and returned. The questions were designed to capture the following household information.

- Average farm size per Household around the Forest
- Distance from the forest
- Support for the proposed project
- Forest uses
- Likelihood of benefiting from the project
- Need for access gates after the fence project

In the analysis we sought to understand to what extent communities adjacent to the forest depend on the forest resources and the various uses. We further sought the community perception of the proposed fencing project. Analyses of the responses on the above issues are summarized below.

5.5.2 Average farm size per Household around the Forest

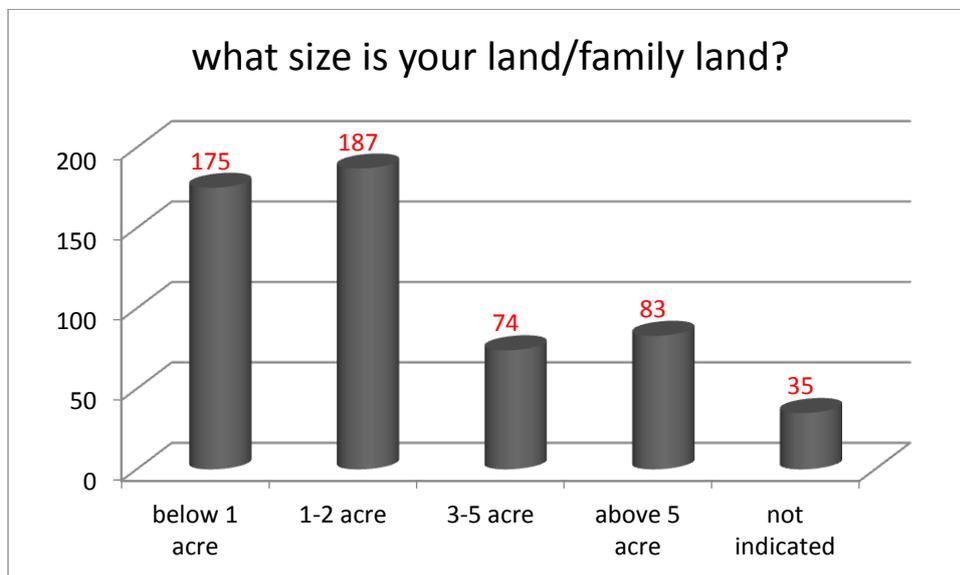


Figure 34. Adjacent forest community house hold land size

The analysis shows that majority of the respondents have land sizes below 2 acres, these shows that a good number of the community relies on the forest because there small land size cannot sustain them for different activities.

5.5.3 Distance from the forest

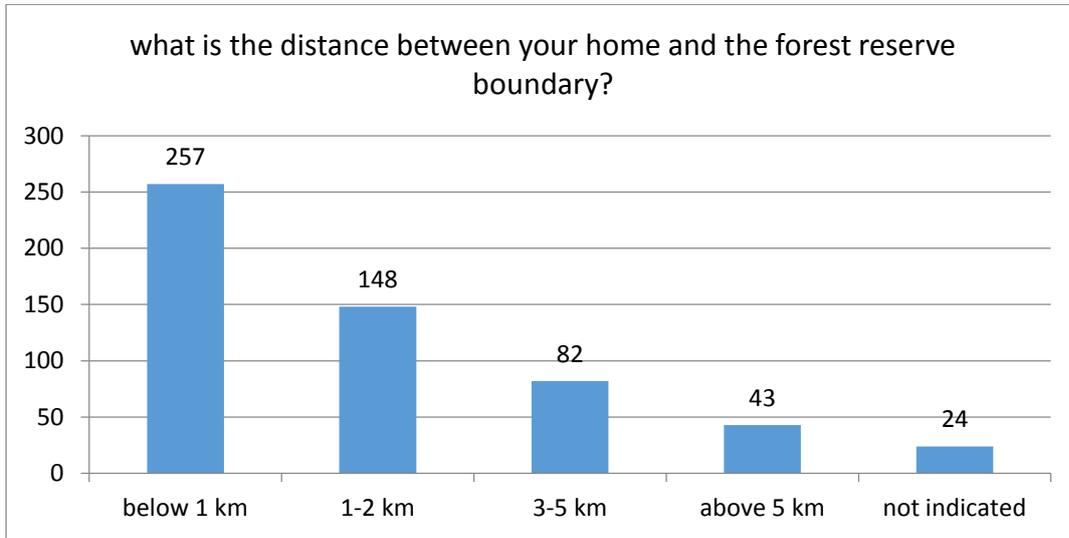


Figure 35. Respondents farm distance from the forest boundary

Majority of the respondents lives less than one km away from the forest boundary. 73% of the respondents reside within 2 kilometres from the forest boundary and hence the sample is a true reflection of the forest adjacent community.

5.5.4 Forest uses

Firewood collection, grazing, medicinal plants and collection of food plants and materials emerged the most important uses of the forest by the local communities.

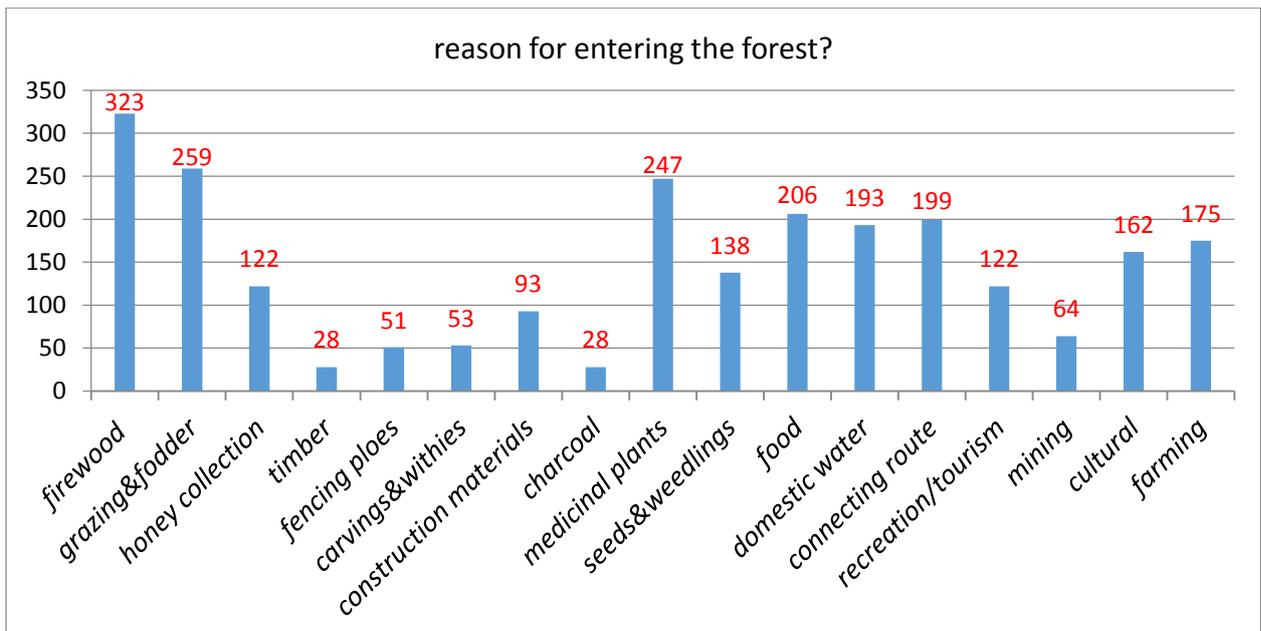


Figure 36. Adjacent community forest uses

5.5.5 Support for the proposed project

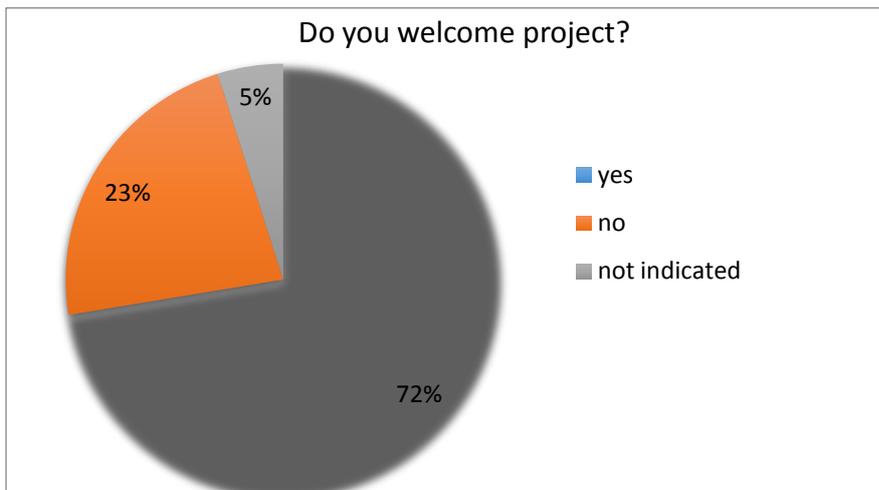


Figure 37. Proportion of respondents supporting the project

72% of the respondents welcomed the project. 23% responded NO to project and they gave reasons which were mainly revolving around the restricted access to the forest for resources and cultural activities, connecting routes and forest boundary dispute. Some gave the idea of introducing alternative livelihoods for the community when fenced.

5.5.6 Access gates

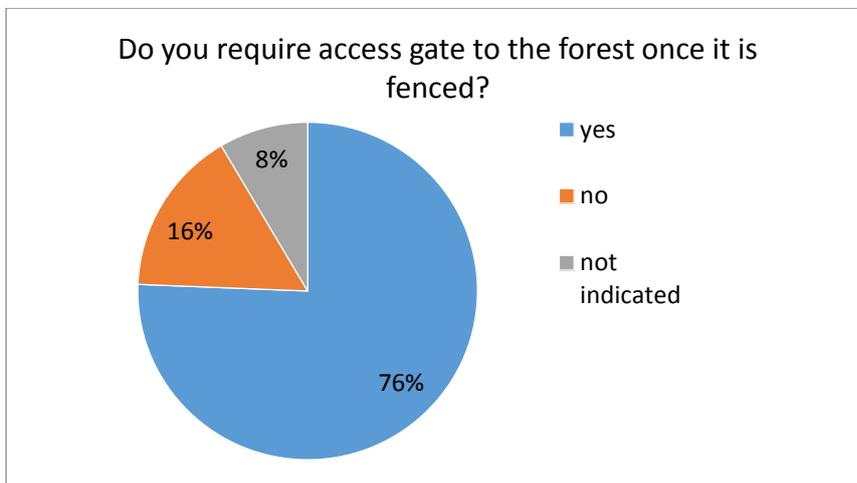


Figure 38. Proportion of respondents that need to access

76% of the respondents responded that they require access gates to the forest after fencing to for them to access forest resources for their livelihood and cultural activities.

5.5.7 Project benefits

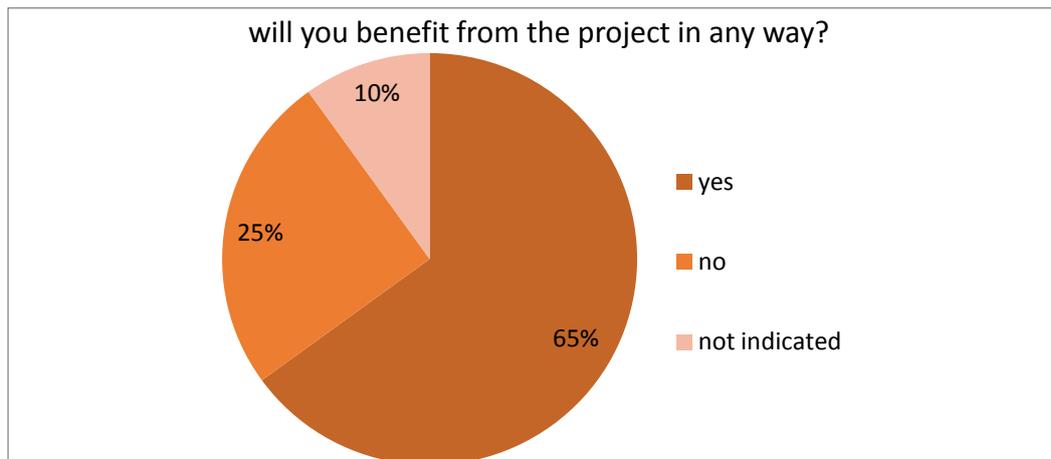


Figure 39 .Proportion of respondents that said project will benefit them

65% of the respondents viewed the project that it's of benefit to them both directly and indirectly. They gave direct benefits like employment opportunities; reduce human wildlife conflict and reduce encroachment. Indirectly they stated conservation of the forest which intern provides ecosystem services for the community and tourism attraction.

5.5.8 Area based project support

Table one below shows the response of each barazas to the question "do you welcome the project?"

Table 1: response to the question do you welcome the project?

Community Baraza	Responses	Expert Remarks
1. Shamiloli	The participants were given 50 questionnaires which they filled and returned 32 questionnaires. 94% of the respondents welcomed the project, 6% responded No to the project.	The generally accepted the project but emphasized on alternative livelihood support and local employment from thr project.
2. Mahiakalo	The participants were given 50 questionnaires which they filled and returned 43 questionnaires. 63% of the respondent welcomed the	

	project, 32% responded NO and 5% have not indicated their views.	
3. Virhembe	The participants were given 50 questionnaires which they filled and returned 35 questionnaires. 80% of the respondent welcomed the project, 14% responded NO and 6% have not indicated their views.	
4. Iloro	The participants were given 50 questionnaires which they filled and returned 38 questionnaires. 47% of the respondent welcomed the project, 50% responded NO and 13% have not indicated their views.	
5. Ivihiga	The participants were given 50 questionnaires which they filled and returned 32 questionnaires. 75% of the respondent welcomed the project, 25% responded NO to the project.	
6. Chirobani	The participants were given about 50 questionnaires which they filled and returned 28 questionnaires. 75% of the respondent	

	welcomed the project, 18% responded NO and 7% have not indicated their views.	
7. Kisere/chesero	The participants were given 50 questionnaires which they filled and returned 47 questionnaires. 85% of the respondent welcomed the project, 9% responded NO and 6% have not indicated their views.	
8. Shanderema	The participants were given 50 questionnaires which they filled and returned 32 questionnaires. 85% of the respondent welcomed the project, 6% responded NO and 9% have not indicated their views.	
9. Buyangu	The participants were given about 50 questionnaires which they filled and returned 36 questionnaires. 58% of the respondent welcomed the project, 36% responded NO and 6% have not indicated their views.	
10. Ikuywa	The participants were given 50 questionnaires which they filled and returned 47 questionnaires. 85% of the	

	respondent welcomed the project, 11% responded NO and 4% have not indicated their views.	
11. Musunji/Shiru	The participants were given 50 questionnaires which they filled and returned 40 questionnaires. 62% of the respondent welcomed the project, 35% responded NO and 3% have not indicated their views.	
12. Kamulembe	The participants were given more than 50 questionnaires which they filled and returned 51 questionnaires. 78% of the respondent welcomed the project, 20% responded NO and 2% have not indicated their views.	
13. Musasa	The participants were given 50 questionnaires which they filled and returned 32 questionnaires. 85% of the respondent welcomed the project, 6% responded NO and 9% have not indicated their views.	
14. Lubao	The participants were given 50 questionnaires which they filled and returned 26	

	questionnaires. 73% of the respondent welcomed the project, 27% responded NO to the project.	
15. Ivakale	The participants were given 50 questionnaires which they filled and returned 35 questionnaires. 43% of the respondent welcomed the project, 43% responded NO and 14% have not indicated their views.	

And Table two shows the views of the people regarding the project which is an open ended question. However, from the analysis of the open ended questions the experts found that few respondents answered the questions. All the responses are combined and explained in table two below.

Table 2: views of the respondents on the proposed project

Question	Responses
What do you like about the fencing project	<ul style="list-style-type: none"> • From the analysis of the questionnaires the experts found that 185 respondents view the project that it will improve forest management and conservation. Some of the respondents highlighted that the fence will control illegal loggers. • 85 respondents responded that the fencing project will create local job opportunities. • 182 responded that the project will reduce human wildlife conflict. They explained how wild animals cause

	<p>destructions in their farm e.g Monkeys and some respondents in Buyangu area complained of Antelopes coming to their farm.</p> <ul style="list-style-type: none"> • 34 people view the project that it will mitigate climate change. • 24 respondents gave the indirect impacts of the project. That when the forest is fenced and conserved it will attract tourism. • 2 responded views the fencing project that it will make the forest boundary visible.
<p>What don't you like about the fencing project?</p>	<ul style="list-style-type: none"> • Majority (141) of the respondents felt that the project will limit the local communities from accessing the forest for their livelihood e.g. firewood, grazing, farming, cultural activities among others. • 42 respondents highlighted the impacts of electric fence on human especially the children's and the livestock. • 15 viewed the project would create forest boundary dispute. • Five respondents said that most of the local youth who are unemployed depends on Mukombero for livelihood. They felt that after fencing there will be likely increase of crime in the area • 5 people also viewed the project that it will lead to displacement of the people who are already settled in the forest land. • 8 respondents viewed the project that it will likely to hike taxation e.g. forest entrance fee for the livestock.
<p>Any other comment on the project</p>	<ul style="list-style-type: none"> • 36 respondents requested for

	<p>alternative livelihood for the local community after fencing.</p> <ul style="list-style-type: none">• 30 respondents also requested community access to the forest after fencing• 23 respondents suggested community involvement in the project cycle.• 11 respondents especially those from chesero area requested tarmacking and maintenance of roads for the community.• 7 respondents also requested provision of power for the local community.• 2 respondents also suggested compensation for fence accidents and wildlife damage if it arises.
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6.0 IMPACT IDENTIFICATION AND ANALYSIS

The potential impacts are derived from the project activities and the baseline information in additional issues that emerged from the scoping. The potential environmental impacts predicted from the proposed project are varied and are expected to be both positive and negative. Some impacts will occur only during certain phases of the project life cycle while some will persist all through. Impacts are also expected to be of different severity irrespective their longevity, and as such, though some may be long-term, their severity might be low and vice versa. Some negative environmental impacts already exist in the area and are bound to occur even without the proposed project taking off.

In determining the impacts of proposed fencing a systematic environmental impact analysis following a predetermined evaluation methodology and using indicators and targets identified mostly from stakeholder information and realities on the ground as gathered during the baselines surveys and consultation and public participation process. Through brainstorming and expert judgments and scoping meeting the team of experts outlined the following as some of the important positive and negative environmental impacts of the fencing project.

The table below summarizes the impact identification and evaluation methods that were used in the ESIA study.

Theme	Aspects	Impact Identification	Evaluation
Biological Environment	<ul style="list-style-type: none"> • Forest cover • Biodiversity 	<ul style="list-style-type: none"> • Document review • Checklists • On site observation • Focused group discussions 	<ul style="list-style-type: none"> • Matrix and multi criteria analysis • Compliances with existing regulatory instruments
Physical Environment	Soil Land quality Water Waste generation and management Traffic and transport	<ul style="list-style-type: none"> • Document review • On site observation • Focused group discussions 	<ul style="list-style-type: none"> • Expert judgment • Questionnaire analysis • Stakeholder Workshop sessions

Social cultural	<p>Food security and nutritional</p> <p>Health</p> <p>Gender and Children</p> <p>Governance</p> <p>Poverty and income</p> <p>Livelihoods</p> <p>Transport and infrastructure</p> <p>Major development activities that are currently proposed</p> <p>Potential forms of development</p>	<ul style="list-style-type: none"> • Document review • On site observation • Focused group discussions • Questionnaire responses • Stakeholder work shops 	<ul style="list-style-type: none"> • Expert judgment • Questionnaire analysis • Stakeholder Workshop sessions
Economic	<p>Public infrastructure</p> <p>Connecting roads</p> <p>Schools</p> <p>Dispensaries</p> <p>Water pipeline.</p>	<ul style="list-style-type: none"> • Document review • On site observation • Focused group discussions 	<ul style="list-style-type: none"> • Expert judgment • Lead agency dialogue • Stakeholder Workshop sessions
Institutional component	<p>Institution arrangement</p> <p>Implementation structure</p>		

6.1 Impact characterization

A number of attributes were used to determine the magnitude of the impacts and at the two extremes of the attributes impacts are classified as either **major** or **minor**. Any impact that does not fall on either of the extremes was placed on a third category of medium impacts.

Major impact	Minor impacts
Extensive	
High number of people affected	Low number of people affected
Large change in Environmental conditions	Small change in present environmental setting
An unusual impacts/complex to mitigate	Common impact with readily available mitigation
Affecting critically endangered species or habitats	Not affecting critically endangered species or habitats
Affecting environmentally significant or sensitive areas e,g wetlands Pas	Not likely to affect ESA
High probability that the effect will occur	Low probability of the effect occurring
Long-term /permanent	Short term
Irreversible	Reversible
Difficult mitigate	Easy to mitigate

6.2 Positive Impacts

6.2.1 Increased conservation

Illegal activities such as poaching or subsistence hunting will be minimized, as access to the forest will be done through legal access routes. The involvement of communities in project will also ensure that perpetrators of such illegal activities are apprehended through community policing.

Other activities such as illegal logging and exploitation of forest vegetation will also be reduced. People will only use forest resources for specific purposes and in a non-degrading manner such as firewood collection and collection of fruits, tubers and other available food sources. Access to the forest will only be at specific times of the day and through legal access gates.

Fencing will enable forest restoration of the already degraded forest sections by incompatible land use activities such as cultivation.

6.2.2 Reduced human-wildlife conflict

Human-wildlife conflict has resulted in decline in agricultural productivity due to crop damage, demoralized farmers, and social upheaval. With the wildlife barrier in place, crop damage will be minimized, thereby allowing increased farm productivity by farmers adjacent to the forest and a return to social order. This will enhance food security and alleviate poverty.

6.2.3 Secure Kakamega rainforest

The fence will lead to reduced catchment degradation whose positive impacts will be felt through improved water flow within rivers and underground. This will bring benefits to surrounding farming communities and community further downstream.

6.2.4 Climate change mitigation and adaptation

Forest restoration will lead to improved carbon sequestration and thereby help reduce the accumulation of carbon dioxide (CO₂) in the atmosphere. Coupled with improved water flow, this will also enhance the capacity of local people to cope with climate change through livelihood adaptation.

6.2.5 Improved security

The electric fencing project will certainly have positive impacts to local communities who live adjacent to the forest. It is envisaged that community members will no longer be living in fear of potential raids and attacks by animals.

6.2.6 Local employment

The project will employ local community adjacent to the forest who will provide non-skilled labour during the project implementation and operation. Most of the employment during construction will be temporary but semi permanent labour will be continuously required for the fence maintenance

6.3 Negative Impacts

6.3.1 Restricted access to firewood, water sources and pasture

Forest adjacent communities will have restricted access to the forest after the proposed fence is erected. Concerns about where forest adjacent communities would get water, firewood and pasture for their livestock because they currently depend on the forest. Access gates for both people and animals will be few and restricted to specific areas. This might increase distances and time spent in accessing key resources like firewood with resultant

social hardships. The fence may also have some negative impacts in emergency situations as it may block persons from escaping from wildlife.

6.3.2 Loss of vegetation and soil erosion

A 10 metres corridor will be cleared where the fence will be aligned to pave way for 5m on either side of the fence for fence maintenance as well as a fire break. This will result in the clearing of vegetation in terms of trees, shrubs and undergrowth. Clearing of vegetation will destroy some biodiversity and wildlife habitat..

6.3.3 Solid waste generated during construction

Solid waste will be generated from construction of facilities and from left over construction materials used in the erection of the fence. Other solid wastes will be generated by construction workers in form of waste food, papers and packaging materials

6.3.4 Potential for fence vandalism

It was predicted that some individuals who may not be very happy with the project may vandalize the fence.

6.3.5 Potential accidents emanating from electrical shocks

Fears over the likelihood of child electrocution by the fence.

Summary of impacts

Project Activity	Potential Impact	Level of significance
Clearing of vegetation along fence line	Loss of vegetation cover	Moderate
	Soil erosion	Low
Excavation of chain link fence trench	Soil & soil organism disturbance	Low
Digging holes	Soil & soil organism disturbance	Low
Erecting posts	Vegetation disturbance	Low
Fitting wire strands/ insulators	Soil compaction / Vegetation trampling	Low
Construction of energizer and power houses	Soil compaction & Vegetation Disturbance	Low
	Generation of construction wastes	

Project Activity	Potential Impact	Level of significance
Construction of forest access gates	Soil compaction & Vegetation disturbance Generation of construction wastes	Low
Clearing of access roads and fire breaks	Soil and vegetation disturbance & Vegetation loss	Moderate
Construction of workmen's camp	Vegetation loss	Low
	Generation of solid waste	Low
Transportation of materials	Increase in air pollution by smoke and dust particles during transportation of construction materials to site	Moderate
	Potential injuries to construction workers	Moderate
Fence installation and operation	Malfunctioning of the fence	Moderate
Fence construction	Block wildlife access to water outside the reserve/ movement of wildlife to adjacent areas	Moderate
Maintenance of access roads and fire breaks	Soil and vegetation disturbance & Vegetation loss	Low
Electric fence operation	Injuries to community/children	Low
	Fence vandalism interfering with its effectiveness	High
Fence maintenance	Lack of funds to maintain the fence, hence affecting its sustainability and hence its purpose	High
Project Decommissioning	Increased solid waste in the form of fencing posts, fence wires	Low

6.4 Ecosystem services

Kakamega forest has a number of ecosystem services at local level, regional and even global. The proposed fencing will have an enhancement effect on most of the services but in the short term it will impact negatively to the local level services. Ecosystem services of particular importance include livestock grazing resources, firewood resources, medicinal plants, fresh water for human and livestock use and cultural and spiritual sites. Most impacts to these are associated with the fencing phase with the most significance dependency being the need for effective management of forest adjacent community access to the forest for basic resources. However through mitigations such as provision of access gates, piping water out of the forest to the community and robust community sensitization before project implementation these impacts will be negligible.

7.0 ANALYSIS OF PROJECT ALTERNATIVES

The proposed fencing project aims at protecting the Kakamega forest water catchment, reducing community dependency on the forest and minimizing human/wildlife conflicts. The EIA team explored a number of alternatives to the proposed electric fencing. Options considered included: no fence; partial fencing; Social fencing, alternative fence designs; alternative fence alignments; other possible barrier and non-barrier systems.

7.1 NO PROJECT ALTERNATIVE

Currently the forest is not fenced and this option would mean that the current status is maintained. This option could be the desirable alternative from an environmental perspective as it ensures non-interference with existing conditions. However, if Kakamega forest is not fenced the existing threats including charcoal burning, excisions, wildlife poaching, forest encroachment and over-extraction of medicinal plants would continue. Valuable hardwood, critical water catchment and wildlife habitat would continue to be threatened. There will also be minimal community participation in natural resource management and untapped income opportunities from ecotourism initiatives. In terms of both socio-economic and conservation considerations, the 'No Project Option' is quite costly in the long term and the forest is likely to suffer the tragedy of the commons as adjacent communities overexploit the forest diminishing its resilience and capacity to sustainably provide its valuable ecosystem services.

7.2 ALTERNATIVE FENCE DESIGNS

Several fence design alternatives were considered for the proposed project. Fence design should reflect the area and or animal-specific variables. Alarm systems could also be incorporated into the fence design to warn of damage or of pilfering of fence materials.

7.2.1 Simple Electric fence

This will entail fencing all along the forest reserve boundary with the option of leaving a few access gates for management purposes. This type of fencing has been tried in Kenya with high rate of success and effectiveness. Kenya Wildlife Service, Rhino Ark and other stakeholders have adopted this method mainly to contain human wildlife conflicts especially from elephants and other large problem animals inside protected areas. KWS has undertaken fencing in Mt. Kenya, Aberdares, Meru, Tsavo East and West National Parks and Arabuko Sokoke Forest Reserve, Shimba Hills National Reserve and Amboseli National Park. The cost of initial installation is high and regular maintenance is required to ensure that the

fence is effective. Electric fences have different designs depending on the purpose, area, length and the problem animal to be barred. These fences are however, ineffective in controlling burrowing animals, primates and small antelopes since they can pass through, over or underneath the fence.

7.2.2 Comprehensive electric fence

The proposed fence design is 7 feet above the ground and 3 feet underground and is a combination of electric wires as well as strong wire mesh and tight lock. It has proven effective in stopping digging animals and predators and it has been successful in controlling human wildlife conflict occurrences. It is also effective in controlling sheep and goat entry into the forest allowing for forest regeneration.

The design comprises six (6) strands of live wire and two (2) strands of earth return wires at the top, subterranean tight lock mesh wire below to 0.7m height and 0.8m tight lock mesh underground for the burrowing animals. The comprehensive fence design shall have baboon/Monkey-proof wires at the posts, meant to deter all animals except the flying and crawling small animals. This fence design is the preferred option due to its effectiveness in controlling livestock into the forest and also wildlife into the adjacent community farms.

7.2.3 NON ELECTRIC FENCE

7.2.3.1 Use of barbed wire and chain link

This alternative has the major limitation of causing serious injuries to wildlife forcing their way out or rubbing their body against the fence during their grooming exercises, hence barbed wire is not recommended and hence the alternative cannot be considered for this project.

7.2.3.2 Vegetative Buffer fence

A vegetative buffer zone contains plants that are unattractive or unpalatable to wild animals and therefore acts as a deterrent to movement out of the forest. It also serves as a clearly defined boundary to deter human encroachment into the forest. An example is the Nyayo Tea Zone which act as an effective buffer zone, separating the forest from the cultivated areas. This already exists in a section of Kakamega forest but in some instances it has resulted to forest encroachment where sections were cleared for tea growing and then left out in the planting. Activities that will reduce human-wildlife conflict and at the same time, act as a buffer zone between the forest and human settlements should be promoted. This option however may not be practical in the case of Kakamega given that most areas are already settled up to the edge of the forest boundary; furthermore the buffer zones may not be effective in controlling entry into the forest for illegal activities. Long barriers of cactus (*Opuntia sp*) have been tried elsewhere but they suffer from vigorous growth being inconsistent and invading other areas thus becoming nuisance to maintain and become

serious invasive species. This method is not practical in Kakamega given the high rainfall that would lead to proliferation of the cactus and hence become a serious invader.

7.3 Selective Fencing

Partial fencing or Island fencing would entail the construction of fence sections only where found to be most appropriate, having considered technical, social, economic and ecological factors. Topography is generally gentle around the boundaries of Kakamega forest. The advantage of partial fencing is that it would be less expensive to construct and maintain than total perimeter fencing.

7.4 Alternative Fence Alignments

Different approaches to fence alignment were analyzed including;

- 1) Fencing the whole Forest Reserve thus eradicating further encroachment in the forest
- 2) Fencing the entire forest reserve boundary; this will reduce the likelihood of encroachment of local community into the forest or wild animals to farmlands. If this option is adopted then the fencing project will not be derailed as the entire forest reserve is managed by KFS.

7.5 Buffer Creation

Barrier options, such as moats, stone walls, vegetative barriers and non-barrier options such as vegetative buffer zones, traditional community-based wildlife control options and problem animal control measures such as use of thunder-flashes and shooting of persistent problem animals exist.

Several methods have been used to minimize Human-Wildlife conflicts in Kenya. The suitability of either of these methods depends on the nature of conflict, the ecosystem, land use in the neighborhood, species involved and the resource availability and cost implication of the method chosen and its sustainability. These methods range from translocation, establishment of conservancy, use of game moats, control shooting, scaring, electric fencing and compensation for loss of property among others. The effectiveness of these methods varies depending on the animals causing problems, the design and maintenance costs.

7.5.1 Moats

Trenches of various sizes and designs have been dug in several areas of the country to control the movement of wild animals. This type of barrier was traditional way of communities protecting their farms from elephants and large mammal invasion and this is not applicable in Kakamega forest. These trenches have been used with some initial success

by KWS. The effectiveness of the moats however depends on the design, target animal species and level of maintenance. Moats are also labour intensive, environmentally unfriendly and the costs of maintenance in the long term are quite high. Moats have an advantage in that, the technology required for maintenance is less sophisticated and communities can be mobilized to undertake maintenance cheaply. A major constraint is that moats are unsuitable in hilly steep terrains like the case of Kakamega forest as they will be prone to soil erosion. Moats also interrupt the drainage system and can cause considerable soil erosion and are liable to siltation. Moat construction will also not stop access of the forest hence the illegal activities and access to the forest will continue. In view of this the use of moats as a barrier for forest protection and human-wildlife conflict resolution in the project area is not feasible.

7.6 Analysis Of Alternative Power Sources

7.6.1 Mains Power

If this power source alternative is used, it may take longer time to install due to the technical work involved. It will entail buying transformers and mobilizing to bring the power line infrastructure up to the fence line, making it expensive and may cause visual impacts. A lot of education and awareness and signage on the dangers associated with main power will require to be undertaken. Maintenance is high and is also costly in terms of payment of the monthly bills. Power black outs may occur and thus an alternative power back-up is required to maintain its effectiveness.

7.6.2 Solar Power

This power source is ideal as the project area has long sunshine exposure. It involves purchase and installation of energizers and solar panels. Therefore, it is expensive to install but cheaper in the long term as there are no regular payments on monthly bills other than replacement of batteries every three years and is also environmentally friendly. Minimal power black outs will be experienced, and it is thus reliable. Another limitation is the potential of theft of the solar panels. However this can be mitigated through an effective community policing campaign.

7.7 ANALYSIS OF FENCING POSTS

The project has four possible types of posts that could be used. Durability and ease of maintenance of the fence materials are important considerations. Short-term savings on materials may result in increased long-term maintenance and escalating costs. The choice of post material remain open for this project as it does not have significant impacts on the part of the biophysical and social environment and will be guided by the economics of the project.

7.7.1 Wooden Posts

These are commonly used, easily available and cheap to buy and carry. However, they require treatment, may not be long lasting and can be broken when handled with force. Wooden posts also contribute to forest destruction, though the project will use wooden posts that are readily available from plantation forests grown for commercial purposes. To reduce the use of tree products plastic poles from recycled polythene will also be used.

7.7.2 Plastic Posts

The proposed fence will utilize these posts in combination with wooden ones. These posts also have some limitations: in some instances they reduce the tensile strength of the electric wires because they bend upon straining. In this case the posts will be installed and reinforced by the wooden ones. Further the climate of the area is generally cool and hence the post are not prone to sagging when hot. These are environmentally friendly and manufactured from recycled materials. They are resistant to termite infestation do not require insulators and are long lasting.

7.7.3 Concrete Posts

These are made from a mixture of cement, ballast and sand. They are long lasting and require no treatment. Given that they are expensive to make and transport due to their weight, they will not be used in the proposed project.

7.7.4 Metal Posts

Metal posts are very expensive to buy and transport and are commonly used in towns especially on top of concrete walls. They require insulators and are firmly fixed by use of concrete mixture. Although they are durable, strong and have the lowest maintenance requirements, they are not good for the proposed project as they can easily be vandalized for scrap metal resale.

8.0 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

8.1 Introduction

The proposed project will be implemented in a collaborative partnership approach through a three tier committee. Namely Project Steering Committee, Project Implementation Committee and field technical committee. The key implementing partners include Ministry of Environment and Forestry, Rhino Ark Charitable Trust, KFS, KWS, County Government of Kakamega, County Government of Vihiga, and the Community Forest Associations. Other collaborative partners include National Environment Management Authority, National Administration, Survey of Kenya, Kenya Forest Research Institute, Kenya Tourism Board and other supporting corporates.

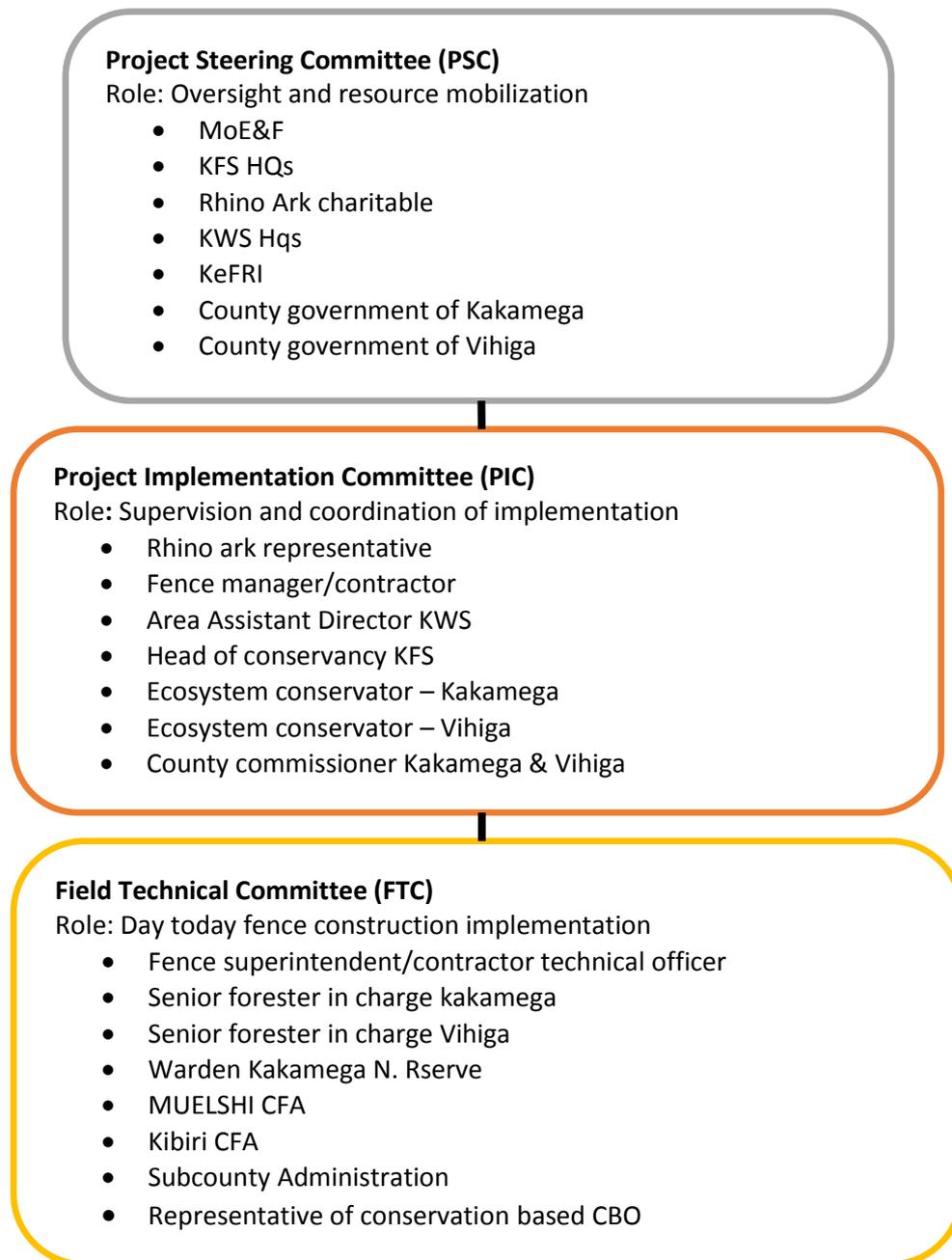


Figure 28: Proposed project implementation structure

The implementation will be participatory and in addition to the aforementioned, the local community through CFAs and the National Administration will fully be engaged. The aim of this consultative process is to ensure that there is consensus, buy-in and ownership of the project by all the relevant stakeholders.

8.2 Sustainability

The sustainability of this project is vital and this will be achieved through:

- Establishment of a mechanism that ensures effective engagement with and inclusive participation of the forest adjacent communities in the project for sustained ownership and cooperation;
- Engagement of competent and adequate staff for fence surveillance and maintenance including fence attendants and fence supervisors.
- Establishment of a long-term institutional framework and sustainable financing mechanism to support maintenance of the project outcome, monitor of the project performance and respond to emerging challenges. This will be coordinated through a memorandum of Agreement between the County Governments, Rhino Ark Charitable Trust, KFS and KWS.

The Environmental management and monitoring plan below is a tabular presentation showing the project activities, predicted adverse impacts, mitigation measures, period and responsibility for implementation and the estimated costs of the mitigation measures.

The EMP for the proposed Kakamega forest electric fence

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
Clearing of vegetation along fence line	Loss of vegetation cover	Moderate	Restrict clearing only to fence alignment section	During the construction period	Nil	Fence technical committee
			Fence line to follow forest boundary as much as possible	During the construction period	Nil	FTC
			Human labour to be used during fence clearance	During the construction period	Nil	FTC
Excavation of chain link fence trench	Soil & soil organism disturbance	Low	Undertake backfilling of excavated sites after fence installation	During the construction period	Nil	FTC
Digging holes	Soil & soil organism disturbance	Low	Return soil to site after post are erected	During the construction period	Nil	FTC
Erecting posts	Vegetation disturbance	Very Low	Confine activity within the cleared area	During the construction period	Nil	FTC
Fitting wire strands/ insulators	Soil compaction / Vegetation trampling	Low	Confine activity within the cleared area	During the construction period	Nil	FTC
Construction of energizer and power houses	Soil compaction / Vegetation disturbance Generation of	Low	Confine activity to construction area Apply the 3Rs (Reduce, Reuse, Recycle)	During the construction period	15,000	FTC

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
	construction wastes		Dispose waste at licensed disposal sites			
Construction of forest access gates	Soil compaction & Vegetation disturbance Generation of construction wastes	Low	Confine activity to construction area Apply the 3Rs (Reduce, Reuse, Recycle) Dispose waste at licensed disposal sites	During the construction period	10,000	Fence technical committee
	Social conflict on gate location	Medium	Develop a criterion for gate points Involve village elders and local administration during identification			FTC
Clearing of access roads and fire breaks	Soil and vegetation disturbance & Vegetation loss	Moderate	Encourage use of human labour instead of heavy machines Replant trees in the degraded forest areas	During the construction period	100,000	Fence committee

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
Construction of workmen's camp	Vegetation loss	Low	Limit the number of people staying in the camp Limit camp operations to a small area Encourage use of mobile tents for fence construction workers	During the construction period	Nil	Fence committee
	Generation of solid waste	Low	All solid to be collected and disposed appropriately			
Transport of materials	Increase in air pollution by smoke and dust particles during transportation of construction materials to site	Moderate	Control vehicle speeds to minimize dust and encourage use of serviceable vehicles	During the construction period	Nil	Fence committee
	Potential injuries to construction workers	Moderate	Always provide a well equipped First Aid Kit at the project site Carry out an induction course on safety precautions	Continuous	20,000	Fence Committee

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
Fence installation and operation	<p>Restricted access to forest resources</p> <p>Potential for fence vandalism</p> <p>Boundary disputes within existing settlements excisions from the forest</p>	medium	<ul style="list-style-type: none"> ➤ Provide community access gates to the forest where necessary ➤ Take some of the resources outside forest to the community e.g. pipe water out ➤ Establish community wood lots ➤ Support community enterprise projects ➤ Alternative sources energy community projects ➤ Community sensitization and awareness creation ➤ Encourage community policing by employ community scouts and fence attendants from forest adjacent communities 	During operation	400,000	PIC/PSC/FTC

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
	Loss of income generated from forest resources	Medium	<ul style="list-style-type: none"> ➤ Provide alternative community enterprise projects comprising of nature based and ecotourism activities ➤ Agricultural extension programmes such as Zero grazing, breed improvement to reduce livestock numbers ➤ Employ local content in project cycle ➤ Promote farm forestry and domesticate some forest plants for commercial production ➤ Educate community on genetic resource commercialization and promote ABS under Nagoya protocol ➤ Enforce laws on illegal income from charcoal burning, mining and illegal logging 	Construction and operation	50,00000/yr	FTC&PIC
Fence operation	Malfunctioning of the fence	Moderate	Train fence attendants to ensure that the fence is checked for effectiveness	Continuous	500,000/yr	KWS

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
			Maintain the fence cut line regularly	Continuous		KFS, KWS, Rhino Ark
			Ensure regular replacement of broken down fence equipment	Continuous	1.2 m/year	KFS, KWS, Rhino Ark
			Ensure that the energizer houses have security to mitigate theft of energizers and electric wires	Continuous		KWS
Maintenance of access roads and fire breaks	Soil and vegetation disturbance & Vegetation loss	Low	Encourage use of human labour	Continuous	100,000	KFS, Rhino Ark
Electric fence operation	Injuries to community/children	Moderate	Install clearly labeled warning signs every 100 meters written 'HATARI' to the electric wires to caution of danger	Continuous	20,000	Fencing Committee
	Fence vandalism interfering with its effectiveness	High	Sensitize the community to appreciate and participate in ensuring fence sustainability	Continuous	30,000	KFS, KWS & Rhino Ark
			Support community enterprise projects	Continuous	5,000,000	KFS, KWS
			Encourage community policing	Continuous	Nil	KFS
			Intensify patrols in along the fence line	Continuous	120,000	KFS
Fence maintenance	Lack of funds to maintain the fence,	High	Establish a fence maintenance Kitty	Continuous	12,000,000/yr	Rhino Ark

Project Activity	Potential Impact	Level of significance	Mitigation	Time Frame	Mitigation cost (Kshs)	Responsibility
	hence affecting its sustainability and hence its purpose		Form a fence committee	Continuous	30,000	KFS, Rhino Ark County government, KWS
			Enter into a memorandum of understanding		50000	KFS, Rhino Ark KWS, County governments
Project Decommissioning	Increased solid waste in the form of fencing posts, fence wires,	High	Remove all fencing materials and dispose appropriately as provided under the Public Procurement and Disposal Act 2005	When project is obsolete	50,000	KWS/KFS & County governments
	Injuries to wildlife and human falling on open holes left after posts removal	High	Ensure all open areas are adequately backfilled	When project is obsolete	10,000	KWS/KFS & County governments
	Increased soil erosion resulting from cleared areas initially serving as fence maintenance roads, ranger/ security camps	Moderate	Undertake planting of indigenous tree species on these areas	When project is obsolete	20,000	KWS/KFS & County governments

9.0 CONCLUSION AND RECOMMENDATIONS

There is no denying the crucial importance of rainforest ecosystems like Kakamega to our planet. They are hugely important for biodiversity and also for regulating the amount of carbon in our atmosphere. They are beautiful and unforgettable places to visit as long as we do so in an ecologically responsible way. However, our rainforests are being threatened right now by factors such as, Encroachment, deforestation, climate change (which makes it harder for them to thrive) and humans poaching rare and endangered animals either for food or for trade. As such, it is vitally important that we all take action to safeguard our rainforests right now and there are many ways in which we can do this.

It is clear from stakeholder discussions that Kakamega forest is faced with imminent forest degradation emanating from human encroachment and over-exploitation. The decision to fence should occur early while the option to establish regeneration is still available and the forest resilience is still intact. Regenerating a forest with significant human damage might require more expensive remedial action in addition to fences and this should not be the way to go for a biodiverse ecosystem like Kakamega and hence the time to protect the forest and its rich biodiversity is now. The government wants to see a sustainable forest management and increased forest cover particularly indigenous forest across the country

Due to its rich and unique biodiversity, its ecological, cultural and social economic value, maintaining Kakamega forest as a natural indigenous forest should be a matter of priority for the forest stakeholders. Ensuring intact future pristine forest then calls for an investment in the forest conservation and the proposed fencing is one bold step in that direction. The benefits of fencing include not only a stand of valuable timber, but also the many other values of a sustainable forest management. Fencing is a gift to the future with improved wildlife habitat, plant diversity and other benefits as the ultimate goal. Fencing costs are part of an overall forest management plan. The livelihood concerns that were extensively raised by the community cannot be sustained by the current exploitation and will ultimately be lost if the forest is degraded,

The project impact analysis in Chapter six and eight demonstrates that the positive impacts far outweigh the negative impacts and the adverse impacts identified can adequately be mitigated. From the analysis of the protection option in chapter 7 it is apparent that electric fencing is a feasible option. It is therefore prudent to conclude that the Kakamega fencing project be implemented as a matter of priority to minimize further degradation of the Kakamega forest ecosystem.

The fence will improve social order and enhance small holder agriculture production, food security, and general security, improved incomes and livelihoods. In addition, the sustainability is assured with adequate sensitization of the communities and in collaboration with implementing agencies to maintain the fence. In this regard, it is recommended that Kakamega Fence Trust Fund be established for the fence construction and maintenance. The Trust Fund should have both a Management and Technical Committee that involve the KWS, KFS, Rhino Ark charitable Trust Kakamega and Vihiga County and local communities.

9.1 Recommendations

1. The fence alignment should follow the forest boundary as much as possible but where the excisions exist with private settlements it is recommended that the settlements are fenced outside until until the contentious excisions are amicably resolved.
2. Public institutions including Chikusa prison, schools and the ASK grounds need to be fenced inside with a ring non electric fence to avoid further encroachment of the natural forest.
3. Once constructed, a monitoring programme should be instituted to investigate the impacts of the fence on forest regeneration and wildlife status.
4. The EMP should be implemented and improvements done where necessary.
5. The community fence committees along the locations should be constituted and be involved in the construction and maintenance of the fence phases.
6. A fence sustainability/maintenance fund in the form of an endowment fund should be set up to finance the fence maintenance.
7. Access gates should be few in number and manned by KFS &KWS in collaboration with community policing.
8. Alternative sources of livelihoods and enterprise projects should be supported to ensure options for communities who were previously dependent on the forest resources. Key among them is establishment of community woodlots

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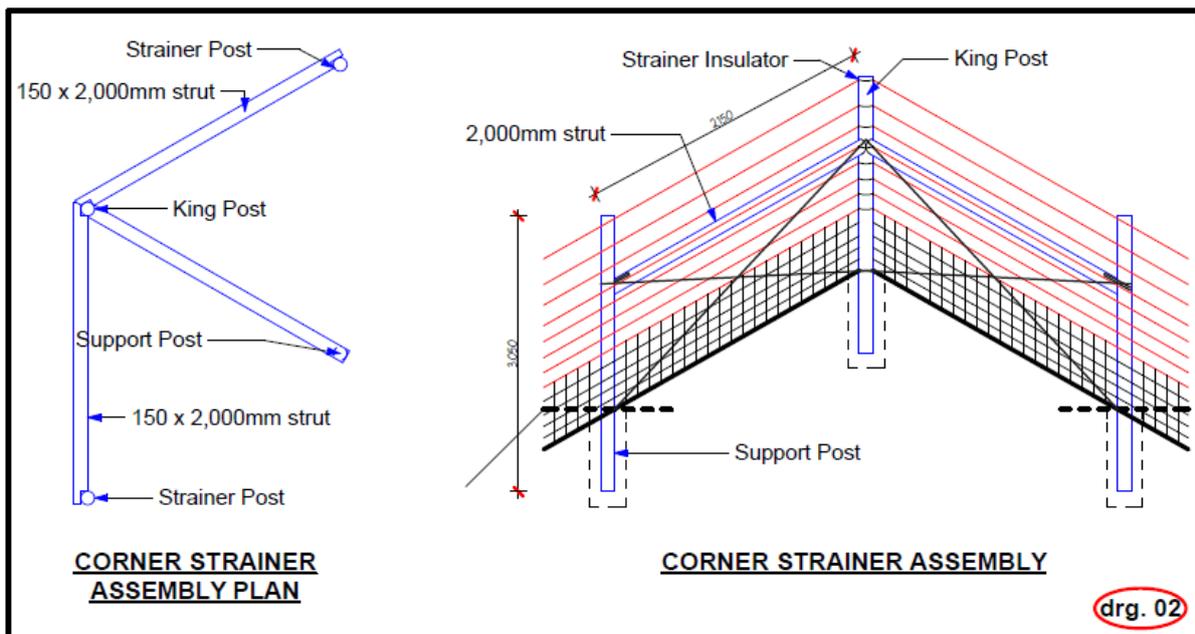
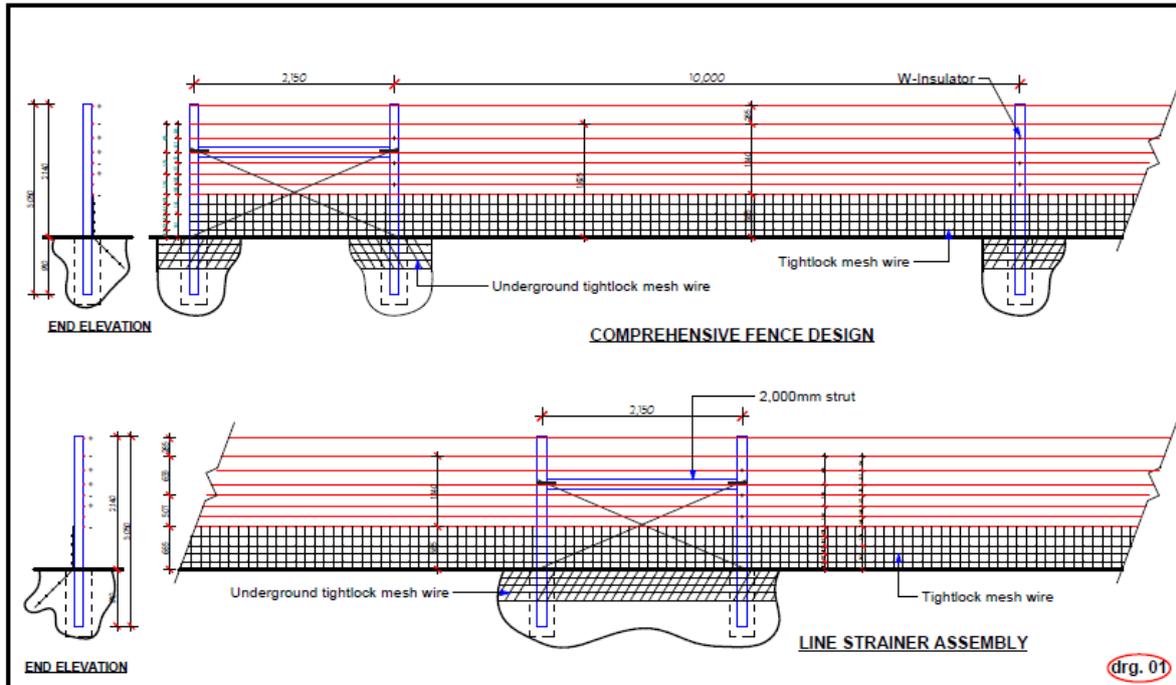
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ANNEXES

Annex1 Fence design drawings



Annex2:Sample questionnaires



MUSAQA

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for public consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... Abdurrahma Musaqa Contact... 0722745924

Location/Village... MUSAQA

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50 ✓
2. Formal Education level
 None Primary Secondary ✓ Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years ✓
4. Do you own land around Kakamega forest (Yes) [] (No) []
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres ✓ 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km ✓ 3- 5 KM Above 5 km
7. Does the land have a title deed Yes [] No []
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all over 5 yrs
9. Reasons for entering the forest?

<input type="checkbox"/> Firewood collection	<input type="checkbox"/> Construction materials	<input type="checkbox"/> Use Connecting route
<input type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input type="checkbox"/> Recreation/tourism
<input type="checkbox"/> Honey collection	<input type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input type="checkbox"/> Seeds and wildlings	<input type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input type="checkbox"/> Fruits, insects	<input type="checkbox"/> Cultural (prayers, ✓
<input type="checkbox"/> Carvings & withies	vegetables and roots	circumcision) & others ✓
	<input type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?		No	

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	3	✓
Reduced Human wildlife conflict	5	✓
Local employment	1	✓
Mitigating Climate Change	2	✓
Increase Plants diversity	2	✓
Increase Animal diversity	5	✓
Enhanced forest management and coordination amongst stakeholders	2	
Support community livelihood	5	

18. What do you like about the fencing project?

It help to protect destruction of the forest.

19. What don't you like about the fence project?

It will help move rain around the area.

20. Any other comment on the project?

We need the project like yesterday.

Signature: *Orio Munoi* Date: 26/9/2019

ORIO MUNO ! ASANTE ! THANK YOU!



1 Kyura

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant THOMAS MEEHI Contact 0725025059

Location/Village VIHIGA / IKUYWA

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input checked="" type="checkbox"/> Firewood collection	<input checked="" type="checkbox"/> Construction materials	<input checked="" type="checkbox"/> Use Connecting route
<input checked="" type="checkbox"/> Grazing and fodder	<input checked="" type="checkbox"/> Charcoal burning	<input type="checkbox"/> Recreation/tourism
<input checked="" type="checkbox"/> Honey collection	<input checked="" type="checkbox"/> Medicinal plants	<input checked="" type="checkbox"/> Mining
<input checked="" type="checkbox"/> Logging for timber	<input checked="" type="checkbox"/> Seeds and wildlings	<input checked="" type="checkbox"/> Farming
<input checked="" type="checkbox"/> Fencing poles	<input checked="" type="checkbox"/> Fruits, insects	<input checked="" type="checkbox"/> Cultural(prayers, circumcision) & others
<input checked="" type="checkbox"/> Carvings &withies	vegetables and roots	
	<input checked="" type="checkbox"/> Domestic Water	



No	Questions	Response		Commer
		Yes	No	
10	Have you heard about the proposed fencing project?		✓	
11	Will the fence interfere with your daily economic activity?	✓		
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		Snakes

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	
Reduced Human wildlife conflict	
Local employment	
Mitigating Climate Change	
Increase Plants diversity	
Increase Animal diversity	
Enhanced forest management and coordination amongst stakeholders	
Support community livelihood	

18. What do you like about the fencing project?

Protect Forest Destruction,

19. What don't you like about the fence project?

20. Any other comment on the project?

I appreciate to fence.

Signature *Orion Muno* Date *24/9/2019*

ORIO MUNO ! ASANTE ✓ THANK YOU!



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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kaka Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest enclose total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical catchment and biodiversity hotspot that supports community livelihoods in the region.

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You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant Beatrice Sarah Contact 0102446940

Location/Village Akenyero Village

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input type="checkbox"/> Firewood collection	<input type="checkbox"/> Construction materials	<input type="checkbox"/> Use Connecting route
<input type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input type="checkbox"/> Recreation/tourism
<input type="checkbox"/> Honey collection	<input type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input type="checkbox"/> Seeds and wildlings	<input checked="" type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input type="checkbox"/> Fruits, insects	<input type="checkbox"/> Cultural (prayers, circumcision) & others
<input type="checkbox"/> Carvings & withies	<input type="checkbox"/> vegetables and roots	
	<input type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?	✓		
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	
Reduced Human wildlife conflict	
Local employment	
Mitigating Climate Change	
Increase Plants diversity	
Increase Animal diversity	
Enhanced forest management and coordination amongst stakeholders	
Support community livelihood	

18. What do you like about the fencing project?

It has done a good job of fencing the kakamega forest. I like that.

19. What don't you like about the fence project?

Dont let the wild animals to come to our homes.

20. Any other comment on the project?

I like the project because it has done a good job. The wild animals will not enter eat our crops which are around the forest.

Signature B Date 17/09/2019

ORIO MUNO ! ASANTE ! THANK YOU!



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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

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You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant ASAVA HUMPHREY (CHANG'ANDA) Contact 0722926377

Location/Village MASHARU / JIABORU

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No) WITHIN
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input checked="" type="checkbox"/> Firewood collection	<input checked="" type="checkbox"/> Construction materials	<input type="checkbox"/> Use Connecting route
<input checked="" type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input checked="" type="checkbox"/> Recreation/tourism
<input checked="" type="checkbox"/> Honey collection	<input checked="" type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input checked="" type="checkbox"/> Seeds and wildlings	<input checked="" type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input checked="" type="checkbox"/> Fruits, insects	<input checked="" type="checkbox"/> Cultural (prayers, circumcision) & others
<input type="checkbox"/> Carvings & withies	vegetables and roots	
	<input checked="" type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?	✓		
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	✓4
Reduced Human wildlife conflict	4
Local employment	1
Mitigating Climate Change	3
Increase Plants diversity	2
Increase Animal diversity	2
Enhanced forest management and coordination amongst stakeholders	3
Support community livelihood	1

18. What do you like about the fencing project?

- Protect us from wild animals

19. What don't you like about the fence project?

easy
 No, access to firewood and grazing

20. Any other comment on the project?

Fencing is a good government initiative because it will protect indigenous trees thus enhancing water catchment

Signature: Orio Munoi Date: 24/07/2019
 ORIO MUNOI ASANTE! THANK YOU!



Vihiga

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakar Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical watershed catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for public consultation and public participation in the ESIA process. A team of experts comprising of government officials have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant ELUHA ALYNIA Contact 0702575571

Location/Village V. IRHEMBA

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|--|--|--|
| <input type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input checked="" type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input checked="" type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input checked="" type="checkbox"/> Fruits, insects | <input type="checkbox"/> Cultural (prayers, |
| <input type="checkbox"/> Carvings & withies | vegetables and roots | circumcision) & others |
| | <input type="checkbox"/> Domestic Water | |



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?	✓		
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	4
Reduced Human wildlife conflict	4
Local employment	3
Mitigating Climate Change	4
Increase Plants diversity	5
Increase Animal diversity	5
Enhanced forest management and coordination amongst stakeholders	4
Support community livelihood	2

18. What do you like about the fencing project?

I welcome the project but my opinion is that it should be done in a way to help locals improve their livelihood and provide for an entrance!

19. What don't you like about the fence project?

If it can limit completely the access of the locals to enter the forest.

20. Any other comment on the project?

The project has to give the locals first priority for working on the project for them to earn a living.

Signature..... *Orion Muno* Date..... *12/9/19*

ORIO MUNO ! ASANTE ! THANK YOU!



Shamiloh

No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?		✓	

17. Rank the positive contribution of the forest in a scale of 1-5 below
Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	5
Reduced Human wildlife conflict	1
Lccal employment	4
Mitigating Climate Change	5
Increase Plants diversity	5
Increase Animal diversity	5
Enhanced forest management and coordination amongst stakeholders	5
Support community livelihood	5

18. What do you like about the fencing project?

That there will control of usage and entry into the forest

19. What don't you like about the fence project?

If the government will use the fence to keep the community off usage of the same.

20. Any other comment on the project?

The Fence boundary be placed next to the forest after Nyayo Tea Zone involvement of community will assist preservation. However if strangers will be used there will be resistance

Signature *[Signature]* Date 10/09/2019
 ORIO MUNO ! ASANTE ! THANK YOU!



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

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You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant HUBSAIN KHAMASI KABANI Contact 0725918033

Location/Village SHIBUYE LOC. SHIBUYE V.

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Firewood collection | <input checked="" type="checkbox"/> Construction materials | <input checked="" type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input checked="" type="checkbox"/> Recreation/tourism |
| <input checked="" type="checkbox"/> Honey collection | <input checked="" type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Cultural (prayers, circumcision) & others |
| <input type="checkbox"/> Fencing poles | <input checked="" type="checkbox"/> Fruits, insects | |
| <input type="checkbox"/> Carvings & withies | vegetables and roots | |
| | <input checked="" type="checkbox"/> Domestic Water | |



Kamolem

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the local community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical watershed catchment and biodiversity hotspot that supports community livelihoods in the region.

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You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant..... JOHN KIHASIHAI Contact..... 0721465076
 Location/Village..... KAMUKAM BS

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50 ✓

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years ✓

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|--|--|---|
| <input type="checkbox"/> Firewood collection ✓ | <input checked="" type="checkbox"/> Construction materials | <input type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input checked="" type="checkbox"/> Recreation/tourism |
| <input checked="" type="checkbox"/> Honey collection | <input checked="" type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input checked="" type="checkbox"/> Seeds and wildlings | <input checked="" type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input checked="" type="checkbox"/> Fruits, insects | <input checked="" type="checkbox"/> Cultural (prayers, circumcision) & others |
| <input checked="" type="checkbox"/> Carvings & withies | vegetables and roots | |
| | <input checked="" type="checkbox"/> Domestic Water | |



No	Questions	Response		Comment
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?	✓		
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	3
Reduced Human wildlife conflict	4
Local employment	4
Mitigating Climate Change	1
Increase Plants diversity	3
Increase Animal diversity	4
Enhanced forest management and coordination amongst stakeholders	3
Support community livelihood	3

18. What do you like about the fencing project?

will protect human conflict and animals

19. What don't you like about the fence project?

Wild Animals will not interfere with human

20. Any other comment on the project?

To leave the Gate OPEN during recruitment

Signature: Orion Date: 26/9/19

ORIO MUNO ! ASANTE ! THANK YOU!



Kisumu / che

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kaka Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest enclo total area of 244Km2 approximately 24,819 hectares. The forest is a world heritage site, a critical v catchment and biodiversity hotspot that supports community livelihoods in the region.

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You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... MATHEWS ELISHA Contact... 0707954679

Location/Village... MUNGAKHA

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|--|---|---|
| <input type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input type="checkbox"/> Use Connecting route |
| <input type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input type="checkbox"/> Fruits, insects | <input type="checkbox"/> Cultural (prayers, |
| <input type="checkbox"/> Carvings & withies | vegetables and roots | circumcision) & others |
| | <input type="checkbox"/> Domestic Water | |



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?		✓	
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	5
Reduced Human wildlife conflict	5
Local employment	4
Mitigating Climate Change	5
Increase Plants diversity	3
Increase Animal diversity	4
Enhanced forest management and coordination amongst stakeholders	4
Support community livelihood	4

18. What do you like about the fencing project?

- a) Creating employment.
- b) It will reduce Human wildlife Conflict.
- c) It will Support Community livelihood.

19. What don't you like about the fence project?

20. Any other comment on the project?

I just Support the Project.

Signature  Date 27/9/19

OPIC MUNGU ...



Butang

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... NELLY ALUTA Contact... 0704304325
 Location/Village... BUTANGU

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input type="checkbox"/> Firewood collection	<input type="checkbox"/> Construction materials	<input type="checkbox"/> Use Connecting route
<input type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input checked="" type="checkbox"/> Recreation/tourism
<input type="checkbox"/> Honey collection	<input type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input type="checkbox"/> Seeds and wildlings	<input type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input type="checkbox"/> Fruits, insects	<input type="checkbox"/> Cultural (prayers,
<input type="checkbox"/> Carvings & withies	vegetables and roots	circumcision) & others
	<input type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?		✓	

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	5
Reduced Human wildlife conflict	3
Local employment	4
Mitigating Climate Change	3
Increase Plants diversity	4
Increase Animal diversity	4
Enhanced forest management and coordination amongst stakeholders	2
Support community livelihood	3

18. What do you like about the fencing project?

Fencing the forest will enable the increase in plants diversity and animal diversity. This will also reduce the death cases of animals and reduce deforestation.

19. What don't you like about the fence project?

It will ^{reduce} decrease the foreign exchange through ^{increase} increase in tourism activities in the community and county government too.

20. Any other comment on the project?

Since it is a Tropical Rainforest, it will open ways for tourism activities worldwide making it known to many tourists.

Signature..........Date..... 16/09/2019

ORIO MUNOO ! ASANTE ! THANK YOU!



Mchirikalo

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km2 approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... PATERSON IGATA Contact... 0729 457 895

Location/Village... BUKHUNGU - MUKHAMARA COMMUNITY - MCHIRIKALO INNOVATION PLATFORM SECRETARIAT

1. Age category MCHIRIKALO INNOVATION PLATFORM SECRETARIAT
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?
- | | | |
|--|---|---|
| <input type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input checked="" type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input checked="" type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Cultural(prayers, circumcision) & others |
| <input type="checkbox"/> Fencing poles | <input type="checkbox"/> Fruits, insects vegetables and roots | |
| <input type="checkbox"/> Carvings & withies | <input type="checkbox"/> Domestic Water | |

1 Farming



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	<input checked="" type="checkbox"/>		
11	Will the fence interfere with your daily economic activity?	<input checked="" type="checkbox"/>		
12	Are you in any way involved in the forest management?	<input checked="" type="checkbox"/>		SKFM
13	Will you benefit from the project in any way?	<input checked="" type="checkbox"/>		
14	Do you welcome the project?	<input checked="" type="checkbox"/>		
15	Do you require access gate to the forest once it is fenced?	<input checked="" type="checkbox"/>		
16	Are there wild animals from the forest that raid your farm?	<input checked="" type="checkbox"/>		

17. Rank the positive contribution of the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	5	5
Reduced Human wildlife conflict	2	2
Local employment		3
Mitigating Climate Change		5
Increase Plants diversity		4
Increase Animal diversity		3
Enhanced forest management and coordination amongst stakeholders		5
Support community livelihood		4

18. What do you like about the fencing project?

It protect the Microcatchment Areas,
 * It improves and maintain our climate
 * It will retain our fertility in our lands
 * It will create employment to the lower

19. What don't you like about the fence project?

.....

.....

20. Any other comment on the project?

.....

.....

Signature: Orio Munro Date: 10/09/2019
 ORIO MUNRO ! ASANTE ! THANK YOU!



Chiroba

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical watershed catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for public consultation and public participation in the ESIA process. A team of experts comprising of government officials have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... CALEB M. IMBUKWA Contact... 0710732434

Location/Village... VIHIGA, CHIROBANI

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input checked="" type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input type="checkbox"/> Fruits, insects | <input type="checkbox"/> Cultural(prayers, circumcision) & others |
| <input type="checkbox"/> Carvings &withies | <input type="checkbox"/> vegetables and roots | |
| | <input checked="" type="checkbox"/> Domestic Water | |



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓	✓	
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		
14	Do you welcome the project?	✓		employment
15	Do you require access gate to the forest once it is fenced?	✓		Grazing
16	Are there wild animals from the forest that raid your farm?	✓		TIKFIK, monkey

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	3
Reduced Human wildlife conflict	2
Local employment	5
Mitigating Climate Change	3
Increase Plants diversity	4
Increase Animal diversity	5
Enhanced forest management and coordination amongst stakeholders	2
Support community livelihood	3

18. What do you like about the fencing project?

- Employment
- Protection of local trees and Animals
- It will make the area be developed, (Cause development)

19. What don't you like about the fence project?

Wild animals will increase and hence will interfere with our Domestic animals, also they will danger our life.

20. Any other comment on the project?

Signature Orion Date _____

ORIO MUNO ! ASANTE ! THANK YOU!



16/12

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical watershed catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for public consultation and public participation in the ESIA process. A team of experts comprising of government officials have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant..... ERNEST MIHESO Contact..... 071263402
 Location/Village..... S.HIBUYE / MUKANGO

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input type="checkbox"/> Firewood collection	<input type="checkbox"/> Construction materials	<input checked="" type="checkbox"/> Use Connecting route
<input type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input type="checkbox"/> Recreation/tourism
<input type="checkbox"/> Honey collection	<input type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input type="checkbox"/> Seeds and wildlings	<input checked="" type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input type="checkbox"/> Fruits, insects	<input type="checkbox"/> Cultural(prayers,
<input type="checkbox"/> Carvings &withies	vegetables and roots	circumcision) &others
	<input type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		Maasai herds
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	5	5
Reduced Human wildlife conflict	5	5
Local employment	5	5
Mitigating Climate Change	2	2
Increase Plants diversity	5	5
Increase Animal diversity	5	5
Enhanced forest management and coordination amongst stakeholders	5	5
Support community livelihood	5	5

18. What do you like about the fencing project?

Increased forest mgt and increase plant diversity

19. What don't you like about the fence project?

Nothing

20. Any other comment on the project?

Water must be provided for those undertaking farming and other activities.

Signature: [Signature] Date: 12/07/19
 ORIO MUNO ! ASANTE ! THANK YOU!



shandema

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST
ELECTRIC PERIMETER FENCE**

PUBLIC CONSULTATION FORM

BACKGROUND

KW in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant MUSA SHAMALA Contact 0706896774

Location/Village MULMANI AREA BULOVI-SUB-LOCATION

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|--|---|--|
| <input type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input type="checkbox"/> Use Connecting route |
| <input type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input type="checkbox"/> Fruits, insects | <input type="checkbox"/> Cultural(prayers, circumcision) &others |
| <input type="checkbox"/> Carvings &withies | <input type="checkbox"/> vegetables and roots | |
| | <input type="checkbox"/> Domestic Water | |



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?		✓	
13	Will you benefit from the project in any way?		✓	
14	Do you welcome the project?	✓		
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?		✓	

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	
Reduced Human wildlife conflict	
Local employment	✓
Mitigating Climate Change	✓
Increase Plants diversity	✓
Increase Animal diversity	
Enhanced forest management and coordination amongst stakeholders	✓
Support community livelihood	

18. What do you like about the fencing project?

MITI ISI KATWE KATWE OVIO

19. What don't you like about the fence project?

KUZUA WANYAMA KU TOKA KWA MUSITU

20. Any other comment on the project?

WANYAMA WASTOKE KWARIBU
 MIMEA

Signature: MSA Date: 13/9/2019

ORIO MUNO ! ASANTE ! THANK YOU!



IVAKALE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water attachment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for consultation and public participation in the ESIA process. A team of experts comprising of government officers have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, the ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant... JARUS SHISUNGU ANALE Contact... 0746622165

Location/Village... KAMBIRI/IVAKALE

1. Age category
 Below 18 years 20-30 30-40 40-50 Above 50
2. Formal Education level
 None Primary Secondary Tertiary
3. How long have you settled here?
 Less than 5 years 5-15 16-25 26-35 Above 35 years
4. Do you own land around Kakamega forest (Yes) (No)
5. What is the size of your land/ Family land
 Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres
6. What is the distance between your home and the forest Reserve boundary?
 Below 1 KM 1- 2 Km 3- 5 KM Above 5 km
7. Does the land have a title deed Yes No
8. How often do you get into Kakamega forest?
 Daily Weekly Monthly Yearly Not at all
9. Reasons for entering the forest?

<input type="checkbox"/> Firewood collection	<input type="checkbox"/> Construction materials	<input type="checkbox"/> Use Connecting route
<input type="checkbox"/> Grazing and fodder	<input type="checkbox"/> Charcoal burning	<input checked="" type="checkbox"/> Recreation/tourism
<input type="checkbox"/> Honey collection	<input type="checkbox"/> Medicinal plants	<input type="checkbox"/> Mining
<input type="checkbox"/> Logging for timber	<input type="checkbox"/> Seeds and wildlings	<input type="checkbox"/> Farming
<input type="checkbox"/> Fencing poles	<input type="checkbox"/> Fruits, insects	<input type="checkbox"/> Cultural(prayers,
<input type="checkbox"/> Carvings &withies	vegetables and roots	circumcision) &others
	<input type="checkbox"/> Domestic Water	



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	✓		
11	Will the fence interfere with your daily economic activity?		✓	
12	Are you in any way involved in the forest management?	✓		
13	Will you benefit from the project in any way?	✓		Conservation
14	Do you welcome the project?	✓		forest conservation
15	Do you require access gate to the forest once it is fenced?	✓		
16	Are there wild animals from the forest that raid your farm?	✓		For research

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below

Very low (1), low(2), medium (3), high(4), very high (5) ✓

Protect Kakamega water Catchment	5	5
Reduced Human wildlife conflict	4	4
Local employment		2
Mitigating Climate Change		5
Increase Plants diversity		5
Increase Animal diversity		5
Enhanced forest management and coordination amongst stakeholders		4
Support community livelihood		3

18. What do you like about the fencing project?

I support the project because it enhances beauty and canopy of the forest.

19. What don't you like about the fence project?

None

20. Any other comment on the project?

It's for good conservation of the forest.

Signature J. B. Date 13/09/2019

ORIO MUNO ! ASANTE ! THANK YOU!



Vihiga

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED KAKAMEGA FOREST ELECTRIC PERIMETER FENCE

PUBLIC CONSULTATION FORM

BACKGROUND

KWS in partnership with KFS, Rhino Ark and the County Governments of Kakamega and Vihiga intend to erect an electric fence around Kakamega forest blocks. The fencing is one of the components of the Kakamega Forest Conservation Programme that will be implemented jointly by the stakeholders in collaboration with the community. The Forest is a tropical rainforest situated in Kakamega and Vihiga Counties of Kenya, and it is part of the ancient Guineo-Congolian rainforest that once spanned the African continent. The forest encloses a total area of 244Km² approximately 24,819 hectares. The forest is a world heritage site, a critical water catchment and biodiversity hotspot that supports community livelihoods in the region.

Under EMCA Cap 387 the proposed electric fencing project falls under the second schedule that specifies projects that require an environmental impact assessment before commencement. The Act provides for public consultation and public participation in the ESIA process. A team of experts comprising of government officials have been constituted to undertake the exercise. In compliance with EMCA and the Constitution of Kenya, 2010 ESIA experts are gathering views from the public on the proposed project.

You are kindly invited to express your views and opinion on the proposed fence project.

Name of the participant.....LOICE KWATENIBA..... Contact.....DT00349005

Location/Village.....Vihiga - Kitale.....

1. Age category

Below 18 years 20-30 30-40 40-50 Above 50

2. Formal Education level

None Primary Secondary Tertiary

3. How long have you settled here?

Less than 5 years 5-15 16-25 26-35 Above 35 years

4. Do you own land around Kakamega forest (Yes) (No)

5. What is the size of your land/ Family land

Below 1 acre 1- 2 acres 3- 5 acres Above 5 acres

6. What is the distance between your home and the forest Reserve boundary?

Below 1 KM 1- 2 Km 3- 5 KM Above 5 km

7. Does the land have a title deed Yes No

8. How often do you get into Kakamega forest?

Daily Weekly Monthly Yearly Not at all

9. Reasons for entering the forest?

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Firewood collection | <input type="checkbox"/> Construction materials | <input checked="" type="checkbox"/> Use Connecting route |
| <input checked="" type="checkbox"/> Grazing and fodder | <input type="checkbox"/> Charcoal burning | <input type="checkbox"/> Recreation/tourism |
| <input type="checkbox"/> Honey collection | <input checked="" type="checkbox"/> Medicinal plants | <input type="checkbox"/> Mining |
| <input type="checkbox"/> Logging for timber | <input type="checkbox"/> Seeds and wildlings | <input type="checkbox"/> Farming |
| <input type="checkbox"/> Fencing poles | <input type="checkbox"/> Fruits, insects | <input type="checkbox"/> Cultural(prayers, circumcision) & others |
| <input type="checkbox"/> Carvings & withies | vegetables and roots | |
| | <input type="checkbox"/> Domestic Water | |



No	Questions	Response		Comments
		Yes	No	
10	Have you heard about the proposed fencing project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11	Will the fence interfere with your daily economic activity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12	Are you in any way involved in the forest management?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13	Will you benefit from the project in any way?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14	Do you welcome the project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
15	Do you require access gate to the forest once it is fenced?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
16	Are there wild animals from the forest that raid your farm?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

17. Rank the positive contribution of fencing the forest in a scale of 1-5 below
 Very low (1), low(2), medium (3), high(4), very high (5)

Protect Kakamega water Catchment	4
Reduced Human wildlife conflict	4
Local employment	2
Mitigating Climate Change	5
Increase Plants diversity	5
Increase Animal diversity	5
Enhanced forest management and coordination amongst stakeholders	4
Support community livelihood	5

18. What do you like about the fencing project?

The forest will be protected to the maximum

19. What don't you like about the fence project?

There will be no destruction

20. Any other comment on the project?

I support the fencing project because it will help in resistance of the few who destruct the forest

Signature  Date 11-9-2019
 ORIO MUNO ! ASANTE ! THANK YOU!

Annex3: List of Workshop participants

pg 2

ATTENDANCE LIST

DATE: 16/09/2019

PURPOSE: ENVIRONMENTAL IMPACT ASSESSMENT FOR PROPOSED FENCING OF KAKAMEGA FOREST

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11				
12				
13				
14				

LIST OF PARTICIPANTS

PURPOSE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR PROPOSED FENCING OF KAKAMEGA FOREST

Held on 17th September 2019 at Bishop N. Stam Pastoral centre Kakamega

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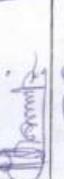
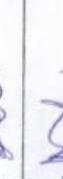
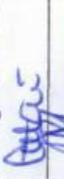
PURPOSE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR PROPOSED FENCING OF KAKAMEGA FOREST

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PURPOSE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR PROPOSED FENCING OF KAKAMEGA FOREST

Held on 19th September 2019 at Mago Guest House Vihiga

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PURPOSE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR PROPOSED FENCING OF KAKAMEGA FOREST

Held on 19th September 2019 at Mago Guest House Vihiga

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69	PURITY Adisa	Kubiri	0727978922	---	
70	Wamin Najjola	K.W.S	0723627590	---	
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Annex 4: Firm of experts' practicing licence

FORM 7

(r.15(2))



**NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT**

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/9873

Application Reference No: NEMA/EIA/EL/13518

M/S **Kenya Wildlife Service**
(individual or firm) of address

P.O. Box 40241-00100 Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts**
registration number **0179**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **2/28/2019**

Expiry Date: **12/31/2019**

Signature.....

(Seal)
Director General
The National Environment Management
Authority



Annex 5 ESIA team leader Practicing License

FORM 7 (r.15(2))



nema
mazingira yetu | ahali yetu | wajibu wetu

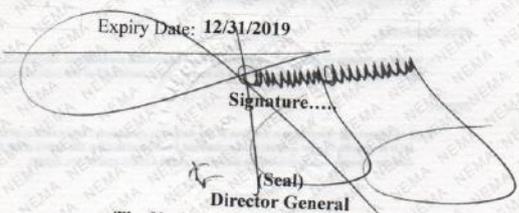
NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/9937
Application Reference No: NEMA/EIA/EL/13599

M/S **Peter Njiri Mwangi**
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in accordance with the provision of the Environmental Management and Coordination Act Cap
387.

Issued Date: **2/28/2019** Expiry Date: **12/31/2019**



Signature.....
(Seal)
Director General
The National Environment Management Authority

P.T.O.



ISO 9001: 2008 Certified