

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)
Disturbance and habitat loss/degradation – Near Threatened Denham's Bustard (<i>Neotis denhami</i>)	Adverse	Low	Minor	Minor adverse
Disturbance and habitat loss/degradation – Endangered Basra reed-warble (<i>Acrocephalus griseldis</i>)	Adverse)	Medium	Negligible	Insignificant
Disturbance and habitat loss/degradation – Other bird species	Adverse	Low	Low	Minor adverse
Disturbance and habitat loss/degradation – Herpetofauna	Adverse	Negligible	Low	Negligible
Disturbance and habitat loss/degradation – Insects	Adverse	Negligible	Low	Negligible
Decommissioning				
Impact on protected areas – Mwea National Reserve	Adverse	High	Negligible	Insignificant
Disturbance and habitat loss/degradation – Woodland/grassland habitat	Adverse	Low	Minor	Minor adverse
Disturbance and habitat loss/degradation – Mammals	Adverse	Low	Minor	Minor beneficial
Disturbance and habitat loss/degradation – Birds	Adverse	Low	Minor	Minor beneficial
Disturbance and habitat loss/degradation – Herpetofauna	Adverse	Negligible	Minor	Insignificant
Disturbance and habitat loss/degradation – Insects	Adverse	Negligible	Minor	Insignificant
Water resources and water quality				
Construction				
Surface water runoff decrease in water quality (pollution)	Adverse	Low	Moderate	Minor adverse
Surface water runoff leading to soil erosion	Adverse	Low	High	Moderate adverse
Foul water discharges	Adverse	Low	Negligible	Insignificant
Reduced water availability due to abstraction from the Kamburu Dam	Adverse	Low	Moderate	Minor adverse
Operation				
Changes to natural drainage pathways	Adverse	Low	Moderate	Minor adverse
Increased water abstraction for operational domestic water use and panel cleaning and irrigation leading to conflict with other water users.	Adverse	Medium	Moderate	Moderate adverse
Contaminated surface water runoff (during panel	Adverse	Low	Minor	Minor adverse

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)
cleaning, abnormal events)				
Uncontrolled foul water discharges	Adverse	Low	Negligible	Insignificant
Decommissioning				
Surface water runoff decrease in water quality (pollution)	Adverse	Low	Minor	Minor adverse
Foul water discharges	Adverse	Low	Negligible	Insignificant
Air quality				
Construction				
Dust from site establishment works	Adverse	Medium	Moderate	Moderate adverse
Dust from other construction works (installation / commissioning)	Adverse	Medium	Minor	Minor adverse
Dust from traffic movements	Adverse	Medium	Moderate	Moderate adverse
Fugitive gas emissions	Adverse	Medium	Negligible	Insignificant
Decommissioning				
Dust from site decommissioning works	Adverse	Medium	Moderate	Moderate adverse
Dust from other decommissioning works	Adverse	Medium	Minor	Minor adverse
Dust from traffic movements	Adverse	Medium	Moderate	Moderate adverse
Fugitive gas emissions	Adverse	Medium	Negligible	Insignificant
Glint and glare				
Operation				
Glint for road users travelling north / south on B7	Adverse	Low	Minor	Minor adverse
Glare for receptors to the north east and west of the site	Adverse	Medium	Moderate	Moderate adverse
Glare for receptors to the east / south of the site	Adverse	Medium	Minor	Minor adverse
Glint and glare aviation infrastructure	Adverse	Low	Minor	Minor adverse
Landscape and visual impacts				
Construction				
Impact to landscape character	Adverse	Medium	Low	Minor adverse
Impact to visual landscape	Adverse	Medium	Low	Minor adverse
Operation				
Impact to landscape character	Adverse	Medium	Moderate	Moderate adverse

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)
Impact to visual landscape	Adverse	Medium	Moderate	Moderate adverse
Traffic and transportation				
Construction				
Construction impact upon road users and traffic flow (local / direct AOI)	Adverse	Medium	Moderate	Moderate adverse
Construction traffic impact to local community (indirect AOI)	Adverse	Medium	Minor	Minor adverse
Construction traffic impact to local road infrastructure (wear and tear) (indirect AOI)	Adverse	Medium	Moderate	Moderate adverse
Construction traffic impact to local road infrastructure (wear and tear) (direct AOI)	Adverse	Low	Minor	Minor adverse
Waste and materials				
Construction				
Material use contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse
Waste generation contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse
Operation				
Waste generation contaminate receiving environment	Adverse	Low	Minor	Minor adverse
Decommissioning				
Waste generation contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse
End of life disposal of PV panels	Adverse	Moderate	Medium	Moderate adverse
Noise				
Construction				
General site works	Adverse	Medium	Moderate to high	Major adverse
Traffic noise	Adverse	Medium	Moderate	Moderate adverse
Decommissioning				
General site works	Adverse	Minor	Moderate to high	Minor adverse
Traffic noise	Adverse	Minor	Moderate	Minor adverse
Greenhouse gas (GHG) emissions				

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)
Avoided CO ₂ emissions	Beneficial	High	Moderate	Major beneficial
GHG emissions (per year)	Adverse	High	Low	Minor adverse
Change in microclimate	Adverse	Low	Minor	Minor adverse

8 Mitigation, enhancement and monitoring measures

8.1 Introduction

This Chapter sets out proposed environmental, health and safety (EHS) and social mitigation, enhancement and monitoring measures for the Project based upon positive and adverse impacts identified in Chapter 7 to reduce significant impacts (moderate or above) to acceptable levels in-line with good international industry practice (GIIP). Mitigation measures control, reduce, eliminate, or offset adverse impacts and enhance potential beneficial impacts of a development. The mitigation, enhancement and monitoring measures discussed in this Chapter cover impacts to the following areas:

- Socio-economics (including cultural heritage)
- Biodiversity
- Water resources
- Landscape and visual (including glint and glare)
- Waste and materials
- Construction noise
- Construction traffic and transportation
- Construction air quality
- Construction greenhouse gases

Implementation of the measures outlined in this section will be via a Project environmental and social management plan (Project ESMP), implemented through the existing KenGen environmental and social management system (ESMS). The Project ESMP is a commitment by the Project to place relevant requirements on KenGen or the relevant construction contractor(s) through the procurement and delivery process. All contractors (including subcontractors) will be required to demonstrate that they have the procedures in place for implementing environmental and social management measures in line with the requirements of the Project ESMP (Contractor ESMP). Furthermore, KenGen or their representatives will undertake regular audits of works against the requirements of the Project ESMP commensurate with the nature of the risk.

The Project ESMP will consider management of significant and insignificant impacts as defined in this Chapter with a focus on mitigation measures to address significant impacts. A framework for management of non-significant impacts to enable the Project to be constructed and operate in a way that is aligned with GIIP is set out in detail in the Project ESMP. The Project ESMP sets out the following information:

- Legal and administrative framework
- Overview of the KenGen ESMS and Project implementation framework
- Key roles and responsibilities
- Mitigation and monitoring requirements and plans:
 - E&S considerations for design, temporary permits and procurement
 - General site environmental and social management

- Air quality management
- Surface water management and water quality
- Noise management
- Landscape and visual impact management
- Traffic and transport management
- Land contamination, materials and waste management
- Social management
- Ecological management plan (EcMP) including habitat removal and restoration plan and a reforestation plan
- Archaeology and cultural heritage
- Occupational health and safety (OHS)
- Minimum requirements for supporting plans (to be elaborated by construction contractor unless otherwise noted):
 - Livelihood restoration plan (KenGen)
 - Emergency response plan / spill control plan
 - Local / content policy
 - Labour policy statement
 - Labour code of conduct including labour grievance mechanism framework
 - Site safety and security management plan
 - Chance finds procedure
 - Project social responsibility plan (investment plan for operation phase)
 - Storm water management plan
- Training and awareness
- Emergency procedures and response
- Record keeping
- Performance monitoring, reporting and auditing

The Project ESMP will consider existing and planned provisions for KenGen to implement corporate management systems, environmental management system (EMS), health and safety management system (HSMS) and human resource policy. These management systems will be applied in line with international standard guidelines (e.g. ISO 14001:2015 for environmental management). The ESMP provides the framework to implement the mitigation measures identified in this section either by KenGen or their contractors. Refer to Volume IV for detailed information including financial provisions for implementation.

8.2 Socio-economic

8.2.1 Summary of mitigation

The ESIA identified potential for significant impacts in the following areas:

- Community relations
- Below standard labour rights and working conditions
- Influx of workers
- Lack of opportunities for unskilled workforce
- Loss of livelihoods (grazing, bee keeping, firewood)

- Severance / restricted access to reservoir

While it is not predicted that there will be accidents, transmission of disease, social conflict, changes in gender relations, and heritage findings, the Project does raise potential for their occurrence and hence these risks as well as the predicted impacts require management measures. The main mitigation measures are summarised briefly in Table 70 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 70: Summary of significant impacts and proposed mitigation or enhancement - socioeconomic

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<ul style="list-style-type: none"> ● Establish grievance mechanisms for Project Performance as well as labour issues clearly and include as part of Contractors' contracts ● Employment of the PSC to coordinate with local stakeholders and ensure workforce compliance with regulated norms regarding HIV/AIDS awareness and measures, grievances ● Stakeholder engagement plan (SEP) to ensure relevant information is shared with affected communities in a standard approach
Mitigation of significant impacts	<ul style="list-style-type: none"> ● Workers educational awareness and skills training plan ● Livelihood resettlement framework (LRF) with community grievance mechanism ● Define and publicize recruitment criteria and procedures (contracts) ● Use village employment committees ● Raise awareness locally and regionally concerning exact opportunities and limitations of employment on Project ● Ensure community liaison person elected and grievance mechanisms operational ● Collaborate with local authorities in planning recruitment and community liaison, and in responding to local complaint cases triggered by the Project ● Toolbox talks about labour rights as part of Contractor requirements ● Certification of drivers, equipment and traffic management plan as contractual requirements for selection of Contractors ● Contractual obligation to employ women as part of local hires, include them in on-the-job and vocational training
Mitigation of non-significant impacts	<ul style="list-style-type: none"> ● Follow legal requirements related to chance finds ● Toolbox talks for safeguarding personnel and property ● Training of security staff in human rights, use of forces, security plan, emergency preparedness and incident reporting ● Ongoing consultation and information disclosure (through implementation of the SEP) ● Annual sustainability reporting ● Theft deterrent activities
Compensation and enhancement measures	<p>Implement the following Project specific enhancement Projects:</p> <ul style="list-style-type: none"> ● Improved access to electricity ● One community water storage Project in Machang'a (as per proposal provided by the community) ● KenGen will seek to partner with local government institutions to support a technical empowerment program to enhance technical education for local youth on low - medium skilled activities. This would cover skills relevant to the project as determined by the Training Needs Analysis (TNA) and likely to include such skills as electrical work, brick laying, foundations works, welding ● Local hiring / business database (individual and business) (at least 2 months prior to start ● Solar street lighting (Machang'a main street) to support enhanced operating hours for

Mitigation type	Mitigation of significant impacts
	<p>small businesses in the area</p> <ul style="list-style-type: none"> • Livelihoods training program (grazing / bee keeping / firewood collection) for local community • Visitor center including solar power exhibit and historical exhibit referring to land use change in the region to date to be housed in the existing Hydro Plaza Complex. • Improve Machang`a Health Centre to provide better health, emergency and maternity services • Buffer zone replanting (reforestation Project at 10:1 replanting ratio in line with GIIP)
Monitoring	<p>Internal and external monitoring will need to ensure that the Project commitments to worker's rights are implemented, in particular with regards to:</p> <ul style="list-style-type: none"> • Use of child labour • Payment of minimum wages and overtime • Not taking any action to prevent employees from exercising their right of association and their right to organize and bargain collectively • Ensuring no workers are charged fees to gain employment on the Project • Implementation of plans, procedures and training for occupational health and safety • Non-discrimination and equal opportunity • Use of the labour grievance mechanism • The existence of human resource policies, job descriptions, written contracts • Provision of information to labour force regarding rights and working conditions • Employee training activities <p>OHS adherence to the plan and procedures to be taken seriously and monitored frequently. A warning system for violations and non-compliance must be established and implemented for the monitoring system to be effective. The Project should aim to maintain the number of accidents among Project workers at a rate of zero, especially accidents that could result in lost work time, different levels of disability, or even fatalities.</p> <p>Regular monitoring of the Project performance grievance mechanism and stakeholder engagement needs to take place. The impact of the enhancement activities, including community investment program, will also be required.</p> <p>During construction, there needs to be an internal daily monitoring by Contractor supervisors of OHS areas to ensure safe and healthy conditions. KenGen should hire a dedicated EHS specialist to oversee the implementation of EHS matters at the site to include:</p> <ul style="list-style-type: none"> • An OHS assessment and audit based on OHS management plans in accordance with Kenyan law and international best practice • A labour assessment and audit against IFC PS2 and labour accommodation plans

8.2.2 Stakeholder engagement plan

A stakeholder engagement plan (SEP) is presented in Volume V in this ESIA. The objective of the SEP is to continue to manage stakeholder and community relations, expectations, and grievances through participation, consultation, and disclosure mechanisms. The guiding principles of the SEP are that throughout the lifetime of the Project, stakeholder engagement will be well planned and based on principles of respectful and meaningful dialogue. As a management tool using a technically and culturally appropriate approach to information disclosure and consultation, the SEP will coordinate, guide and maximize the full value of the engagement processes for the Project.

The SEP includes a community grievance mechanism with reporting and resolution procedures. The roles and responsibilities of the Project community liaison officer (CLO) include logging and tracking the resolution of grievances are also defined.

8.2.3 Worker Educational awareness and training plan

To assist in minimizing the environmental impact of Project activities, a worker education awareness and training plan will be developed. The plan will focus on training staff to have:

- Awareness to be sensitive to general environmental impacts of the Project as well as the environmental impact of specific tasks
- Knowledge to guide implementation of environmental management procedures
- Skills to use institutional instruments and technologies to contribute to proper environmental management in the Project
- Identification and reporting of chance finds

As appropriate, the plan will also target inhabitants of the areas near the Project area so they have more awareness of environmental issues related to the community.

8.2.4 Labour and recruitment

KenGen has provision for equitable job creation through their local hiring policy. KenGen implement a 2:2:1 local hiring policy reflecting equitable recruitment between Embu County, Machakos County and other counties for unskilled and semi-skilled labour needs. This hiring ratio will be applicable to this Project and set out in the ESMP and EPC contract. In addition, KenGen will advertise that women are encouraged to apply for jobs.

8.2.5 Livelihood restoration plan

Economic displacement refers to Project impacts due to loss of access to land given that Machang'a community members informally use portions of the Project site as a short cut to the Kamburu Reservoir for fishing and for rural activities such as grazing, collecting medicinal plants, bee-keeping and fetching firewood. This loss of access to the land could lead to loss of income sources and means of livelihood and affect food security although access to the reservoir will not be severed.

A livelihood restoration plan (LRP) will be developed using IFC PS5 and best practice guidance and as outlined on the Volume IV ESMP. The LRP will establish resettlement objectives and principles, compensation or mitigation of impacts, organisational arrangements and funding mechanisms. Eligibility and entitlements will be described in the LRP so that there is a standard approach across the Project for addressing the impacts. It will make specific reference to national laws and regulations and the requirements of the IFC PS5 for guidance.

8.2.6 Archaeology and cultural heritage

Considering that there is a low likelihood of archaeological artefacts to be in the Project footprint and following consultation with National Museums of Kenya (NMK), the following actions are recommended:

- Preliminary survey by NMK of the Project area prior to any site clearance or construction works
- Further consultation with NMK
- Chance finds procedure to stop works in the event that any artefacts are discovered and to require investigation by an archaeologist in case of such findings
- Through the SEP, keep local community informed of activities

A "chance finds procedure" will be developed to manage unexpected and unidentified finds in the ESMP. 'Chance finds' are defined as physical cultural resources encountered unexpectedly

during Project implementation. 'Physical cultural resources' (PCR) are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, municipal, department or international level. The requirements for the chance finds procedure are elaborated as part of the ESMP and follow the recommendations of the IFC PS8 for guidance and also make reference to the World Bank's *Physical Cultural Resources Policy Guidebook*. The procedure includes:

- Definition of cultural resources/archaeological features
- Ownership of the artefact
- Recognition
- Procedure upon discovery
 - Conditions and requirements for work stoppage
 - Fencing and protection of the find
 - Internal reporting
 - Expert analysis
 - Instructions for moveable finds
- Procedure for reporting
 - Following internal reporting, the first notification will be to the NMK
 - A survey report will document the findings of the survey undertaken prior to start of site clearance and construction and will be submitted to the relevant authorities.

8.3 Health safety and security risks (worker and community)

8.3.1 Summary of mitigation

The ESIA noted the following potential significant health and safety risks to workers or the community from Project related activities:

- Increases in accidents and injuries during Project activities
- Impact from elephant migration towards Project site

Table 71 presents mitigation measures for addressing health, safety, and security risks. The measures are discussed in more detail in the following subsections.

Table 71: Summary of significant impacts and proposed mitigation or enhancement - health, safety and security

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design or contracts or management plans)	<ul style="list-style-type: none"> ● Occupational health and safety (OHS) plan ● Site security plan ● Contingency plan for emergency preparedness and response ● Elephant fence along the southern boundary of the site ● Require contractors to produce and implement H&S Plans under the supervision of a qualified manager for approval by KenGen ● Require contractors to present accommodation strategies to safeguard workers' health and safety during tender process and to produce and implement Workers' Accommodation Plans that include a manager responsible for its implementation ● Implementation of best practice engineering controls in design ● Establish Workers' Code of Conduct

Mitigation type	Mitigation of significant impacts
	<ul style="list-style-type: none"> Regular toolbox talks on worker's code of conduct and OHS plans and procedures. Project focus on OHS's with appropriate plan, procedures and training Production and drills on emergency preparedness and response plan HIV/AIDs briefings and awareness activities Publishing of safety brochure and land use near OHLs to provide advisory information regarding H&S around the OHL and to dissuade encroachment back into the RoW on a permanent basis Signage on equipment regarding electrocution hazards
Mitigation of effects	<p>The following mitigation measures will be included in the ESMP or related plans:</p> <ul style="list-style-type: none"> Provide induction and training on emergency evacuation procedures in the event of a natural hazard emergency (aligned with municipality emergency evacuation and response plans) Specific requirements for grounding and lightning rods to be included in technical specifications and in the routine monitoring of contractors' equipment and installations Hold tool box talks on hygiene and sanitation at least every six months Ensure good housekeeping on site to prevent pooling of water and nesting of animals Undertake control and quality assurance of drinking water Identify and implement pest and vector control activities Organise and implement information dissemination and sensitisation campaigns on lifestyle factors (smoking, alcohol abuse, nutrition, obesity, etc.⁵²) Hold awareness workshops with photos of venomous snakes and other poisonous animals that could be encountered in the Project area, directed to workers during site clearance works as well as operation (this activity should also seek prevention of unjustified killing of snakes and other poisonous animals) Keep a venom pump and doses of antivenom and rabies serum in health facilities on site and in AOI Install telecommunication systems with emergency personnel in place prior to civil works commencing and emergency communication protocol Use community grievance mechanism (in the SEP) for addressing any concerns related to security personnel Elephant Fence
Monitoring	<p>Monitoring of OHS and community health conditions will be an important control and management measure to prevent accidents and illnesses. OHS adherence to the plan and procedures will need to be taken seriously and monitored frequently. Internal and external monitoring will need to ensure that the Project commitments to address health and safety issues are realized.</p> <p>The Contractors will be obligated to hire staff responsible for supervising OHS and worker accommodation on a daily basis. Monitoring results will be reported in monthly health and safety reports.</p> <p>KenGen will need to ensure independent monitoring of health and safety issues. Key performance indicators will need to be established and implemented for the monitoring system to be effective. The Project will aim to achieve an incident rate of zero.</p>

8.3.2 KenGen CSR program

KenGen has a long history of Project work in the region due to its history of power generation from the hydropower cascade scheme. Mechanisms and protocols already exist for equitable benefit sharing through the existing CSR program.

⁵² The increase in wealth among workers has been known to affect other vice habits, for instance alcohol consumption and domestic abuse. If such effects or others are noticed they should be addressed within this mitigation measure.

8.4 Biodiversity

8.4.1 Summary of mitigation

The ESIA identified potential for significant impacts in the following areas:

- Terrestrial habitat and flora loss and degradation (permanent and temporary)
- Accidental introduction and dispersal of invasive species
- Disturbance to terrestrial animal species (e.g., noise, artificial light)
- Injury or death of terrestrial animals
- Habitat fragmentation
- Increase in road kills and injuries to wildlife

The main mitigation measures are summarized briefly in Table 72 and key mitigation measures elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 72: Summary of significant impacts and proposed mitigation or enhancement - biodiversity

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<p>Ecological baseline data collection (wet season) using the same methodologies as those undertaken in 2017</p> <p>Ecological management plan (EcMP) including, at a minimum:</p> <ul style="list-style-type: none"> • No net loss in natural habitats specifically the medicinal trees • Means for the community to clear the site and retain access to the firewood post clearance (part of the LRF) • Plan for the translocation and restoration of bee hives prior to clearance (part of the LRF) • Details of the environmental staff to be hired by the contractor and their responsibilities with regard to the implementation of mitigation measures and the biodiversity monitoring during construction • Details of the local NGO or consultancy, and the specialists that will undertake some of the activities that require specialist and local knowledge • Measures to prevent the introduction and spread of non-native invasive species • Requirements for site removal and habitat restoration (buffer zone) (see next section Habitat Removal and Restoration) • Traffic management • Measures, such as water sprays/misting, for the reduction of dust during the working periods • Awareness programs in villages near the Project to promote understanding of conservation of biodiversity and livelihoods • Worker awareness campaigns to protect the biodiversity in the Project area. This will include education about illegal tree logging and hunting/poaching through staff inductions, toolbox talks, office posters, etc. • Artificial lighting used on construction sites and other Project facilities at night will be shaded and directed downwards to avoid light spillage and disturbance to nocturnal birds, bats and other wildlife • Fences to be maintained around the Project to keep wildlife out. Protect excavations (drilling sumps and open water reservoirs) and monitor for any trapped wildlife. Install structures to provide escape routes for animals (for example wooden tables with rough surface or similar)
Mitigation of significant impacts	<p>Implementation of the Habitat Removal and Restoration Plan (HRRP) including:</p> <ul style="list-style-type: none"> • Ecologist survey of the site prior to commencement of site establishment activities to identify biodiversity sensitive areas and inform the implementation of targeted

Mitigation type	Mitigation of significant impacts
	<p>mitigation measures</p> <ul style="list-style-type: none"> Plan clearance of trees and other vegetation to avoid the peak period for breeding birds Restriction of all off-road access to pre-defined routes that limit the extent of off-road activity Implementation of plans to minimise all traffic activities All forest areas to be affected by the Project will be clearly delineated/measured and all trees to be removed will be inventoried (species, numbers, diameter, approximate height, etc.)
Mitigation of non-significant impacts	As above
Compensation and enhancement measures	Site restoration activities set out in the HRRP including the replanting of temporarily affected areas with dry deciduous tropical forest that replicates the structure and composition of natural forests in the Nature Reserve
Monitoring	<p>Monitoring and maintenance of restored areas for 10 years including measurements of:</p> <ul style="list-style-type: none"> Habitat condition Health and morality of planted trees <p>Monitoring to start six months after completion of habitat restoration or creation at each site</p> <p>Maintenance to be performed biannually for the first five years and annually from years six to ten (further details are provided in the ESMP in Volume IV)</p>

8.4.2 Ecological baseline survey works

To complement the baseline surveys undertaken in the dry season in October 2017, additional surveys will be undertaken in 2018 during the wet season (between January and March 2018). These additional surveys will cover the same species groups and sites and will use the same methodologies as those deployed in the 2017 surveys.

In addition, a full inventory of medicinal tree species will be performed and trees marked for future mitigation planning.

8.4.3 Ecological management plan

A framework for an Ecological Management Plan (EcMP) to be prepared and implemented by the contractor is included in the ESMP in Volume IV. The aim of the EcMP will be to ensure the biodiversity of the Project area is protected.

KenGen will oversee contractor compliance with this plan. The EcMP will include ecological and environmental management and monitoring measures before vegetation clearance. The EcMP will be developed in line with the ESMP (see Volume IV).

8.4.4 Habitat removal and restoration

A Habitat Removal and Restoration (HRRP) will be produced by a specialist on behalf of KenGen or the contractors before the start of site establishment. The HRRP will set out the minimum requirements in relation to the clearance and restoration of natural habitats, and the removal, storage and reinstatement of soil. Further detail is provided in the ESMP.

8.5 Water resource management

8.5.1 Summary of mitigation

The ESIA identified potential significant impacts in the following areas:

- Surface water run off (normal)
- Extreme run off during high rain events

IFC PS3 on Resource Efficiency and Pollution Prevention and Management (2016) will be considered with regard to mitigation measures to offset water consumption. This document states that:

“[...] Borrower will adopt measures, to the extent technically and financially feasible, that avoid or minimise water usage so that the Project’s water use does not have significant adverse impacts on communities, other users and the environment.”

The main mitigation measures are summarized briefly in Table 73 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 73: Summary of significant impacts and proposed mitigation or enhancement - biodiversity

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<ul style="list-style-type: none"> • Ensure no adverse impact on other water users by Project activities by maintaining water abstraction from Kamburu Dam within current permitted allowance • Use water from other sources should additional water be required for activities such as concrete batching (construction) or panel cleaning (operation) • Install a rainwater capture system on the plant buildings to capture rainwater for use in vegetation irrigation and landscaping during the dry season (this will also have the secondary benefit of assisting to maintain vegetation cover during the dry season reducing dust and soil erosion impacts) • Design and specify low water consumption specifications in buildings for low water consumption (e.g. bathrooms) • Design of borrow pits and other engineering infrastructure to minimise alteration of drainage paths and generation of sediment load • Locate construction compounds away from sensitive water features • Adopt best practice to minimise risk of pollution during construction and operation • Storm water treatment system e.g. detention ponds or infiltration basins should be incorporated into the design
Mitigation of significant impacts	<p>Implement a surface water management plan when constructing within 50 m of a surface water body including river, pond, or ephemeral drainage system (minimum requirements for this are contained within ESMP) to include:</p> <ul style="list-style-type: none"> • Ensure all relevant permits are obtained • Use construction techniques that reduce soil compaction • Construction equipment should be limited to what is really needed • No chemicals, fuels, oils or concrete batching activities to occur near drains or run off drainage area
Mitigation of non-significant impacts	<p>Specify best practice construction and site management methods in contractor construction contract and the ESMP including:</p> <ul style="list-style-type: none"> • Adequate provision of cross drainage structures where building new roads to avoid altering drainage paths • Best practice control measures during earthworks to minimise increase in sediment load (full detail provided in the ESMP) • Slope breakers must be installed on slopes greater than 5% where the bases of the slope are less than 50 m from waterbodies, wetlands and road crossings • Site construction compounds away from sensitive water features to avoid pollution (waste or sediment) or erosion • Adopt best practice to minimise risk of pollution and accelerated erosion during construction and operation (detail provided in ESMP)

Mitigation type	Mitigation of significant impacts
	<ul style="list-style-type: none"> • All effluents from construction activities proposed to be discharged back to surface water courses must be done with prior license from the regional water authority and a monitoring strategy employed for testing discharges against relevant water quality standards prior to discharge. • Specific mitigation for dry season to avoid despoiling dried out clay pans • Herbicide use to be managed as part of an Integrated Pest Management Strategy (IPM) and a documented Pest Management Plan (PMP) only
Compensation and enhancement measures	One Community water storage Project to be discussed with the community
Monitoring	<ul style="list-style-type: none"> • Periodic sampling of treated sanitary sewage discharges to confirm compliance with values set out in IFC EHS General Guidelines Table 1.3.1 • Perform regular measurement and recording of principal water flows within the facility • Measure water use of high consumption activities, such as panel cleaning • Compare water flows with performance targets to identify leaks and areas where action may be needed to reduce water use

It is proposed to erect a water kiosk at the entrance of the site to bring water closer to the community of Machang'a an example is presented in Figure 28.

Figure 28: Example of water point



Source: KenGen

8.6 Air quality

8.6.1 Summary of mitigation

The ESIA identified the following potential significant impacts on air quality:

- Oxides of nitrogen (NO_x) emissions associated with on-site construction plant and vehicles (combustion of fuel)
- NO_x emissions associated with construction traffic on the local road network (combustion of fuel)
- On-site dust emissions arising from construction activities. Dust can be mechanically transported (either by wind or re-suspension by vehicles). It can also arise from wind erosion on material stock piles and earth moving

Management of construction activities relating to potential air quality impacts will be included in the Project framework ESMP. Techniques based on the IFC General EHS Guidelines for consideration during construction and decommissioning of the PV Project roads are summarized below.

The main mitigation measures are summarised briefly in Table 74 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 74: Summary of significant impacts and proposed mitigation or enhancement - air quality and emissions

Type of Mitigation	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	Re-vegetation under the solar panels (to minimise dust connected with soil erosion)
Mitigation of significant impacts	Good practice management including:
Mitigation of non-significant impacts	<ul style="list-style-type: none"> • Minimise dust from material handling sources and from open area sources, including storage piles, by using control measures such as covering, seeding or fencing stockpiles to prevent wind whipping • Use dust suppression techniques where applicable • Minimise dust from vehicle movements by ensuring that road surfaces used for the Project are tightly compacted to ensure minimal surface break-up • Avoid open burning of solid waste • Carry out periodic visual inspection at sites near to receptors • Carry out tool box talks to all construction workers in relation to dust raising activities • Minimise fugitive emission from vehicles by requiring engines to be turned off when not in use <p>Further elaboration is provided in Volume IV – ESMP.</p>
Compensation and enhancement measures	As there are no significant effects predicted within the assessment no additional compensation or enhancement measures relating to air quality are proposed as part of this Project
Monitoring	<p>No air quality monitoring is proposed as part of this assessment. Auditing of work-sites against the requirements of the ESMP for minimizing dust raising activities will be undertaken. This will include:</p> <ul style="list-style-type: none"> • Daily site walk-arounds of substations • Periodic audit of OHL work-parties • Toolbox talks to all users regarding management of dust.

8.7 Glint and glare

The ESIA has identified potential intermittent impacts in the following areas:

- Glare impact for stationary receptors to the north and west of the site within 1 km
- Glint impact for road users on Route B7 within 1 km of the site

Nevertheless, the ESIA recommends the following actions to address potential impacts:

- Signage on road to warn road users of the potential risk from glint
- Communication of the community grievance mechanism so that receptors that may experience issues can record the impact with KenGen
- Commitment by KenGen to investigate potential complaints and to evaluate mitigation options and where confirmed implement an adaptive mitigation strategy that may include options such as tree planting at receptor location and minor housing modification.

8.8 Landscape and visual impact

8.8.1 Summary of mitigation

The ESIA identified the potential for significant impacts in the following areas:

- Removal of vegetation, soil stripping, temporary stockpiling of excavated materials and other earthworks
- Visual impact from the long-term installation of the solar PV cells

The main mitigation measures are summarized briefly in Table 75 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 75: Summary of significant impacts and proposed mitigation or enhancement - landscape and visual impact

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<p>These integral design mitigation measures include or will include as detailed design progresses:</p> <ul style="list-style-type: none"> • Design considerations for appropriate materials, form and finish of permanent buildings • Temporary work areas or borrow pits will be fully re-instated and not left to turn into small water reservoirs areas unless they are close to human settlements so they can be used for water supply where the community is prepared to manage their use. • Design of borrow pits and other engineering infrastructure will be undertaken to minimise loss of habitat specifically the watering pond
Mitigation of significant impacts	<ul style="list-style-type: none"> • Lighting associated with the construction phase of the proposed development will be carefully designed to minimise the impact of light pollution at night
Mitigation of non-significant impacts	<ul style="list-style-type: none"> • Construction compounds will be located away from sensitive landscape areas • Removal of buffer zone trees will be avoided as far as reasonably practicable • Any planting lost due to the construction of the proposed development will be replaced with new planting of a similar species such that habitat is restored to its pre-construction condition • Use excess earth to create local screening • Where local population experience a grievance of any kind (including one of visual impact) grievances will be assessed and addressed. • The construction traffic should avoid stopping in communities en-route to the

Mitigation type	Mitigation of significant impacts
	site
Compensation and enhancement	Due to the scale and nature of the Project, compensation and enhancement measures are not considered necessary
Monitoring	None noted. The grievance mechanism will be circulated and residents informed that they may use this for any issues related to visual impact or glint and glare.

8.9 Traffic and transportation

8.9.1 Summary of mitigation

The ESIA identified potential significant impacts in the following areas:

- Increased traffic flow on road network and congestion for local road users (direct AOI)
- Deterioration on road infrastructure and transport infrastructure condition
- Impact on local community in wider area of influence and community health and safety

The qualitative assessment undertaken for the Project has indicated that, generally, the significance of effects due to traffic and transportation will not be significant, except in relation to traffic movements that may interact with local community traffic movements. The main, vulnerable road users are the village of Machang'a.

A range of measures are proposed to mitigate the adverse impacts of traffic movements associated with Project upon the local highway network and the local community are summarized in Table 76 and key measures are elaborated in the section below.

Table 76: Summary of significant impacts and proposed mitigation or enhancement - traffic and transportation

Type of Mitigation	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<ul style="list-style-type: none"> • Upgrade earthen road along the northern boundary of the site to allow community access to the reservoir (in collaboration with KeRRA) • Complete route surveys and repair identified infrastructure damage attributable to Project • Minimise construction works near settlements
Mitigation of significant impacts	<ul style="list-style-type: none"> • Develop Project traffic management plan (TMP) to address GIIP traffic management measures
Mitigation of non-significant impacts	<ul style="list-style-type: none"> • Appropriate signage of site access routes, construction areas and where vehicles may be turning • Communicate and maintain close liaison with local community representatives include circulation of information about ongoing activities and in particular those which could have potential to cause disturbance • Provide relevant notice to KeRRA / KeHAA for any abnormal delivery loads (not expected) • Provide district government, police and other relevant authorities written notice of any abnormal load deliveries • Adequate on-site parking facilities or nearby park and shuttle will be provided to accommodate site operatives' and visitors' vehicles • A wheel and chassis wash facility could be installed at a location(s) approved by the local authorities and operated throughout the construction period. • Where fuels are taken to site, this will be restricted to the minimum amount required for the plant and equipment on site • Where road improvement works involve unavoidable impacts to walls, verges, banks and drainage channels, these features would be either realigned as part of

Type of Mitigation	Mitigation of significant impacts
	<p>the design of the works (such as in the case of walls which need to be temporarily removed) or re-instated following the period of construction works</p> <ul style="list-style-type: none"> • Road improvement works would use materials sympathetic to the landscape of the area • Disturbance to areas beyond the boundary of the PV Project site (including sub-station) and designated access roads by construction plant, vehicles and personnel would be avoided • Using machinery in good condition and fit for purpose
Compensation and enhancement	<ul style="list-style-type: none"> • Upgrade the existing earthen road along the northern boundary of the site (one off)
Monitoring	<ul style="list-style-type: none"> • Periodic compliance audit against TMP during construction • Document all incidents and associated investigations

8.9.2 Traffic management plan

A traffic management plan (TMP) will be developed that incorporates mitigation measures to enhance the efficient transport of any materials to site, whilst minimizing congestion and disruption which might affect general traffic on Route B7 and the local population. The mechanisms in the SEP will be used to communicate information about Project timelines so that road users are aware of periods where there may be disruption to normal traffic flow.

KenGen's appointed contractors must agree temporary traffic management measures then adopt and monitor an appropriate way of working in consultation with the local County, police and roads agencies (KeRRA and KenHA)

This represents a commitment to satisfy roads and transport obligations and can be finalized as agreed between the contractor and the relevant stakeholders prior to commencement on-site.

Suggested mitigation measures and this draft framework TMP represent a starting point for further discussion. These will be developed in greater detail by KenGen and the construction contractor in partnership with the local municipality and other relevant authorities. Refinements can be made as access routes are confirmed and the timing and type of deliveries become known.

Mitigation measures to ensure traffic safety are summarized below:

- Adoption of best transport safety practices across all aspects of Project operations with the goal of preventing traffic accidents and minimizing injuries suffered by Project personnel and the public. Measures should include:
 - Emphasizing safety aspects among drivers
 - Improving driving skills and requiring licensing of drivers
 - Adopting limits for trip duration and arranging driver rosters to avoid overtiredness
 - Avoiding dangerous routes and times of day to reduce risk of accidents
- General Project traffic will not require the presence of an escort when travelling to and from site. Drivers should however be aware of route and contingency measures as pre-defined at induction stage. Drivers of HGVs are to be briefed in good road practice and will be instructed to pull over on narrow sections of road to allow built up of traffic to pass. This as with the abnormal load movements will be detailed in the driver induction and should be made clear to all relevant personnel prior to any vehicle movements and included as contract conditions when using sub-contractors.

- All general Project traffic, including concrete related deliveries, will coincide with site working hours. Normal load construction vehicles will be required to use a pre-defined route, which will need to be agreed for each construction section as works proceed along the transmission line alignment.
- Regular maintenance of vehicles and use of manufacturer approved parts to minimise potentially serious accidents caused by equipment malfunction or premature failure
- Where the Project may contribute to significant increase in traffic along existing roads, the following measures should be implemented:
 - Minimizing pedestrian interaction with construction vehicles
 - Coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents
 - Using locally sourced materials, whenever possible, to minimise transport distances
- Employ safe traffic control measures, including road signs and flag persons to warn of dangerous conditions
- Draw-up work schedules which are cognizant of times of greatest network strain and individual road capacities so as to reduce impact upon traffic flow. Breaks in the truck traffic of 20 minutes can be beneficial to community life. Timing and frequency of vehicles should therefore be managed to ensure wherever possible that vehicle movements are spaced adequately to minimise disruption
- Set up a procedure for communicating Project information to local communities via public notices, map designations, and radio as necessary. Notify communities of pending work scope, duration of tasks and location of activities in particular movement of abnormal loads
- Install appropriate signage to inform local communities and road users of site access routes, construction areas and where vehicles may be turning or pulling out slowly
- Ensure contractors put in place appropriate driver training programs. This should improve driving standards and help to reduce accidents involving contractor vehicles
- Prior to infrastructure upgrade works (road realignment, widening, strengthening, etc.) as required to permit safe delivery of components and materials to site
- Ensure heavy load vehicles follow prescribed heavy load routes capable of bearing larger loads
- Comply with weight limit restrictions on all roads
- Undertake road condition assessments prior to and following of 'core construction period' routes to assess damage to road infrastructure that can be attributed to Project construction. Repair damage as appropriate, i.e. 'make good'
- Ensure all machinery used during construction is in good condition and fit for purpose, so as to minimise the likelihood of pollutant leakage or spillage

The TMP will be finalized between KenGen, the civil works contractors and will be ready and implemented prior to activities commencing on-site.

8.10 Waste management

8.10.1 Summary of mitigation

The ESIA identified potential significant impacts in the following areas:

- Contamination of receiving environments (particularly soils) due to leakage and spillage of wastes associated with poor waste handling and storage arrangements
- Hazardous material management

- The use of landfill - where waste re-use or recovery is not feasible - which is a finite resource
- Disposal of spoil, excavation material and the various waste streams

The responsibility for waste management resides with County Governments. To address shortcomings in waste management nationally, NEMA published a National Solid Waste Management Strategy (NSWMS) in 2014. Under the NSWMS, County Governments are required, at a minimum, to do the following.⁵³

- Ensure waste collection areas are zoned and solid waste collected therein is collected in a regular and timely manner
- Ensure collected waste is transported in NEMA licensed vehicles to designated disposal sites
- Ensure a designated waste disposal site exists, that the site is secure, that income waste volumes are recorded, and that waste is spread, covered, and compacted at regular intervals

There are minimal waste provisions in the County and therefore the Project will need to be proactive in its waste management efforts (or requirements on contractors).

Many standard mitigation measures will be followed by KenGen and their construction sub-contractors during construction and mitigation as discussed above and these will be further elaborated in the ESMP. In general, every opportunity will be made to segregate and reuse the materials generated during construction. Any surplus soils will be suitable for reuse during the re-instatement process and for constructing roads and drainage systems. Non-hazardous materials that cannot be used on site will be appropriately managed either in a dedicated landfill or through use of existing facilities. Non-hazardous disposal options will be reviewed as part of the Construction Contractor's scope of works to determine the most appropriate method.

A site waste management plan will be required outlining specific waste management requirements.

The main mitigation measures are summarised briefly in Table 77 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 77: Summary of significant impacts and proposed mitigation or enhancement - materials and waste management

Mitigation type	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<ul style="list-style-type: none"> • KenGen to define operational waste management procedure (as part of its commitment to develop a management system cognizant with ISO14001). • Seek options for suppliers to remove their waste (packaging, etc.) during the procurement process (to be included in the procurement contracts). • Use locally sourced products (less waste) • Look for opportunities to re-use waste in the construction process (site levelling), building construction • Transport all hazardous waste for disposal in NEMA approved hazardous waste landfill (Nairobi). • Decommissioning (end of life and end of panel life) disposal should be addressed through the supplier in the first instance. KenGen will include these preferences in contracts.

⁵³ National Environment Management Authority (NEMA). 2014. The National Solid Waste Management Strategy.

Mitigation type	Mitigation of significant impacts
Mitigation of significant and non-significant impacts	<ul style="list-style-type: none"> • A Site Waste Management Plan (SWMP) will be developed and adopted by KenGen and its Construction Contractors in line with NEMA and GIIP. Minimum requirements for SWMP are outlined in the ESMP. As part of this the construction contractor will be required to develop the following: • No use of materials or chemicals that are not internationally acceptable as defined by this ESIA. • Review of hazardous waste disposal to options to identify the best available disposal method based on the final waste volumes to be generated to consider the following: • Removal of packaging material unless the EPC contractor / equipment supplier identifies an alternative disposal / re-use option within Kenya to be agreed with KenGen prior to implementation • Used local contractors where practicable • Segregation and monitoring of waste streams in view of minimizing, reusing and recycling waste • All remaining waste material is to be segregated into non-hazardous and hazardous wastes for consideration for re-use, recycling, or disposal • Identification of appropriate site(s) for excavation material disposal, away from sensitive surface or ground water features for non-hazardous waste only and only for material that cannot be managed back into the community • Any waste materials which cannot be effectively re-used back on or near to the site of production needs to be considered for re-use back into other sites, in particular for the temporary access routes that are proposed to be removed once the Project has been completed. The use of waste as fill material is encouraged for access roads, rather than using virgin fill materials • Appropriate storage of general waste and regular disposal • Long term hazardous waste storage areas at construction compounds for temporary safe storage of waste for removal for ultimate disposal • Staff training, for instance through toolbox talks, should be delivered in order to effectively implement the WMP and address the generation, storage and handling of both hazardous and non-hazardous waste • Seek opportunities for suppliers to remove waste / panels in accordance with NEMA requirements for recycling.
Compensation and enhancement measures	<ul style="list-style-type: none"> • Community Waste Management Plans – Liaison with the community officials to identify reuse and recycle options through village leaders / sub-County officials – plan to be agreed by sub-County officials • Community re-use /salvage program • Give preference to community tree removal (remove trees so they can keep for own use or selling)
Monitoring	<ul style="list-style-type: none"> • Comprehensive records of waste storage and disposal activities including any incidents, such as spills, and resultant investigations and/or actions • Regular visual inspections of waste storage facilities and containers including assessment of the following: • Appropriate waste labeling • Periodic compliance audits against SWMP • Periodic auditing of third party treatment and disposal services

8.10.2 Site waste management plan

Contractors will be required to produce a Site Waste Management Plan (SWMP) with identified options for waste management and appropriate treatment and disposal sites and handling of the waste as a method of implementing best practice. It will set out procedures for segregation, storage and reuse of waste on or close to the sites and tool box talks for the workers. A SWMP will introduce management of wastes arising from the Project and will help to ensure that the concepts of the waste hierarchy are adopted and environmental impacts minimised. A SWMP

will assist in reducing the amount of waste material generated and disposed of during the construction period as well as waste generated through over-ordering of supplies or damage. The SWMP will encourage reuse and recycling of materials. The separation of waste materials on site will assist recycling, salvage, reuse and return. The SWMP will outline the methods of re-use, recovery or disposal for each waste stream and options for treatment and disposal. The SWMP is a live document that can be updated as more information becomes available by the relevant parties.

8.10.3 Community re-use

The scope for reuse of materials needs to be explored further during the development of community waste management plans in collaboration with the County officials and local community. Opportunities for recycling metal, timber and clean hardcore also need to be explored in particular with respect to transparent means for recycling back into the local community in a safe way to support socio-economic conditions in Kenya where any waste left unsecured, in particular metal and wood, around the sites or outskirts of the working areas would be removed by local residents for their own purposes but to do so without compromising on obligations for the safe disposal of waste.

The outline for this plan is provided in the ESMP. This is required to be developed in conjunction with the local district municipality identifying what waste streams will be disposed within the district and what opportunities there may be for re-use back in the community. Specific procedures will be agreed in advance of works commencing to support this activity in particular with regard to tree removal.

8.10.4 Hazardous materials management

Hazardous waste management is identified as a potential significant impact. The main waste streams that may arise from the Project that are considered to be the most difficult to manage which may include:

- Batteries, filters, oils
- Diverse types of scrap
- Non-biodegradable waste (e.g. packaging waste).
- PV Panels

It is not possible at this time to identify whether existing facilities are appropriate or alternative solutions are required to be put in place e.g. export or development of a Project hazardous waste facility. Appropriate storage will be required on site until suitable NEMA certified disposal options can be defined or to be removed by suppliers for offsite recycling, subject to NEMA approval. Transboundary movements should be considered as a last option.

8.11 Noise

8.11.1 Summary of mitigation

The ESIA identified potential significant impacts during the following activities to nearby receptors:

- Perimeter road upgrade
- Internal access road development
- Site preparation, in particular forestry clearance, piling and excavation works
- Transportation of construction plant and Project components

- Assembly of Project components
- Site employee vehicles

The main mitigation measures are summarized briefly in Table 78 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

The reduction and control of construction noise will be accomplished through the implementation of best practicable means. No specific measures are noted for operation where noise generation is expected to be negligible. The measures detailed in Table 78 also apply to the decommissioning phase and they will be followed in order to reduce noise impacts wherever practicable to do so.

Table 78: Summary of significant impacts and proposed mitigation or enhancement – noise, construction phase

Type of Mitigation	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<ul style="list-style-type: none"> • Positioning of plant items as far as practically possible from sensitive receptors along the northern boundary of the site
Mitigation of significant impacts	Prepare noise control plan
Mitigation of non-significant impacts	<ul style="list-style-type: none"> • Restricted general hours of working to avoid sensitive periods (e.g. night-time & evenings between 7pm and 7am) • Use of quietest work methods and plant items where practicable • Equipment to be properly maintained and fitted with appropriate noise control at all times • Powering down plant items when not in use • Use of broadband reversing alarms at all times • Avoid revving vehicle engines at all times • Site employees to be advised of the noise sensitive nature of the area • Availability of a site contact number for local residents for further information <p>Develop and implement a complaints investigation procedure</p>
Compensation and enhancement	No specific measures noted
Monitoring	<p>All phases</p> <ul style="list-style-type: none"> • Monitor noise grievances through the Project grievance mechanism • Construction phase contractors to monitor noise levels at regular intervals in order to demonstrate compliance with all relevant guidelines at the three closest properties along the northern boundary of the site
Decommissioning	<ul style="list-style-type: none"> • It is recommended that the decommissioning contractor(s) monitor noise levels at regular intervals to demonstrate compliance with all relevant guidelines at sensitive sites

8.12 GHG emissions

8.12.1 Summary of mitigation

The ESIA identified potential impacts in the following areas:

- Sourcing materials from sustainable sources
- Using local sources of materials
- Ensuring efficiency in construction and planning including siting of construction camps, laydown and other work areas
- Using materials which can be reused or repurposed easily

As the key impacts on GHG emissions are mostly confined to the construction phase, potential measures to reduce those impacts are important in improving performance.

The main mitigation measures are summarized briefly in Table 79 and key mitigations elaborated in the following subsections. More details for these mitigation measures are available in the ESMP.

Table 79: Summary of significant impacts and proposed mitigation or enhancement - emissions

Type of Mitigation	Mitigation of significant impacts
Embedded mitigation (built in to the Project design)	<p>Procurement</p> <ul style="list-style-type: none"> Sourcing materials from local suppliers wherever possible. This is to avoid potentially long-distance travel for materials. In addition, materials manufactured in Kenya itself are potentially lower emissions than surrounding nations due to the high proportion of hydro power in the grid electricity mix. The contractor should preference local suppliers. Using materials which can be recovered locally (from other Projects?) in preference to remote suppliers Assessing the sustainability credentials of potential suppliers as part of the procurement process, for instance the provision of recycled materials, presence of an Environmental Management System <p>Design</p> <ul style="list-style-type: none"> Where practicable, specifying recycled steel or reuse of other steel in the frames. Recycled steel has a lower embodied carbon than virgin steel therefore its use would reduce the impact. Reviewing and assessing the proposed specification required for roads and consider whether hard surfacing is necessary.
Mitigation of significant impacts	<ul style="list-style-type: none"> Efficiently planning the construction phase to minimise transportation requirements, workers and materials and optimizing the use of resources to avoid potential wastage. Considering transport modes when determining logistics of construction. Requesting contractors to elaborate on their construction philosophy to address this point. Using best available technology for diesel generators and other plant to ensure the maximum efficiency and lowest fuel/energy use of the construction plant Implementing toolbox talks that promote turning off of engines when not in use Controlling exhaust emissions from vehicles operating within the site, including trucks, excavators, diesel generators or other plant equipment through regular servicing
Mitigation of non-significant impacts	
Compensation and enhancement measures	No specific enhancement measures noted
Monitoring	<p>Monitoring of construction emissions specifically in relation to management of greenhouse gas emissions is not proposed. Typical auditing processes that can be applied to the Project may include:</p> <ul style="list-style-type: none"> Recording amount of materials sourced from local suppliers Recording the amount of fill materials sourced along the route from borrow pits Ensuring that a system is in place to review potential suppliers in terms of environmental performance Ensuring that a transport management plan is in place to optimize the delivery of materials to site <p>Monitor energy use, water use and raw material use</p>

8.13 Assessment of residual significance

Based on the mitigation measure outlined above we have reassessed the impact significance assessment for the impacts that were predicted to be **moderate adverse or above or minor beneficial and below** and re-evaluated the impact significance based on the application of this mitigation. The outcomes of this are summarized in Table 80. Table 11 indicates that all impacts can be reduced to levels that are considered non-significant.

Table 80: Residual impacts

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)	Residual significance
Socio economic					
Electricity diversification and clean energy - locally	Beneficial	Low	Negligible	Insignificant Beneficial	Moderate beneficial
Employment Generation	Beneficial	Medium	Minor	Minor Beneficial	Moderate beneficial
Occupational health and safety and labour rights (unskilled / low skilled workers)	Adverse	High	Moderate	Major Adverse	Minor adverse
Project induced migration	Adverse	High	Minor	Moderate Adverse	Minor adverse
Community health, safety and security (traffic, nuisance, material storage, antisocial behaviour, public health)	Adverse	High	Minor	Moderate Adverse	Minor adverse
Land use change and economic displacement	Adverse	High	Moderate	Major Adverse	Minor adverse
Archaeology and cultural heritage					Minor adverse
Unknown artefacts	Adverse	Medium	Moderate	Moderate Adverse	Minor adverse
Cultural land use (recognition of historical linkage)	Adverse	Medium	Moderate	Moderate Adverse	Minor adverse
Medicinal value trees (name these)	Adverse	Medium	Major	Major Adverse	Minor adverse
Biodiversity					
Construction					
Disturbance, degradation, destruction and fragmentation – Woodland habitat	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Disturbance and habitat loss/degradation – Kenya Priority Species African Elephant	Adverse	High	Minor	Moderate adverse	Minor adverse

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)	Residual significance
Disturbance and habitat loss/degradation – Other mammal species	Adverse	Low	Moderate	Moderate adverse	Minor adverse
Disturbance and habitat loss/degradation – Near Threatened Denham's Bustard (<i>Neotis denhami</i>)	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Operation					
Disturbance and habitat loss/degradation – Woodland habitat	Adverse	Low	Moderate	Moderate adverse	Minor adverse
Disturbance and habitat loss/degradation – Other plant species	Adverse	Low	Moderate	Moderate adverse	Minor adverse
Disturbance and habitat loss/degradation – Kenya Priority Species African Elephant	Adverse	High	Minor	Moderate adverse	Minor adverse
Water resources and water quality					
Construction					
Surface water runoff leading to soil erosion	Adverse	Low	High	Moderate adverse	Minor adverse
Operation					
Increased water abstraction for operational domestic water use and panel cleaning and irrigation leading to conflict with other water users.	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Air quality					
Construction					Minor adverse
Dust from site establishment works	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Dust from traffic movements	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Decommissioning					
Dust from site decommissioning works	Adverse	Medium	Moderate	Moderate Adverse	Minor adverse
Dust from traffic movements	Adverse	Medium	Moderate	Moderate Adverse	Minor adverse

Potential impact	Adverse /Beneficial	Sensitivity	Magnitude	Impact evaluation (pre-mitigation / enhancement)	Residual significance
Glint and glare					
Operation					
Glint for road users travelling north / south on B7	Adverse	Low	Minor	Minor adverse	Minor adverse
Glare for receptors to the north east and west of the site	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Landscape and visual impacts					
Operation					
Impact to landscape character	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Impact to visual landscape	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Traffic and Transportation					
Construction					
Construction impact upon road users and traffic flow (local / direct AOI)	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Construction traffic impact to local road infrastructure (wear and tear) (indirect AOI)	Adverse	Medium	Moderate	Moderate adverse	Minor adverse
Waste and materials					
Construction					
Material use contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse	Minor adverse
Waste generation contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse	Minor adverse
Decommissioning					
Waste generation contaminate receiving environment	Adverse	Moderate	Medium	Moderate adverse	Minor adverse
End of life disposal of PV panels	Adverse	Moderate	Medium	Moderate adverse	Minor adverse
Noise					
Construction					
General site works	Adverse	Medium	Moderate to high	Major adverse	Minor adverse
Traffic noise	Adverse	Medium	Moderate	Moderate adverse	Minor adverse

9 Conclusion

The key findings are summarised as follows:

- The Project can be developed in accordance with Environmental Management and Coordination Act (EMCA) 1999 & EMCA (Amendment) 2015, Act and supporting regulations
- Public perception of the Project is good
- Stakeholders require a clear communication program and a Project stakeholder committee and this is committed to in the Project stakeholder engagement plan (SEP) developed as part of the ESIA suite of documents
- Land is privately owned by KenGen and although there are historical associations between the local community, today the land is used for grazing, collection of firewood and bee keeping there are no permanent inhabitants on the land and it is deemed that any loss of land use may be managed through the LRP
- Enhancement of socio-economic benefits to bring a moderate to high positive outcome for the community can be achieved through the community enhancement programs proposed including:
 - Improved access to electricity for the community in the neighbourhood of the project site.
 - One community water storage Projects
 - Seek to partner with local government institutions to support a technical empowerment program for local youth (prior to start of construction)
 - Set up a local hiring / business database (individual and business) (at least two months prior to start of construction)
 - Solar street lighting (Machang'a main street) to support enhanced operating hours for small businesses in the area
 - Livelihood restoration, including a training program (grazing / bee keeping / firewood collection) for local community
 - Visitor centre including solar power exhibit and historical exhibit referring to land use change in the region to date to located in the existing Hydro Plaza Complex
 - Improve Machang'a Health Centre to provide better health, emergency and maternity services
 - Buffer zone replanting (reforestation Project at 10:1 replanting ratio in line with GIIP)
- The Project may generate negative environmental impacts which have been evaluated as non-significant or which can be mitigated or compensated to acceptable levels as set out in the Project environmental and social management plan (ESMP), Volume IV
- The closest receptors are along the northern boundary of the site and environmental impacts to these receptors over the short duration construction period is deemed to be non-significant following implementation of mitigation measures
- The Project is not deemed to have a significant impact on areas or species of conservation significance

- The Project will not result in significant habitat loss of dry forest however the Project will implement a habitat removal and compensation plan that includes a 10:1 compensation replanting program
- Loss of medicinal shrubs (cultural / provisioning ecosystem services) are deemed to be adequately addressed through offset planting and compensation planting
- The Project will have a negligible impact on groundwater levels, surface water levels, water quality and water availability in the local region
- The Project is not expected to impact on sites of cultural (tangible or intangible cultural heritage)
- A robust archaeological survey and monitoring program will be implemented to address low risk potential for unforeseen archaeological artefacts
- The Project will create opportunities for secondary business opportunities in the area
- The Project will play a key step towards supporting Kenya's objective to meet 73% renewables generation by 2030

9.1 What is the overall outcome of the ESIA?

The ESIA concludes that the Project represents a priority infrastructure for Kenya. The Project is an effective and viable energy generation option for the country.

Key mitigation measures have been identified and measures for implementation are outlined in the ESMP and SEP. These align with national laws and regulations and GIIP as required by international standards.

The environmental and social impact assessment process has demonstrated that with the application of these mitigation and compensation measures the Project will not have significant environmental or social impacts.

Opportunities for enhancing positive opportunities have been identified to maximise Project benefits. These include Projects related to access to water, electricity, employment and improved infrastructure. These form an integral part of the Project scope of work and will support local development objectives.

10 References

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A. Signature sheets

B. Bill of quantity

BILL OF QUANTITIES

Main Equipment

Name	Description	Unit	Quantity
Modules	PV Modules	Pcs	139,800
Inverters	Central Inverters	Pcs	17

Balance of System - Structural

Racking	90-module Tracker Rows	Pcs	1,376
	60-module Tracker Rows		266
Foundation	Pcs	Pcs	17,500

Balance of System Electrical

DC Cable and Source Circuits, Combiner Boxes	6 mm2 CU, PVF-1, 1500 VDC, UV Resistant	300 m Spool	1,700
	4 mm2 CU, THWN	300 m Spool	850
	300 mm2 AL, 90C, 1500 VDC Direct Burial	50 m spool	1,000
	Combiner Boxes	unit	272
Medium Voltage Cables	300 mm2 15 kV, MV-90, TR-XLPE, Direct Bury, 1/3 Conc. Neutral	50 m spool	180
	185 mm2 15 kV, MV-90, TR-XLPE, Direct Bury, 1/3 Conc. Neutral	50 m spool	84
	120 mm2 15 kV, MV-90, TR-XLPE, Direct Bury, 1/3 Conc. Neutral	50 m spool	72
	70 mm2 15 kV, MV-90, TR-XLPE, Direct Bury, 1/3 Conc. Neutral	50 m spool	90
Substation/Grid Interconnection	MV Switchgear	lot	1
	Main Transformer, 132/15 KV	lot	1
	Grid Interconnection and Power Evacuation	lot	1
Low Voltage	LV Distribution	lot	1
Instrumentation and Control	Monitoring System	lot	1
	Instrumentation	lot	1

Civil Works

Civil Works	Access Roads	sq meters	30,000
	Land Preparation	lot	1
	Cable Routing	lot	1
	Fencing	metres	6,000
	Electric Fencing	metres	1,000
	Water Pipeline	meters	10,000
	Control Room	lot	1
	Security System	lot	1

C. Approval of Terms of Reference (ToR)



NEMA/TOR/5/2/.....

Date: 27/09/2017.....

Kenya Electricity Generating
Company (KEMGEN)
.....

**RE: ACKNOWLEDGEMENT AND APPROVAL OF TERMS OF REFERENCE
(TOR) FOR THE ENVIRONMENTAL IMPACT ASSESSMENT STUDY**

We acknowledge receipt of the TOR for the above subject.

Pursuant to the Environmental Management and Coordination Act, 1999 the
Second schedule and the Environmental (Impact Assessment and Audit Regulations
31 and 25, your terms of reference for the Environmental Impact Assessment (EIA)
study for the proposed 40 megawatt Seven toriks
Solar power Station
.....
.....
.....

..... has been approved.

You shall submit ten (10) copies and one electronic copy of your report prepared by
a registered expert to the Authority.

BONFACE MAMBOLEO
EIA SECTION HEAD

D. EcoPlan`s NEMA certificate

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/5124

Application Reference No:

NEMA/EIA/EL/7359

M/S Irene Keino
(individual or firm) of address

P.O. BOX 48597-00100, Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **0447**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **2/16/2017**

Expiry Date: **12/31/2017**

Signature.....

(Seal)

Director General
The National Environment Management
Authority



RECEIPT



Environment

RECEIVED

17 JAN 2018

P.O. Box 5087 - 00506 Nairobi Kenya Tel: 0774 239 594 eikenya2013@gmail.com

Email: eikenya2013@gmail.com Web: www.eik-ke.org P.O. Box 5087 - 00506, NAIROBI

No.

7430

Date:

17/1/2018

Received from.....

1st ARI C. KEGIRO

The sum of Shillings

Two thousand only

Being payment of.....

Env Shillings - (head - 0447)

With thanks

Kshs.

2027-

Received by

Cash/Cheque No.

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Environment
Institute of Kenya

**E. Team resumes (ESIA senior members)
and NEMA licenses (for the Kenya experts)**

Appendix A: Curricula Vitae

Irene Cheptoo Keino

Proposed Position:	Lead Soci-Economic Specialist
Name of Firm:	Eco Plan Management Ltd
Profession:	Urban Planner / Environmental & Social Expert / Heritage Expert
Date of Birth (MM/DD/YYYY):	16.02.1966
Years with Firm/Entity:	Since inception 2005
Nationality:	Kenyan
Membership in Professional Societies:	

2010 - Present:	Member of the Corporate Governance Institute Kenya
2004 - Present:	Member of the Environmental Institute of Kenya (EIK)
2004 - Present:	Member of the National Environmental Management Authority Licence No 447 (NEMA)
2008: Present	Member of the Architectural Association of Kenya-Environmental Chapter (AAK)
2008 - Present:	Member of the Architectural Association of Kenya-Town Planning Chapter (AAK-TP)
2001: Present	Member of the Physical Planning Registration Board (PPRB) Ministry of Lands
2010: Present	Member of International Society of City & Regional Planners (ISOCARP) Based at The Hague
2010: 2012	Member of The Royal Town Planning Institute (RTPI-UK)

Key Qualifications

A Masters graduate of both Urban & Country Planning and Executive Business Administration from University of Nairobi and United States International University respectively. Has a Bachelor of Arts in geography and sociology, from the same University. Irene is registered as an Environmental & Social and Strategic Environmental Expert by the National Environmental Management Authority with licence no 447. She is also registered by the Physical Planning Registration Board as a practising Physical Planner by the Ministry of Lands and the Architectural Association of Kenya-Town Planning Chapter. Irene has acquired certification in Conservation of Heritage and Strategic Environmental Assessment by Lund University, Sweden and South African Institute for Environmental Assessment (SIEA) respectively.



Ms Keino has 23 years post graduate work experience both in private and government. This experience has provided her to partner with both local and international firms for selected assignments in the built, infrastructure and energy and renewable sectors. Irene has been a team leader for the Resettlement Action Plan and Environmental Social Impact Assessment for Standard Gauge Railway (SGR), Solar Plant for Kengen – Embu County, Power Transmission lines from Olkaria-Nandi-Kisumu line, Mandera wind Power, Kenya Power Substations, several Highways and master planning for private and government clients. She has also participated in the preparation of the Strategic Environmental Assessment for the (LAPSSET) Lamu Port South Sudan Ethiopia Infrastructure Transport Corridor as a social-economic and Conflict Resolution Specialist. Of the 23 post experience years, Irene worked her way as a graduate planner at the Ministry of Lands & Housing Headquartered in Nairobi and Kilifi District in Coast Province, now after devolution called Kilifi County. Her main focus has been in the areas of environmental, social and health & safety of a project. She has worked as a team leader as well as a specialist in the areas described above. Has a strong working relationship within government and the private sector as shown below as her achievements in her career:

Trust Positions Held/Other Academic Activities

Appointed as a member of the Ethics Anti-Corruption Commission from 11th May 2012 - April 2015. Served as the vice Chairperson, chairperson of the Audit Committee, Operations committee and File Audit of the commission.

Appointed to seat at the Rapid Results Initiative (RRI) Anti-Corruption to be achieved within 100 Days by the Head of state and chaired by the Head of Public Service, Kenya 2013

Appointed by H.E to serve as a member of the **selection Panel to interview** the current (IEBC) Independent Election Commissioners and sworn in by the Chief Justice on 8th August 2011.

Served as a **Board Member** of the National Construction Authority(NCA, 2011-Sept 2012 and served an interview Panel of the NCA to interview And Recruit the CEO of NCA on 2nd October 2012.

Served as the Vice Chairperson of the **Advisory Board** to the Kenya Anti-Corruption Commission on a contract basis from May 2009-Decemeber 2011.

A member of the **Election process and management of ballot papers** at the Architectural Association of Kenya (AAK), 2011.

Nominated to the **Technical Advisory Committee at (NEMA) National Environmental Management Authority**, handling disputes of developers 2010

Elected Assistant Hon. Secretary Architectural Association of Kenya (AAK) to seat at the Governing Council 2010/11

Board member of the Ministry of Lands & Settlement: Physical Planning Registration Board 2008/9/10.

2010: Examination panel for Physical Planning registration

for Professional Exams

2010:Co-chair of the International Society of City and regional Planner-Portugal-Workshop

Elected Registrar of the Town Planning Chapter - Architectural Association of Kenya (AAK) 2010/11

SELECTED PUBLICATIONS ARTICLES, BOOKS AND BOOK CHAPTERS

Published in the Star Newspaper, October 2006 "Environmental Planning for the Built Environment".

Published in the Star Newspaper, July 2006 "Community planning processes are increasingly in the driving seat, leaving planners to look like petty-minded controllers rather than valuable and positive influencers." How should planners respond to such an assertion?"

Irene C. Keino and Professor Peter M. Ngau. This article was based on my Masters Spatial Planning Thesis project at the Urban Development Department at ADD, 1996.

"Small Enterprises: Flexibility and Networking in an African context" Longhorn, Kenya by D. McCormick and Peterson (Ed) 1996 entitled "Woman's social background and entrepreneurship in Nairobi,"

Conferences Attended

2014: Beach marking training at Azerbaijan anti-corruption on Ethics & Bribery

2014: Training and best practices on Ethics and Governance, Money laundering laws, Multi-Legal Assistance, Ethics Office in the Senate, New York.

2010: Central Vigilance Commission (CVC)- India Led the Board members delegation from the Kenya Anti-Corruption Commission to the CVC-India on training and best practices.

2006: Architectural Association of Kenya Annual convention on afro cities held in Nairobi from 20th-23rd September, 2006.

2006: Afri-Cities summit held in Nairobi between 18th -23rd September 2006.

2006: Planners Conference: Planning with the poor: Challenges and Opportunities facing Planners, held at Panafric Hotel on 18th April, 2006.

2006: Consultations and stakeholders meeting on policy review for zone 3, 4 and 5 for area Westlands, Kileleshwa and Lavington, Nairobi, 2006.

2006: Seminar on Draft land policy by Architectural Association of Kenya-Town Planning Chapter.

RESEARCH REPORTS

2013/2014 Challenges Encountered In The Fight Against Corruption: The Case Of Ethics And Anti-Corruption Commission: **A Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Global Executive Masters in Business Administration (GeMBA).**

1992-93: **"Small Enterprises: Flexibility and Networking in Nairobi Markets:** Submitted in The School of the Built Environment, Department of Urban & Regional Planning as a requirement for Masters in Urban & Regional Planning-Irene Keino.

AWARDS, GRANTS, PRIZES, AND SCHOLARSHIPS

2011 Decorated with the Moran of the Burning spear (MBS) by His Excellency the President of Kenya on 12th December.

2011: Nominated by the Embassy of Sweden to study Conservation of Heritage Buildings through the Architectural Association of Kenya University of Lund, Sweden, Faculty of Architecture and Built Environment.

Key Assignments

Assignment name: : Environmental & Social Impact Assessment For The Proposed Development Of 50 Mw Power Plant At Garissa County	Approx. value of the contract (in currency: USD) 6,400
Country: Location within country: Garissa County	Duration of assignment (months): 5
Name of Client: Kenya Power & Lighting Co	Total N ² of staff-months of the assignment: 5
Address: 30099 – 00100, Nairobi	Approx. value of the services provided by your Consultant under the contract (<i>in currency: USD</i>) 6,400
Start date (month/year): March 2009 Completion date (month/year): June 2009	N ² of professional staff-months provided by associated Consultants: 1
Name of associated Consultants, if any: Richard Mongare	Name of senior professional staff of your Consultant involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader): Irene Keino Team leader Richard Mongare-Deputy team Leader Coordinate all tasks for the assignment Ensure timelines are met Supervise staff Develop TOR for the assignment
Narrative description of Project: Preparation of ESIA report for the construction of a diesel power plant	

Description of actual services provided by your staff within the assignment:

Scoping exercise
 Prepare TOR for the study
 Identify project impacts, mitigation measures
 Prepare stakeholder consolation plans
 conduct stakeholder participation
 ESMP, monitoring
 Draft and final reports
 Obtain a NEMA licence

Assignment Name: MOLH U D/NMED/NaMSI P/CONS.02I20I4.2OI 5 CONSULTANCY SERVICES FOR PREPARING RESETTLEMENT ACTION PIANS AND PREPARATION OF INDEPENDENT RAP REPORTS FOR NAMSIP SUB PROJECTS WITHIN THE NATROBI METROPOLITAN REGION AND REVIEW ESIA FOR EACG MARKET		Country: Kenya
Location within Country: Nairobi Metropolitan Areas in involving 15 markets (Karandini, Jogoo, Juja, Kitengela, Tala, Ngong, Ole Kissassi, Kihara, Kikuyu, Githurai, Ruai, Mwariro, Muthurwa, Makadara-Thika, Kangemi)		Professional Staff provided by your company 4
Name of Client: Ministry of Lands, Housing & Urban Development		Name of client's contact person: Architect Lawerance Mochama
ADDRESS Project Coordinator, Resettlement Action Plans (RAPs), NAMSIP Project, Ministry of Land, Housing and Urban Development, P.O Box 30130-00100, Nairobi.		No Staff Months of the assignment : 12
Start Date (Month/Year): August 2016	Completion Date (Month/Year): June 2017	Approx. Value of Services: US\$ 610 000
Name of Associated Firm(s) if Any 1. Impluso International & Impluso Kenya Ltd 2. AWEMAC 3. Eco Plan Management Limited		Number of Professional Staff-Months Provided by Associated Consultants : 6
Name of Staff (Project Director/Coordinator, Team Leader) Involved and functions performed: Team leader: Prof J. Kibwage Deputy team Leader Irene Keino, Prepare field tool Train enumerators Assign TOR to Land valuer, natural resource management and land expert Supervise census survey & land and structures inventory Prepare stakeholder plans Conduct stakeholder engagements Coordinate all tasks for the assignment & Ensure timelines are met Develop TOR for the assignment		
Narrative Description of the Project:		

Preparation of RAP report for 15 markets in Nairobi Metropolitan area

Description of Actual Services Provided by the Staff:

The main objective of a resettlement action plan is to provide a plan for resettlement and rehabilitation of project affected persons so that their losses owing principally to the project are compensated and their standard of living improved or at least restored to the pre-project levels. In this regard, the income earnings potential of individuals is restored and their livelihoods sustained. The consultant will be expected to undertake resettlement action plans for each sub-project of NaMSIP, and to prepare independent RAP reports.

Social and environmental Impact Assessment Survey & Attend key and project stakeholder workshops
 Census for PAPs, land and structures & Prepare valuation matrix & valuation criteria
 Draft valuation and socio economic chapters & Prepare TOR for the study, Identify environmental impacts &
 Identify PAPs and their relocations sites, Prepare draft and final reports
 Conduct stakeholder participation & Prepare advertisement for public consultations

Education

2013-2014	Executive Masters in Business Administration, Majored in Strategic Management, United States International University, Nairobi-Kenya
1991-1992	Masters of Arts, Urban & Regional Planning, University of Nairobi, Nairobi-Kenya
1987- 1989	Bachelor of Arts Hons, Geography & Sociology, University of Nairobi, Nairobi-Kenya

ADDITIONAL TRAINING

August 2016:	Short Course: Strategic Environmental Assessment; Trained at African Wild Life Foundation (AWF), Karen, Funded by Ewaso Ng'iro Lions and Laikipia Wildlife Foundation under the Ewaso Ng'iro Basin Stakeholder Forum and in collaboration with South African Institute for Environmental Assessment (SIEA) by Executive Director Mr. Peter Tarr.
April 2013:	2 day course on the Best Practices in Leading and Managing Exceptional State owned Enterprises & Government Agencies Boards: Africa 2013 Masterclass Programme by Jessina Naome & Associates, Sandton Convention Centre, Sandton, Johannesburg, South Africa, 18-19 th April, 2013.
2012:	Presentation and report writing skills, Business Training Direct, Beckenham, Kent, United Kingdom, November, 2012.
2010:	5-Day Training course for Directors by Centre for Corporate Governance, May 2010.
2008/09:	Advanced International Training (Diploma) Conservation & Management of Historic Buildings, Lund University, Sweden.
2004:	Environmental Impact Assessment & Audit, Cleaner production Centre.
2007:	Financial Training for non-Financial Managers, Kenya Institute of Management.
1998:	Customer Care Training, Kenya Institute of Management.

Trust Positions Held/Other Academic Activities

Appointed as a member of the Ethics Anti-Corruption Commission from 11th May 2012 - April 2015. Served as the vice Chairperson, chairperson of the Audit Committee, Operations committee and File Audit of the commission.
 Appointed to seat at the Rapid Results Initiative (RRI) Anti-Corruption to be achieved within 100 Days by the Head of state and chaired by the Head of Public Service, Kenya 2013
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Irene C. Keino and Professor Peter M. Ngau. This article was based on my Masters Spatial Planning Thesis project at the Urban Development Department at ADD, 1996.

"Small Enterprises: Flexibility and Networking in an African context" Longhorn, Kenya by D. McCormick and Peterson (Ed) 1996 entitled "Woman's social background and entrepreneurship in Nairobi,"

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2014: Beach marking training at Azerbaijan anti-corruption on Ethics & Bribery

2014: Training and best practices on Ethics and Governance, Money laundering laws, Multi-Legal Assistance, Ethics Office in the Senate, New York.

2010: Central Vigilance Commission (CVC)- India Led the Board members delegation from the Kenya Anti-Corruption Commission to the CVC-India on training and best practices.

2006: Architectural Association of Kenya Annual convention on afro cities held in Nairobi from 20th-23rd September, 2006.

2006: Afri-Cities summit held in Nairobi between 18th -23rd September 2006.

2006: Planners Conference: Planning with the poor: Challenges and Opportunities facing Planners, held at Panafric Hotel on 18th April, 2006.

2006: Consultations and stakeholders meeting on policy review for zone 3, 4 and 5 for area Westlands, Kileleshwa and Lavington, Nairobi, 2006.

2006: Seminar on Draft land policy by Architectural Association of Kenya-Town Planning Chapter.

RESEARCH REPORTS

2013/2014 Challenges Encountered In The Fight Against Corruption: The Case Of Ethics And Anti-Corruption Commission: **A Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Global Executive Masters in Business Administration (GeMBA).**

1992-93: "Small Enterprises: Flexibility and Networking in Nairobi Markets: Submitted in The School of the Built Environment, Department of urban & Regional Planning as a requirement for Masters in Urban & Regional Planning-Irene Keino.

AWARDS, GRANTS, PRIZES, AND SCHOLARSHIPS

2011 Decorated with the Moran of the Burning spear (MBS) by His Excellency the President of Kenya on 12th December.

2011: Nominated by the Embassy of Sweden to study Conservation of Heritage Buildings through the Architectural Association of Kenya University of Lund, Sweden, Faculty of Architecture and Built Environment

Employment Record

Period	Employer, Title	Country	Summary of Activities Performed Relevant to the Assignment
May/2015-Present	Eco Plan Management Ltd, Director / Lead Consultant	KENYA	Description
May 2012 / April-2015	Ethics Anti-Corruption Commission / Vice-Chairperson: Commissioner	KENYA	Supervision of the Ethics Anti Commission staff Dealt with anti-corruption Policy matters of the country Performance contracting In charge of audit committee, operation of the anti-corruption commission
Jan 2007 / April 2012	Eco Plan Management Limited Director / Lead Consultant	KENYA	In-charge of planning and environmental services Supervise staff Social impact assessments Traffic Impact assessments Strategic Environmental Assessments Resettlement Action plans Master planning Landuse planning Liasie with clients on progress Stakeholder consultations Report writing Desk top studies Marketing of the firm Environmental audits
Jan 2002 / Dec 2006	National Cereals & Produce Board / Property Manager	KENYA	In charge of the government parastatals properties in each district Survey & title registration Processing of client contracts Supervision of contracts Procurement of experts in valuation and land survey Supervision of staff Monthly reports Management meetings Performance contracting Basic Valuation of moveable properties
August 1998 / Dec 2001	Kenya Power & Lighting Co Ltd / Physical Planner	KENYA	Management of properties of the company Survey and title registration Supervision of contracts Planning briefs Environmental compliance of the company



August 1996 / July 1998	Jorim Properties / <i>Professional Consultant</i>	KENYA	Urban planning consultancies for private & government clients activities included : planning briefs for change of user, extension of user, amalgamation of plots, master plans, subdivision plans, traffic impact assessments, Planning advisory services
Jan 1993 / July 1996	Ministry of Lands & Housing / Registered Physical Planner	KENYA	Graduate urban and regional planner for 2 years and promoted to a planner Prepared part development plans for government institutions Prepared master plans for government institutions Liaised with government officials in meeting the ministry's mandate Approved subdivision plans Prepared forward plans Updated government and private land data base Prepared written reports on a monthly basis Participated in the green town program by UN Habitat Participated in the Slum Upgrading program- Munarani Slum Prepared the Green town master plan for Malindi District

Languages

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Swahili	Good	Good	Good
Kalenjin	Fair	Fair	Fair

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

 Full name of authorized representative: Irene Keino	Date: 11 November 2016
 Full name of authorized representative: Irene Keino	Date: 11 November 2016



Cert No. 1,000,446

Certificate of Membership

This is to certify that

Irene C. Keino

Is a Lead Member of Environment Institute of Kenya

An institute founded in the year 2014 to extend and disseminate

Environmental knowledge and promote the

Practical application for public good.



Herbert Tawa Mwachiro
Chairman

11/3/2017

Date



This certificate remains property of Environment Institute of Kenya. Membership is subject to annual renewal

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/5124

Application Reference No: NEMA/EIA/EL/7359

M/S Irene Keino
(individual or firm) of address

P.O. BOX 48597-00100, Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **0447**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **2/16/2017**

Expiry Date: **12/31/2017**

Signature.....

(Seal)

Director General
The National Environment Management
Authority

P.T.O.



ISO 9001: 2008 Certified

UNIVERSITY OF NAIROBI



This is to certify that

Irene Cheptoo Heino

having satisfied the requirements
for the award of the degree of the

BACHELOR OF ARTS

Second Class Honours (Upper Division)

was admitted to the degree
at a Congregation held at
this University on the

Twenty Eighth Day of November in the Year
1989

Philip H. Mbitia

VICE - CHANCELLOR

N. D. Bwibo

DEPUTY VICE - CHANCELLOR (ACADEMIC AFFAIRS)

UNIVERSITY OF NAIROBI



This is to certify that

Irene Cheptoo Keino

having satisfied the requirements
for the award of the degree of the

**MASTER OF ARTS
(IN PLANNING)**

was admitted to the degree
at a Congregation held at
this University on the
Eighth Day of November in the Year
1993

A stylized, handwritten signature in black ink, likely belonging to the Vice-Chancellor.

VICE - CHANCELLOR

A handwritten signature in black ink, likely belonging to the Deputy Vice-Chancellor.

DEPUTY VICE - CHANCELLOR (ACADEMIC AFFAIRS)



CENTRE FOR CORPORATE GOVERNANCE

FIVE-DAY TRAINING COURSE FOR DIRECTORS

This is to certify that

Irene Keino

has attended the

Five-Day Training Course for Directors

conducted by the Centre for Corporate Governance at the

Mombasa Serena Beach Hotel, Kenya

May 24-28, 2010

Job K. Kihumba
Chairman, Board of Directors
Centre for Corporate Governance

Dr. Joshua A. Okumbe
Chief Executive Officer
Centre for Corporate Governance



Attended



Passed Examination

Dated this day of Friday, May 28, 2010



FORM 5

(r. 14(4))

Application Reference No... **A01**
Registration No... **0447**
FOR OFFICIAL USE



THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT
CERTIFICATE OF REGISTRATION AS AN ENVIRONMENTAL IMPACT
ASSESSMENT/AUDIT EXPERT

This is to certify Ms. **JANE KINO** (Address)
of **P.O. BOX 30586, NAIROBI**
has been registered as an Environmental Impact Assessment Expert in accordance with the provisions
of the Environment Management and Coordination Act and is authorized to practice in the capacity of
a Lead Expert/Associate Expert/Firm of Experts (Type) **LEAD EXPERT**

Dated this **22ND** day **DECEMBER** of **2004**

Signature *[Signature]*

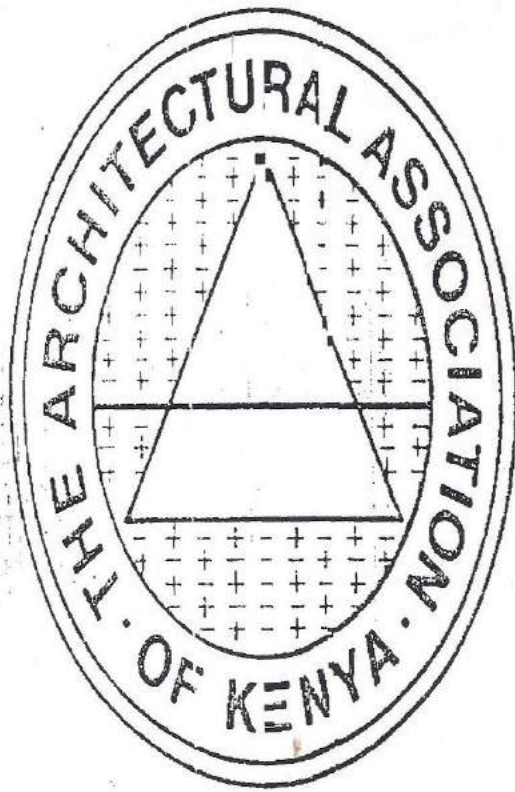
(Seal)

Director General
The National Environmental Management Authority

*Certified as a True Copy
of the Original*

[Signature]
SIMON SHIVAJI
COMMISSIONER FOR OATHS,
P. O. Box 8590-00100
NAIROBI





We certify that

Irene Cheptoo Keino
was elected on **26th March '01**

as a Corporate Member (TP)

of the Architectural Association

of Kenya, founded in 1967

Swafila
Chairman

M. K. K.
Member of Council

H. M. M.
Member of Council

M. K. K.
Honorary Secretary



Serial No.

1602



The Southern African Institute for Environmental Assessment

In partnership with the

The Ewaso Ng'iro Basin Stakeholder Forum

and funded by members Ewaso Lions and Laikipia Wildlife Forum

This is to certify that

Irene Keino

Successfully attended a short course on:

Strategic Environmental Assessment

held in Nairobi
17-18 August 2016

Peter Tarr
Executive Director
Southern African Institute for Environmental Assessment



"Better Towns, Counties and Country"

Certificate Of Corporate Membership

MEMBERSHIP NO 0002

We hereby certify that

Irene Cheptoo Keino

was elected on 19th Feb 2014 as a Corporate Member of the

Town and County Planners Association of Kenya (TCPAK)

CHAIRMAN

SECRETARY

REGISTRAR





REPUBLIC OF KENYA

To all and singular to whom these presents shall come, Greetings!

Know ye that, I, Mwai Kibaki

President and Commander-in-Chief of the Defence Forces of the Republic of Kenya

do hereby confer upon:

Irene Cheptoo Ikino

the honour and style of Moran in the Third Class of

The Order of the Burning Spear

in recognition of

her distinguished services rendered to the Nation

In virtue of which, from this day... She... shall be permitted to use and wear publicly the insignia of the Order according to the Class named, and shall at all times have and enjoy the honour and style of:

Moran of the Order of the Burning Spear

In testimony whereof, I have caused the Seal of the Republic of Kenya to be affixed.

Given under my hand at... **Nairobi**

This... **12th** *day of...* **December** *20...* **11**

Mwai Kibaki
Mwai Kibaki
President and Commander-in-Chief
Republic of Kenya



Certificate of Participation

Presented to

Irene Keino

for taking part in the GeMBA-USIU Global Study Tour held at
SolBridge International School of Business, Woosong University,
in Daejeon, South Korea.

June 8-15, 2014



John E. Endicott, Ph.D.
President, Woosong University
Vice-Chancellor & Acting Dean, SolBridge International School of Business

United States International University

The Trustees of the University, upon recommendation of the University Faculty and by virtue of the Authority in them vested, have conferred on

Irene Cheptoo Keino

who has satisfactorily pursued the studies and passed the examinations required therefor, the degree of

Global Executive Master of Business Administration

with all the rights, privileges and honors thereunto appertaining

Given at Nairobi, Kenya

this twenty-third day of August, two thousand and fourteen.



Freida A. Brown
Vice Chancellor

Chawwa
Chancellor and Chair, Board of Trustees

Appendix A Curricula Vitae

Richard Ogoti Mong'are

Proposed Position:	Environment and EHS
Name of Firm:	Eco Plan Management Ltd
Profession	Environment and EHS
Date of Birth (MM/DD/YYYY):	25 th Dec 1980
Years with Firm/Entity	8 Years
Nationality:	Kenyan
Membership in Professional Societies	National Environmental Management Authority (NEMA-EIA/EA Lead Expert) Member of Environmental Institute of Kenya (EIK)

Key Qualifications

Education

- 2013-Up to date Msc. Occupational Safety and Health (OSH)** -Ongoing-Submitted research thesis Jomo Kenyatta University of Agriculture and Technology **(JKUAT) Nairobi Kenya**
- 2004-2008 **Bsc.** Soil, Water and Environment Engineering - Jomo Kenyatta University of Agriculture and Technology **(JKUAT) Nairobi, Kenya**
- 2004-2009 Diploma in Agricultural Engineering.Jomo Kenyatta University of Agriculture and Technology **(JKUAT) Nairobi, Kenya**
- Jul – Dec 2014 International General Certificate in Occupational Safety and Health-**NEBOSH SMTS Ltd UK- Nairobi**
- Jan- Apr 2012 International-Certificate in OSH. Institution of Occupational Health and Safety- **(IOSH) Mekelle Ethiopia.**
- 2000-2002 Certificate in Information Technology Wantech Computer College Nairobi Kenya

Other trainings

- 2014 Safe Systems of Work (Permit to work, Job safety analysis, Risk assessments, Tool Box Talk)-**Tullow oil Turkana Kenya**
- 2014 Occupational hazards Awareness and Use of Safety observation and corrective Action-**Tullow oil Kenya**
- 2013 Incident, accident and Near miss investigation **Tullow oil Kenya**
- 2013 Occupational Safety health and Environment JKUAT – **Kenya**
- 2012 Risk Assessments and Working Safely- IOSH Allana Potash Mekelle **Ethiopia**
- 2011 **ISO 9000 Series**, Quality Management System (QMS).System Requirements, Documentation and Internal Audits and Integrated Management Systems (IMS). MMC Africa Ltd Nairobi, Kenya
- 2011 OHSAS 18000, Occupational Safety and Health Management Systems. MMC Africa Ltd – **Nairobi, Kenya.**
- 2011 SA 8000:2008 Social Accountability International. MMC Africa Ltd. **Nairobi, Kenya.**
- 2011 ISO 14000 Series, Environmental Management Systems, Lead Auditor. Environmental Impact Assessment EIA, Environmental Audit EA. MMC Africa Ltd. **Nairobi, Kenya.**
- 2010 Supervision of **Geotechnical and Drilling Projects at Mengai and Olkaria Atlas**

	Development and Support Ltd Nakuru, Kenya
2010	Supervision of Water Exploration and Development, MMC Africa Ltd, Naivasha Kenya
2010	Trained on Resettlement Action plan, Strategic Environmental Assessment Eco Plan Management Ltd Nairobi, Kenya
2008	Supervision of processes in food production and Machine Operations Unilever Kenya Limited, Nairobi Kenya
2006	Trained on Environmental Impact Assessment (EIA) and Environmental Audit (EA) NEMA, Thika, Kenya
2005	Trained on Utility generation and Distribution, Brewing Plant Engineering Systems, Borehole servicing, Packaging Plant Operations and Effluent Plant Management at East Africa Brewery Limited (EABL) , Nairobi, Kenya.
2004	Trained on conducting research project on use of Rice Husks for Energy Production a Project funded by JKUAT, JKUAT Nairobi, Kenya .
2002	Computer training in word processing, spreadsheet data base, Microsoft power point and MS office Wantech Computer College, Thika, Kenya
2002	Trained on how to conduct research on Renewable Energy on the use of sugar cane fibre (Bagasse) and rice husks as an alternative Source of energy for the rural and urban poor in Collaboration with Nzoia Sugar Company limited.K
2002	industrial attachment -Civil works (channel design, roads and bridges), irrigation (drip, Sprinkler and flood) water pumps servicing and maintenance Nzoia Sugar Company

Employment Record

Period	Employer, Title	Country	Summary of Activities Performed Relevant to the Assignment
MM/YYYY-MM/YYYY	Company, Position	Country	Description
Mar/2008 Present	Eco Plan Management Ltd LEAD Expert-Environment and EHS	Kenya	<p>-In charge of Environment, Safety and Health division. EIA/EA, ESIA SEA, RAP and OSH) for hydro power generation and road construction</p> <p>Conducted and prepared (RAP) for the construction of a Liquefied Natural Gas (LNG) terminal and associated electricity generation and other facilities (the Project) at Dongo Kundu area of the Mombasa harbour. for Where the ministry of Energy (MoE) financier World Bank</p> <p>ESIA for the Construction of Mukurweini – Gakonya and Rutune - Mahuaini (D429, E559 & E554) Phase II Roads for Kenya Rural Roads Authority (KeRRA)</p> <p>EIA and RAP for The Kenya Railways Corporation (KRC) for Construct Railway Boundary Walls, housing Units and market Stalls, Bridges and Footpaths along the Railway line</p> <p>RAP Ministry of Roads and Public Works rehabilitation and reconstruction of</p>

			<p>Bachuma Gate -Maji Ya Chumvi section of Nairobi – Mombasa Road (A109) of 53.4 km project under Kenya National Highways Authority (KeNHA).Project funded by World Bank.</p> <p>RAP for Naivasha-Lessos-Kisumu power transmission line covering eleven districts of approximately 225 km for The Kenya Power and Lighting Company (KPLC).Project funded by JICA</p> <p>ESIA) and RAP for the construction of Gura hydropower (6.6 km) for Kenya Tea Development Agency (KTDA) in Nyeri South District.</p> <p>Strategic Environmental Assessment (SEA) for the expansion of Taveta Town in Taveta district Coast Province</p> <p>EIA for Hotel & Apartments Tower and Executive Hotel buildings for ACK Diocese of Maseno South in Kisumu City</p> <p>EIA for Safaricom Transreceiver station Tower Establishment,</p> <p>EIA for Hot Air Ballooning for Hornbill projects Limited among others.</p> <p>Environmental Audit (EA) for the Beach Hotels in the Coast Province</p>
Jun/ 2015 Aug/ 2016	LSG Sky Chefs Kenya Limited - German Multinational Lufthansa .Safety, Health and Environment Manager	Kenya	<p>Client Representative HSE Manager- In charge of construction Site Safety health and Environment for the Construction of inflight catering facility at Jomo Kenyatta International Airport. Nairobi Kenya</p>
Feb/ 2014 Apr/2015	Atlas Development And Support Services Ltd-Formally Africa Oil Logistics & Ardan Risk and Support Ltd .SHEQ Advisor	Kenya	<p>In charge of Safety, Health and Environment in Tullow oil Fields. SHEQ Advisor for Civil works (Access roads constructions, Engomo Airstrip construction, and construction of oil drilling cellars and well pads construction at Engomo in Northern Turkana for Tullow Kenya B.V oil/Petroleum Rig site.</p> <p>Civil works - Access roads constructions (Kalokol-Engomo), construction of drilling pads and Camp design at Samaki at LakeTurkana Tullow oil Kenya.</p> <p>Civil works (Access roads constructions, Kapese Airstrip construction, construction of oil drilling cellars and well pads construction at Twiga 13T in Lokichar in Turkana for Tullow Kenya B.V oil/Petroleum Rig site.</p> <p>Civil works (Access roads constructions, construction of drilling well pads and Camp design at Menengai Geothermal for</p>

			Geothermal Development Company
Feb/2012 Jan 2014	Ardan Risk and Support Ltd. SHEQ Advisor	Ethiopia	In charge of Safety health and Environment on site for the construction of Evaporation Solution Mining Ponds and related civil works for Allana Potash at Dallol in Northern Ethiopia .
May/ 2011 Jan/2012	Ideal Environmental Consultancy Ltd - Environment and EHS	Kenya	<p>Conducting EIA, EA, SEA, RAP and do soil, water, noise level measurements and environmental monitoring.</p> <p>Projects: Construction of Nairobi Eastern Region Missing links in Nairobi County for Kenya Urban Roads Authority (KURA).</p> <p>ESIA for optimization study of wellhead power generation at Olkaria and Eburru Geothermal Field for Kenya Electricity Generation Company Ltd. (KenGen) by Mannvit hf (the Consultant), from Iceland</p> <p>Rehabilitation and Maintenance of Mau Summit – Kisumu road (BI/AI) which is part of the northern corridor transport improvement project (NCTIP) Kisumu bypass & Airport Junction to Kisian Junction by SBI International Holdings Ag (Kenya)-Israel Company.</p> <p>EIA for Construction of Tala- Ol Donyo Sabuk Road (D 521 Road linking Tala with Kilimambogo (also known as Ol Donyo Sabuk) which is located in Matungulu for Kenya Rural Roads Authority (KeRRA).</p> <p>EIA and RAP for the improvement of the Moiben- Kapcherop-Kitale (C48) road for Kenya National Highway Authority (KENHA)</p> <p>Environmental Monitoring and audit report for Nairobi –Thika Super Highway High</p> <p>Annual Environmental Audits for Strathmore University Facility located in Nairobi west, Madaraka estate along Ole Sangale Road</p>
Aug/2009 Apr/2011	Millennium Management Consultants-MMCAfrica- Senior Consultant. Environmental, Water and Waste Management.	Kenya	<p>Senior Consultant: Environmental, Water and Waste Management Consultant.</p> <p>ESIA for Makumba Borehole drilling project for Makumba communities and Baraka Jembe communities water projects assisted by World Vision International Kenya, Marafa IPA in Malindi.</p> <p>Annual EA for Manufacturing and processing industries: East Africa Sea Food Limited in both Nairobi and Kisumu, Alfa fine foods in industrial area, East Africa Foundry Industries Limited, Dodhia Packaging Limited, Metsec industries limited, Kenya steel limited, East Africa Foundry Limited and Dosh group of industries, Welrods limited located industrial area wundanyi road off enterprise</p>

			road, East Africa Packaging Industries (EAPI) in both Mombasa and Nairobi, Kenya Wine Agency Limited (KWAL) in Nairobi, Kenya Bixa Limited (KBL) in Mombasa among others
Jun/2007 July 2008	Unilever Kenya -Technical Super	Kenya	In Charge of Food Production department
May /2006 Aug /2006	National Environmental Management Authority (NEMA) Industrial attachment/Internship	Kenya	Industrial attachment/Internship
May/2005 Aug/2005	East Africa Brewery Limited (EABL) Industrial attachment/Internship	Kenya	Utility and effluent plant operation and process departments
May/ 2002 August	Nzoia Sugar Company Limited Industrial attachment/Internship	Kenya	Civil works (channel design, roads and bridges), irrigation (drip, sprinkler and flood) water pumps servicing and maintenance. Factory machines servicing and maintenance. Farm management and crop management (cane production), Farm machine, field operations Soil survey land evaluation and fertilizer use for cane production. Agronomy Renewable energy research on the use of sugar cane fibre (Bagasse) and rice husks as an alternative source of energy for the rural and urban poor.

Languages

	Speaking	Reading	Writing
English	[Excellent/Good/Fair/Poor]		
	Excellent	Excellent	Good

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

[Signature]

Full name of auth :

Date: **17/11/2016**

[Signature]

Full name of authorized representative:

Date:

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/4986

Application Reference No:

NEMA/EIA/EL/7210

M/S **Richard Ogoti Mong'are**
(individual or firm) of address

P.O. BOX 158, Nyamache

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **2763**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **2/6/2017**

Expiry Date: **12/31/2017**

Signature.....

(Seal)

**Director General
The National Environment Management
Authority**

P.T.O.



ISO 9001: 2008 Certified



This is a certificate awarded to

Richard Ogoti Mong'are

on successfully completing

Working Safely

a course approved and validated by the

Institution of Occupational Safety and Health

in association with

DTA Solutions

Signed on behalf of IOSH

A handwritten signature in black ink, likely belonging to the Chief Executive of IOSH.

Chief Executive

A handwritten signature in black ink, likely belonging to the Course Organiser, P. Wilson.

Course Organiser



Date: 27 February 2012

Possession of this certificate does not confer exemption from accredited qualifications which lead to membership of IOSH.

Cert No.: WS57342



nebosh

NEBOSH International General Certificate in Occupational Health and Safety

This is to certify that

Richard Ogoti

was awarded this qualification on

17 November 2014

with Credit

Sir Bill Callaghan
Chair

Teresa Budworth
Chief Executive

Master log certificate No: 00250308/637519

SQA Ref: R368 04



The National Examination
Board in Occupational
Safety and Health
Registered in
England & Wales No. 2698100
A Charitable Company
Charity No. 1010444

MMCAFRICA

INTAS

Millenium Management Consultants

CERTIFICATE OF ATTENDANCE

This is to certify that

RICHARD OGOTI

of

Millenium Management Consultants

Attended an Awareness training based on

**Environmental Management Systems
ISO 14001:2004**

Date: 20th September , 2010



Training Manager



Principal Consultant

CERTIFICATE NO.
DATE OF ISSUE
POSTAL ADDRESS
COURSE NO.



MMC/ISO/NBI/10/13598
29th October , 2010
BOX 44569-00100; NAIROBI; KENYA
MMC/ISO/MMC/10/01

Arjan Risk and Support Services Ltd. QHSE Department

Induction Training

All Accidents Are Avoidable

Is Awarded To

Richard Opoti Mwangi

- HSE Induction 1
- First Aid Awareness 1
- Job Safety Awareness 1
- Safety Signs
- Environmental & Waste Management
- Fire Awareness 1
- Manual Handling
- Safety Observation System
- Risk Assessments
- Personal Protective Equipment

Alice
Anne Laura QHSE Manager

Michael
Michael Pelham Managing Director

21st August 2012



CERTIFICATE OF ACHIEVEMENT

This is to certify that

RICHARD OGOTI MONG'ARE

Has successfully completed the course assessment and examinations for
the

*Auditing Principles and Environmental Management
Systems Auditor Training Course*

which meets the training requirements for

EMS Auditor / Lead Auditors Course

A blue ink signature of the Lead Tutor.

Lead Tutor
MMCAFRICA

Held on 26th – 30th September, 2011
At Nairobi, Kenya
Certificate issued on 6th October, 2011
Certificate Serial No. INTAS/MMC/ISO/LAC/16489

A blue ink signature of the Training Manager.

Training Manager
MMCAFRICA



EHS In House Training

Certificate Of Training

This is to certify that

RICHARD MONG'ARE

Has completed a 16 hour course of basic Incident Investigation Training

Course Reference No: 1113/2013

At: Tullow Kenya BV, Windsor Hotel, Nairobi, Kenya.

From: 05/11/2013 to 06/11/13

Name of Instructor

Terry Webber

Signature

A handwritten signature in dark ink, appearing to be "Terry Webber", written over a horizontal line.

Certificate No.

TKBV/1113/08

Certificate



Kenya
Red Cross

is hereby awarded to

Richard Ogoti Mong'are

*having attended a
Basic First Aid Course*

17/09/12
Date of issue

No/BFA/.....20576

Valid for 1 year from date of issue

KENYA RED CROSS SOCIETY
P.O. BOX 1111
NAIROBI
R. Ogoti Mong'are
Secretary-General

Curriculum Vitae

MWIIHAKI MATHU

Proposed Position:	Environmental Expert
Name of Firm:	Eco Plan Management Ltd
Profession:	Environmental & Social Expert
Date of Birth (MM/DD/YYYY):	17/01/1990
Years with Firm/Entity:	4
Nationality:	Kenyan
Membership in Professional Societies:	NEMA & EIK

2014-Present: National Environment Management Authority (NEMA)-Associate Expert (**REG. NO 7192**)

2015-Present :Member at Environment Institute of Kenya (EIK)

Key Qualifications

A Bachelors graduate of Environmental Science from Kenyatta University. Has a Diploma in Project Management from Kenya Institute of Management . Mwihaki is registered as an Environmental & Social and Strategic Environmental Expert by the National Environmental Management Authority with licence no 7192.

Ms. Mwihaki Mathu has over 4 years experience in environmental and social impact assessment, environmental audit, Resettlement Action Plan (RAP). She has conducted over 20 projects. This experience has provided her to partner with both local and international firms for selected assignments in the built, infrastructure and energy and renewable sectors. Mwihaki has been involved in the Resettlement Action Plan and Environmental Social Impact Assessment for Standard Gauge Railway (SGR), Solar Plant for Kengen – Embu County, Power Transmission lines from Olkaria-Nandi-Kisumu line, Mandera wind Power, Kenya Power Substations, several Highways .



Key Assignments

Assignment Name: MOLH U D/NMED/NaMSI P/CONS.02I2OI4.2OI 5 CONSULTANCY SERVICES FOR PREPARING RESETTLEMENT ACTION PIANS AND PREPARATION OF INDEPENDENT RAP REPORTS FOR NAMSIP SUB PROJECTS WITHIN THE NATROBI METROPOLITAN REGION AND REVIEW ESIA FOR EACG MARKET		Country: Kenya
Location within Country: Nairobi Metropolitan Areas in involving 15 markets (Karandini, Jogoo, Juja, Kitengela, Tala, Ngong, Ole Kissassi, Kihara, Kikuyu, Githurai, Ruai, Mwariro, Muthurwa, Makadara-Thika, Kangemi)		Professional Staff provided by your company 4
Name of Client: Ministry of Lands, Housing & Urban Development		Name of client's contact person: Architect Lawerance Mochama
ADDRESS Project Coordinator, Resettlement Action Plans (RAPs), NAMSIP Project, Ministry of Land, Housing and Urban Development, P.O Box 30130-00100, Nairobi.		No Staff Months of the assignment : 12
Start Date (Month/Year): August 2016	Completion Date (Month/Year): June 2017	Approx. Value of Services: US\$ 610 000
Name of Associated Firm(s) if Any 1. Impluso International & Impluso Kenya Ltd 2. AWEMAC 3. Eco Plan Management Limited		Number of Professional Staff-Months Provided by Associated Consultants : 6
Name of Staff (Project Director/Coordinator, Team Leader) Involved and functions performed: Team leader: Prof J. Kibwage Deputy team Leader Irene Keino, Prepare field tool Train enumerators Assign TOR to Land valuer, natural resource management and land expert Supervise census survey & land and structures inventory Prepare stakeholder plans Conduct stakeholder engagements Coordinate all tasks for the assignment & Ensure timelines are met Develop TOR for the assignment		
Narrative Description of the Project:		

Preparation of RAP report for 15 markets in Nairobi Metropolitan area

Description of Actual Services Provided by the Staff:

The main objective of a resettlement action plan is to provide a plan for resettlement and rehabilitation of project affected persons so that their losses owing principally to the project are compensated and their standard of living improved or at least restored to the pre-project levels. In this regard, the income earnings potential of individuals is restored and their livelihoods sustained. The consultant will be expected to undertake resettlement action plans for each sub-project of NaMSIP, and to prepare independent RAP reports.

Social and environmental Impact Assessment Survey & Attend key and project stakeholder workshops
 Census for PAPs, land and structures & Prepare valuation matrix & valuation criteria
 Draft valuation and socio economic chapters & Prepare TOR for the study, Identify environmental impacts &
 Identify PAPs and their relocations sites, Prepare draft and final reports
 Conduct stakeholder participation & Prepare advertisement for public consultations

education

January 2013 – November 2016:

Diploma in Project Management

September 2008 –April 2012:
 University

Bachelor of Environmental Science - Kenyatta

2004-2007:

Hekima Girls High School- O Levels

1996-2003:

Nairobi Primary School – KCPE

Employment Record

Period	Employer, Title	Country	Summary of Activities Performed Relevant to the Assignment
June 2014 to Date	Eco Plan Management Ltd, Associate Environmental Expert	KENYA	<ul style="list-style-type: none"> • Conducting site visits/ field survey • Writing Environmental and Social Impact Assessment (EIA/ESIA) reports • Writing Environmental Audit (EA) reports • Carrying out Environmental and Social Impact Assessment • Submission of reports to NEMA and follow-up of approvals and license • Data collection, compilation and analysis • Conduct meetings with various project stakeholder's and interested parties • Carry out public participation • Preparation of tender documents and request for proposal (RFP) • Preparation of progress reports • Training of interns
February 2014 – June 2014:	Hiagro (EA) Services-Intern	KENYA	<ul style="list-style-type: none"> • Writing Environmental and Social Impact Assessment (EIA/ESIA) reports • Writing Environmental Audit (EA) reports • Carrying out Environmental and Social Impact Assessment • Submission of reports to NEMA • Data collection, compilation and analysis

May 2011- August 2011	Kariobangi Sewage and Treatment Plant (Environmental Audit and industrial Pollution Department) Position: Attachment	KENYA	<ul style="list-style-type: none"> • Writing daily reports on work done • Analysis of laboratory reports • Monitoring of machines • Measuring water inflow • Controlling waste water inflow
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Languages

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Swahili	Good	Good	Good
Kikuyu	Fair	Fair	Fair

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.



Full Name of Authorized Representative: **MWIHAKI MATHU**



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
**CERTIFICATE OF REGISTRATION AS AN ENVIRONMENTAL IMPACT ASSESSMENT/
AUDIT EXPERT**

Certificate No: NEMA/EIA/RC/496

Application Reference No: NEMA/EIA/ER/1665

This is to certify M/s **MWIHAKI MATHU**

of

P.O BOX 68027-00200 NAIROBI

(Address) has been registered as an Environmental

Impact Assessment Expert in accordance with the provisions of the Environmental Management and

Coordination Act and is authorized to practice in the capacity of a Lead Expert/Associate Expert/Firm of

Experts (Type) **ASSOCIATE EXPERT**Expert Registration No: **7192**Issued Date : **8/26/2014**

Signature

(Seal)

Director-General
The National Environmental Management Authority

P. T. O.

ISO 9001 : 2008 Certified



2,000,266

Certificate of Membership

This is to certify that

Mwaihaki Muthu

is an Associate Member of Environment Institute of Kenya.

An institute founded in the year 2014 to extend and disseminate
Environmental knowledge and promote the
practical application for public good.

Chairman

Date

24/6/2015

This certificate remains property of Environment Institute of Kenya. Membership is subject to annual renewal



No. 116292



THE KENYA INSTITUTE OF MANAGEMENT

This is to certify that

Mwihaki Mathu

*having completed the prescribed course of study and
passed the required examinations
has been awarded*

**Diploma in Management -
Project Management Option**

Given under the Common Seal of

THE KENYA INSTITUTE OF MANAGEMENT

This 13th *day of* September *Year* 2016

Director, KIM School of Management

Executive Director CEO, KIM



Student Admission Number DCM-PM /NTRB/53792



KENYATTA UNIVERSITY

This is to certify that

Mwihaki Mathu

*having satisfied all the requirements was
awarded the Degree of*

**BACHELOR OF ENVIRONMENTAL SCIENCE
SECOND CLASS (LOWER DIVISION)**

*at a congregation held at this University
on the Fourteenth Day of December
in the Year*

Two Thousand and Twelve

Dugenda

Vice Chancellor



Registrar (Academic)

Certificate Number

201223800276

This certificate is issued without any erasures or alterations. This is a secure document using special papers and inks.
Hold to the light to verify that the "KENYATTA UNIVERSITY" watermark can be seen through the paper.

Appendix B: Curricula Vitae

B.1 Vivian Wacheke Njogu

Proposed Position:	Social and Environmental technical assistant
Name of Firm:	Eco Plan Management Ltd
Profession:	Environmental & Social Expert
Date of Birth (MM/DD/YYYY):	17.11.1990
Years with Firm/Entity:	Since 2014
Nationality:	Kenyan
Membership in Professional Societies:	National Environmental Management Authority (NEMA) Reg. No. 8263

Key Qualifications

A Bachelor of Science graduate in Environmental Conservation and Natural Resources Management from the University of Nairobi. Vivian is registered as an Environmental Impact Assessment (EIA) Expert by the National Environmental Management Authority with Registration no. 8263.

Ms. Njogu has 3 years' work experience in private environmental firms. This experience has provided her to work in main areas of environmental, social and health & safety of various projects. She is well versed in social data collection and stakeholder engagement and was involved in the preparation of Resettlement Action Plan (RAP) report for the Standard gauge Railway (SGR) Phase 2A from Nairobi-Naivasha (2016-2017). She has worked as a Technical Assistant Supervisor for the RAP report for improvement of 15 markets within the Nairobi Metropolitan Region (NaMSIP) in 2016. Has a strong working relationship with her colleagues and is a valuable team-player.

Education

2011-2015: BSc. Environmental Conservation & Natural Resources Management,
University of Nairobi, Kenya

Employment Record

Period	Employer, Title	Country	Summary of Activities Performed Relevant to the Assignment
September 2015-present	Eco Plan Management Limited, Intern	Kenya	<ul style="list-style-type: none"> Resettlement Action Plan (RAP) for the Nairobi– Naivasha Standard Gauge Railway line (SGR) Resettlement Action Plan (RAP) for improvement of 15 markets under the NaMSIP project- September 2016 to December 2016
April 2014-August 2014	Eco Plan Management Limited, EIA expert	Kenya	<ul style="list-style-type: none"> Environmental Audits for Ashnil Hotels- Mara Camp, Samburu Camp and Aruba Lodge Environmental Audit for National Social Security Fund (NSSF) Environmental Audit for Jamii Telecommunications Limited Fibre Optic Cable Environmental and Impact Assessment for the proposed construction of 12 Godowns in Embakasi Environmental and Impact Assessment for the proposed construction of serviced apartments and gym and health fitness centre for CPS in Lavington

Languages

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Swahili	Excellent	Excellent	Excellent
French	Fair	Fair	Fair

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.



Date: 8TH October, 2017

Full name of authorized representative:

VIVIAN WACHEKE NJOGU

UNIVERSITY OF NAIROBI



This is to certify that

Divian Wacheke Njogu

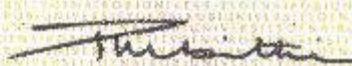
having satisfied the requirements
for the award of the degree of the

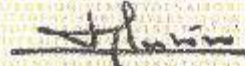
**BACHELOR OF SCIENCE
(IN ENVIRONMENTAL CONSERVATION
AND NATURAL RESOURCES MANAGEMENT)**

Second Class Honours (Upper Division)

was admitted to the degree
at a Congregation held at
this University on the

**Fourth Day of September in the Year
2015**


VICE-CHANCELLOR


DEPUTY VICE-CHANCELLOR (ACADEMIC AFFAIRS)

4929

FORM 7

(r.14(4))



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
CERTIFICATE OF REGISTRATION AS AN ENVIRONMENTAL IMPACT ASSESSMENT/
AUDIT EXPERT

Certificate No: NEMA/EIA/RC/1446

Application Reference No: NEMA/EIA/ER/3545

This is to certify M/s. Vivian Wacheke Njogu

of

P.O. Box 355-00217, Limuru

(Address) has been registered as an Environmental

Impact Assessment Expert in accordance with the provisions of the Environmental Management and

Coordination Act and is authorized to practice in the capacity of a Lead Expert/Associate Expert/Firm of

Experts (Type) Associate Expert

Expert Registration No: 8263

Issued Date : 5/4/2016

Signature
(Seal)

Director-General
The National Environmental Management Authority

P. I. O.



Director General

F. Stakeholder meeting minutes and attendance sheets during scoping phase (First public meetings)

THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR OFFICES AT VARIOUS DATES

ITEM	OFFICE AND NAME OFGOK OFFICIAL	COMMENTS	DATE
1.	Deputy County Commissioner Mbeere South Sub-County	<p>Consultant to do a formal letter of invite for the various stakeholders/ Heads of Departments</p> <p>She welcomed the idea of KenGen having a Solar project in the area and hoped that the people in the area will benefit from the project. She said the communities expectations were employment (skilled and non skilled) and power connections to their home. She assured the consultant that she will provide security if required and will provide support to ensure smooth implementation of the project.</p> <p>The consultant handed her with a brochure summarizing the project.</p>	11/09/17
2.	Mavuria Location Chief	<p>The chief welcomed the consultant team and agreed to mobilize the various community groups for planned consultation meeting on 13th September 2017.</p> <p>He had an A0size map (bought from survey of Kenya) that showed the detailed physical features of the project site and the surrounding areas administrative areas.</p> <p>He explained the land use in the project area and the use of the dirty road by the project site. We asked if a water pound could be built in another place and he said he has no objections.</p>	11/09/17
3.	KWS- MweaGame Reserve	<p>The warden advised that part of Kamburu dam is in the Game reserve that is a protected site. The boundaries of the protected area are not clearly marketed making it difficult for the fisherfolk to know the boundaries.</p>	12/09/17

		<p>She noted that elephants usually cross to the project side when water levels of the dam are low in the dry season.</p> <p>A questionnaire and brochure were handed to her.</p> <p>The management plan is outdated. A updated is planned but financing is needed. The reserve will be handed over to Embu county and it may delay this process.</p> <p>She returned the questionnaire during the sub county Heads of department meeting on 14th September 2017.</p>	
4.	NEMA- -Embu County	<p>She advised on submission process of the TOR and Scoping report, ESIA report and disclosure of the ESIA.</p> <p>She advised that consultations should be held by the consultant team and it should endeavour to reach all affected and interested groups including all county and sub county relevant representatives from both counties. She suggested that Machakos county is consulted when the works in the substation and OHL are defined.</p> <p>A public hearing is not likely to be requested after we undertake the three consultation meetings and submit the ESIA, as long as the consultation reaches the wide stakeholder groups and no concerns are raised to NEMA. It will be defined by NEMA after receipt of public comments.</p> <p>She confirmed that the meetings we were undertaking during the scoping report will count as one of the three mandatory consultation meetings.</p> <p>There is another solar plant planned in Kenya (a group of five assets) but it is very far (about 5 hours driving). Therefore, cumulative impact is not a concern. (Eco plan to follow up with NEMA the name of the solar plant).</p>	

		<p>A brochure was given to her summarizing the project.</p> <p>A questionnaire was not given to her since her office will be involved in the approval process of the project ESIA.</p>	
5.	Kenya forest Service- Embu county	<p>The head of forest was in a meeting and could not be reached for comment</p> <p>Eco Plan to revisit a new appointment date</p>	
6.	Culture-Embu county	<p>The head of culture was in a meeting out of town.</p> <p>The consultant interviewed the Head of Gender:</p> <p>Mbeere people are the indigenous group at the project site</p> <p>In the area surrounding the project site along Thiba river, we will find the kikuyus, who carry out irrigation farming.</p> <p>Mbeere grow Miraa stimulant plant. This plant is sold in Nairobi.</p> <p>Embu communities carry out miraa farming along the river, while the kambas fished at the dam. Part of the Kamburu dam is situated in Machakos county.</p>	
7.	County Commissioner - EMBU COUNTY-	<p>She requested the project proponent to consider the locals for employment.</p> <p>She assured the consultant that she will provide security if the project required it and will provide support to ensure smooth implementation of the project.</p>	12/09/17

MEETING HELD AT SUB COUNTY OFFICES WITH SUB COUNTY DEPARTMENT HEADS' FOR ESIA SCOPING VISIT FOR 7 FOLKS SOLAR PLANT ON 14TH SEPTEMBER 2017

PRESENT

- | | |
|-------------------------|---------------------------|
| 1. John Mbaka | Member of County Assembly |
| 2. Dennis M. Nguyu | Ward Administrator |
| 3. Michael Njeru | Mavuria Area Chief |
| 4. Stephen m. Ndunge | Kenya Forestry |
| 5. Maureen Elegwa | Kenya Wild life Service |
| 6. Embu County Director | NEMA |
| 7. John Nguyo | Metrological |
| 8. Daniel K. Wambua | Fisheries Department |
| 9. James N.Njoroge | Water Department |
| 10. Paul Kiige | Agriculture Department |
| 11. Johnson Njeru | KenGen Engineer |
| 12. Terrance Nduku | KenGen Communication |
| 13. Irene Keino | Eco Plan Management Ltd |
| 14. Richard Mong'are | Eco Plan Management Ltd |

ITEM	DESCRIPTION	Organization/Department
1	INTRODUCTION	
	<p>The meeting started by a word of prayer from one of the members present.</p> <p>All present introduced themselves</p>	
2	SITE AND PROJECT INFORMATION	
	<p>John Njeru gave a brief introduction of the project site; He stated that the project site is situated in a parcel of land owned by KenGen</p> <p>The project site measures 100 acres and lies in Mavuria ward which comprises Mavuria community.</p> <p>Small Office Block</p> <p>KenGen is proposing to construct an office at the site. Water and sanitation facilities will be provided on site. There is proposal is to have a pipe from the reservoir to the project site for cleaning of solar panels twice year ir as option 1 or use water tracks as option 2.</p> <p>Transmission line KenGen has two proposals either to</p>	KenGen

	<p>use the existing transmission line or construct another transmission line to transmit power.</p> <p>Previous Projects planned for the project site</p> <p>The proposed solar project will not interfere with previously planned projects like the fish pond. These projects were planned inc consultations with the local community. It is therefore proposed that the solar plant will be fenced off to avoid wild animals tamper with the solar panels. The land next to the dam will not be used by the proposed solar plant; therefore this project will not interfere with the proposed water ponds and bee keeping for the community.</p> <p>The bee keeping at the project site will be moved to the land next to the dam to ensure livelihood restoration for the community.</p> <p>Water Supply and Fish Pods for the community</p> <p>KenGen will continue to implement its CSR projects and as well as construct water pans beyond the project site to be used for watering community livestock.</p> <p>KenGen proposed to implement the fish pod project closer to the beach area.</p> <p>The community will continue accessing the beach of the dam and carry out fishing. KenGen requested that the community to stop using the paths at the project site. It therefore requested that the community can access the dam by using the public road that borders the project site at one end.</p> <p>One of the members noted that there is need to describe the project design, project timelines and project benefits using a projector, A3 maps and a power point presentation. This engagement is necessary when the consultant is engaging the sub county heads of department.</p> <p>Land ownership of project site</p> <p>It was noted that KenGen did not have a written agreement with the community to the use of the land for grazing. The community confirmed having no claim to the land. It was explained that the community and KenGen had a mutual understanding that the land belongs to KenGen and they can use the land to benefit the community as it retained its biodiversity.</p> <p>KenGen has various CSR programs in embu county, Mbeere south as well as in meru and Machakos counties. These programs include education, afforestation, water</p>	
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	provision and control of catchment areas.	
3	BRIEF ON THE ESIA	
	<p>Irene Keino introduced the Consultant team and briefed the members on the Status of ESIA. She pointed out that the consultant team had a reconnaissance visit to the site in April 2017. The site for the solar plant was identified as the area near Mavuria measuring 100 acres.</p> <p>The ESIA is at its initial stage, hence the scoping visit to the area is necessary to collect baseline data which will be used to identify the groups and concerns raised the community about the project.</p>	Eco Plan & Mott Mac
	<p>Richard Mong'are took the members present through the ESIA process and explained the importance of consultation and public participation in ESIA process. The requirements for ESIA were also explained to the members as per EMCA 1999/2015 Act.</p> <p>He explained to the members that it is through the scoping process that the TOR of the project are developed and submitted to NEMA for approval. Upon NEMA approving the TOR it will give a go ahead to commence the full study for the project. It is through the scoping exercise that the identification of community groups, concerns raised and potential impacts of the proposed solar project are identified by the interested participants.</p> <p>The members were once again reminded that public consultation was a continuous process and the consultant team will return October –November 2017 to further conduct public consultations as well as hold a public baraza at the project site.</p> <p>Project brochures and ESIA questionnaires were circulated to all Heads of departments present. The Heads of departments were requested to respond to questionnaires that were circulated at the beginning of the meeting. the department Heads were requested to respond to the two questions:</p> <p>Q1. What is your main area of interest with regards to the proposed project?</p> <p>Q2. Are there any concerns you would like to raise, at this stage, regarding the proposed project?</p>	Eco Plan
4	ISSUES RAISED BY FISHERIES DEPARTMENT	
	<p>Daniel Wambua wanted to know whether the fishermen will be provided with access to the beach.</p> <p>Answer: They will use the road at the boundary of the project site.</p> <p>The road is in a very bad condition, will it be upgraded?</p>	Daniel K. Wambua

	<p>Answer: KenGen will consider upgrading the access roads bounding the project site.</p> <p>The dam area leading towards the game reserve (Mwea National Reserve) is a protected area. However the boundaries are not marketed. Resulting from this, there is conflict between Kenya Wildlife service staff (KWS) and the fishermen. He stated that he hopes this project will not increase this conflict.</p> <p>He stated that the fisherfolk use the paths to access the beach because the road is not accessible and the paths provide a short-cut to the beach area. He added that KenGen is required to indentify alternative routes for them.</p> <p>Answer: The project area will not be close to the reservoir hence the fisherfolk's activities will not be interfered with on implementation of the project.. The project will either have to construct a water pipe from the reservoir to the project site as first option or use water tracks to collect water to the project site from the reservoir. The panels will be cleaned at least twice in a year which is minimal impact.</p>	
5	ISSUES RAISED BY FOREST DEPARTMENT	
	<p>It is a legal requirement that at least 10% of forest cover is not destroyed by a project. The implementation of this project will clear a sizable amount of forest cover.</p> <p>What programs that KenGen have to afforestation and protection of the forest cover.</p> <p>He noted that KenGen should conduct a tree species count to indentify the number of trees that will be disturbed.</p> <p>Answer: KenGen has afforestation programs that will be used to militate against the cutting down of trees.</p>	Stephen M.Ndunge
	Issues raised by WATER DEPARTMENT	
	<p>The water connections in Mavuria area do not service the community adequately.</p> <p>KenGen needs to have water connection for staff who will work at site and also provide treated water to the surrounding community.</p> <p>KenGen to provide Water pans/dams for the community to water their livestock.</p> <p>KenGen to consider supplying solar power to the community as previous power projects have always left out the community. Most homes and schools are not connected to the power grid and yet power is generated in the county to serve other parts of the county.</p>	James N.Njoroge
6	ISSUES RAISED BY METROLOGICAL DEPARTMENT	

	<p>He thanked the consultant team for inviting them to the meeting. He advised that the Metrological Offices are situated in Embu town.</p> <p>He noted that the project is good for this county and for the local community. He added that the sun was available all time round in one calendar year and the cloud cover was minimal. Therefore solar generation at the project site is a viable project. He added that solar generation was friendly to the environment. It doesn't produce much waste as compared to other power generation projects which are cost effective and have impacts on the environment. He encouraged and welcomed KenGen to continue with the implementation of this project.</p> <p>He requested KenGen to connect solar power to the surrounding community to reduce charcoal burning and reduce green house gases. Answer: KenGen conducts weather conditions of land parcels it owns and the project consultant K&M advisers had conducted a solar generation assessment and found out that the project is viable.</p>	John Nguyo
7	ISSUES RAISED BY AGRICULTURE DEPARTMENT	
	<p>He thanked Kegnen for providing trees to the community in the past. He noted that the project was benefital to the community.</p> <p>Benefits of a solar Plant There is no known emission to impact on crops.</p> <p>The destruction of vegetation cover, has influenced rainfall patterns to change in the area. This is further enhanced by the community participating in burying trees to produce charcoal for sell or use to heat hoses. The project impacts are likely to impact the area and create micro climates affecting the planting and raining patterns of the area. The project is likely to take up 100 acres and therefore increased impacts. He asked KenGen on what alternatives it in order to minimize climate impacts? He inquired if the project site will be fenced? He inquired if KenGen will continue to allow the community to utilize the land for livestock grazing, bee keeping and fishing from the dam?</p> <p>Did KenGen buy this land the community? Have the communities been consulted? Can the client provide other projects that will ensure livelihood</p>	Paul Kiige- In charge of agriculture mbeere south

	<p>restoration is continued? The community currently uses the project site for bee keeping, livestock, and water use.</p> <p>KenGen stated that it supplies tree seedlings to the communities to continue planting trees at the project site and improve on climate of the area.</p> <p>The remainder of the project site, KeGen will reafforest to improve the tree cover and improve the climate.</p>	
8	ISSUES RAISED BY THE Roads DEPARTMENT	
	<p>He requested KenGen to carefully consider employing both the unskilled and skilled from the community.</p> <p>He stated that in order for the community to have a buy in of the project, it would be wise if KenGen connected their home with solar power.</p> <p>He observed that during the building of Kamburu dam in the 70s, all power was later transmitted to Nairobi and other regions of the county, whilst the local communities were never connected with power.</p> <p>He noted that the local chief's office had no power revealing the situation at the community level as also not having connected power.</p> <p>Answer: KenGen to collaborate with Ketraco/KPLC to in the view of seeking options of connecting power to the local community..</p>	Public works
9.	EMBU COUNTY- NEMA	
	<p>She advised that that the ESIA report should have a detailed record of the project site, alternative sites and alternative generation designs and project information among others. The ESIA report should include all project impacts, project activities at planning, operation and decommissioning. The report to detail the waste expected, E- waste disposal.</p> <p>The socioeconomic chapter should capture all the stakeholder consultations and survey data collected from the field.</p> <p>The TOR will be submitted in Nairobi NEMA HQs.</p> <p>The consultant should conduct detailed public consultations and ensure all concerns and issues are captured at the scoping stage. In the event that all concerns are not captured then, NEMA will require another public baraza to engage with the community and all affected and interested groups.</p> <p>She commented the consultant team for the good work they are doing in scoping exercise and trying to reach out to as many people as possible affected.</p>	NEMA Director
10	COMMENTS FROM THE MCA	

	<p>He welcomed the team and thanked KenGen for bringing the proposed project to his area.</p> <p>He stated that the local community should be given first priority for employment of both skilled and unskilled.</p> <p>He requested KenGen to endevour to connect power to the local community and the schools..</p> <p>He said that he will support KenGen and the consultant in ensuring the project implementation runs smoothly.</p>	Political representative of the area (MCA) Member of county Assembly
11	COMMENTS FROM WARD ADMINISTRATOR	Political representative of the area
	<p>He thanked the consultant and KenGen on having reached out to them.</p> <p>He requested KenGen to assist the community to be powered with electricity.</p> <p>He noted that his office was open and he will accord the consultant all the support they required.</p>	
12	ANY OTHER BUSINESS	
	There was no other business	info
12	DATE OF NEXT CONSULTATION MEETING	
	<p>The next consultation meeting will be communicated through letter of invitations which will be sent to various sub county departments.</p> <p>The meeting was closed through word of prayer from one of the members.</p> <p>The consultant thanked the heads of department for their input.</p>	

**MEETING HELD AT MAVURIA CHIEFS CAMP WITH THE COMMUNITY
AND GROUPS FOR ESIA SCOPING VISIT FOR 7 FOLKS SOLAR PLANT ON
13TH SEPTEMBER 2017**

PRESENT

1. Michael N. Njeru	Senior Chief Mavuria Location
2. Antony Munyiri	Area Assistance Chief Kombo Munyiri Sublocation
3. Njue Jennifer	Teacher
4. Crispin N,Kariuki	Quary Mnagement
5. Joseph Maina	AP SGT Security
6. Petrerson Sameck	Teacher
7. Dominic M,Kaminja	Church Leader
8. Michael Mutu	Member of Community
9. Amos Mbutu	Environmental Officer- Kengen
10. Jane N. Muchunga	Church Leader
11. Samuel Mutina Joel	EX DAE.O
12. Peter Ngari	Member of Community
13. Nancy Njeri	Member of Community
14. Racheal Ndava	Member of Community
15. Tabitha G. Githaiga	Agriculture
16. Edith K. Mucungu	Business
17. Godfrey Munene	Ministry of Agricure
18. Robert N. Mugo	Sub Area
19. Edward N. Ngaga	Fisheries Chairman.
20. Teresse Nduku	Communication Officer
21. Johnson Njeru	KenGen Engineer
22. Teresse Nduku	KenGen communication
23. Aline Martins	Mott Mac Donald
24. Irene Keino	Eco Plan Management Ltd
25. Richard Mong'are	Eco Plan Management Ltd

ITEM	DESCRIPTION	ORGANIZATION /GROUP
1	INTRODUCTIONS	
	<p>The meeting started by a word of prayer from one of the members of the public.</p> <p>All present introduced themselves</p> <p>The area Chief thanked and welcomed the public, KenGen team and the consultant to the meeting. He gave thanks to Kengen and Consultant team for requesting for ESIA consultation meeting through his office.</p> <p>Jonson Njeru from KenGen- he started by thanking the area chief and the community for attending the meeting. He gave a brief introduction of the project, its location, source of funding, its capacity and materials to be used. He said that the site is on the Left side of Kamburu Dam and it is neighbored by Karuki and Machanga village. He also identified the various sources of power generation for Kengen (Water, steam, Diesel, wind and Solar). The proposed solar project at Kamuru will be the first ever started by KenGen.</p> <p>Preliminary</p> <p>He introduced the ESIA consultant team to continue with the agenda of the meeting.</p> <p>Madam Irene introduced the two ESIA experts (Aline and Richard) and left Richard to explain to the public the ESIA process and its requirements.</p> <p>Richard Ogoti circulated brochures and questionnaires to all members present and took the members through the EIA process and the importance of consultation and public participation in EIA process. He also requested Aline Martin to introduce herself and share in the ESIA process.</p>	Info

	<p>Aline Martins stated that this was scoping visit for the ESIA Process where we get better understanding of the community that is affected by the project. It was preliminary review of the project and consultation is a continuous process. The team will come back on early October 2017 for ESIA data collection and consultation and late October 2017 for disclosure of ESIA /Making it public.</p>	
	<p>The Area Chief Mr. gave a brief history of the Kamburu power station which was constructed back in the year 1975 and noted that most of the activities which were happening during its construction went on without the public /community being consulted. He further noted to the public that things have changed and it is requirement by the government through NEMA that all persons likely to be affected by the project are consulted for their concerns. Public participation is important because whatever KenGen does concerning the Solar project will have an impact to the environment and the surrounding community hence the community is allowed to participate by giving their views on how the project will impact on them positively or negatively.</p> <p>He listed the benefits of KenGen to the community since it was constructed as follows.</p> <ul style="list-style-type: none"> • Access roads to farming areas by the Ministry of Agriculture .These roads are open to the community. • Bee keeping and livestock grazing in KenGen land <p>He asked the Public to be objective and open on their concerns for the proposed Solar project. Finally he requested the Members to divide themselves into groups of 10 members and response to the questions of the Questionnaire.</p>	
	<p>Q. Mr Samuel Mutina Joel wanted to know why the community was never consulted when Kamburu hydropower was installed by Ken-gen and also wanted to know the number of acres to be taken by the proposed Solar plant project. He also stated that he does not want to oppose to the project, but people needs to be compensated.</p>	

A. Amos Mbutu(Environmental Officer-KenGen)

stated that every member present need to appreciate the new constitution which gives the common man a right to be consulted for any undertaking. When Kamburu was being installed there were no such rights from the government and since then things have changed and that is why Ken - Gen ishaving a preliminary ESIA consultation for the proposed Solar plant.

Q. Mr Samuel Mutina Joel wanted also to know what happened to the fish pond project which they were promised on Ken Ken land and whether it is the same land they are going to use for the Solar panels.

A.Amos Mbutu (Environmental Officer-KenGen)

The solar plant will take a portion of KenGen land (100 acres). The area for the fish will be near to Kamburu Dam and it will not be affected by the Project. The proposed solar plant is not going to affect any other project inside KenGen Land.

Q. Peterson Sameck thanked the team for bringing the services to the community in form of the proposed project. He continued saying that the project is viable, it is a good project and none of the members can stand to say the project is not good. He however wanted to know whether the proposed project was having any connection with a previous meeting which was called for a proposed tree planting project which never took place and the community was invited for their comments?

A. Amos Mbutu (Environmental Officer-KenGen)

the project belonged to NGO called Global forestry and wanted to do agro forestry in the community land near the area but they did not agree with the community in some issues and they were scared but that did not mean they stopped the project and they will not come back. The idea of Agro forestry is still there.

Q. What will happen to the trees which are going to be cut

	<p>for the solar panels and the way leave for electrical lines?</p> <p>A. Amos Mbutu (Environmental Officer-KenGen)KenGen is not going to cut all trees on its land but a portion for the proposed Solar plant. KenGen is doing agro forestry along the boundary line and it is going to encourage the community to plant more trees on their land by providing them with seedlings to plant.</p> <p>Q. He noted that in the previous meeting held for other projects from KenGen, the surrounding communities were promised power connection to their homes and it did not happen and wanted an assurance from KenGen team that the local people's homes will be electrified.</p> <p>A. Amos Mbutu (Environmental Officer-KenGen) KenGen has CSR programmes which will take into consideration on the community needs and the communities need to list what need most in order of priority and send to KenGen for consideration.</p> <p>Q. The community was also promised water which has never happened. He demanded tangible evidence from KenGen that this will be done.</p> <p>Further he wanted to know how the proposed Solar plant is going to help the Mavuria people in terms of Electricity and employment.</p> <p>A. Amos Mbutu (Environmental Officer-KenGen)KenGen has CSR programmes which will ensure the community needs are met and what the communities need to list what need most in order of priority and send to KenGen for consideration.</p> <p>Q. He wanted to know why other areas are supplied with water by Ken Gen,the Mavuria people are left to suffer yet they are the same people who gave land.</p> <p>A. Mr. Teresse (Community Liasion Officer of KenGen) Ken-Gen is surrounded by three neighbours- Kitui,Embu and Mbeere and their resources are shared equally in</p>	
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	<p>turns by the surrounding communities</p> <p>Q. Richard and KenGen asked community members about the land use in the project site and what would be the compensation</p> <p>A. A water pound can be built somewhere else in replacement to the one they use in the Project site. Land would not be an issue given that the whole community would be interested. The project area is used as a short cut to access the reservoir for fishing. There is another access they can use and it is not an issue as they recognise the land is owned by KenGen.</p>	
	<p>Q. Name the communities surrounding the Project site</p> <p>A. Mbeere community, Kamba, Kikuyu and the Embu</p>	
	<p>Q. Richard asked what were the communities` main needs</p> <p>A.) waters for livestock; 2) a fish pound; 3) electricity; 4) road access to the school.</p>	
	<p>Q. The nearest market to the proposed project site.</p> <p>A. Machanga Market</p>	
	<p>Q. What measures will KenGen put in place in conserving the biodiversity of the proposed project site?</p> <p>A. Amos Mbutu (Environmental Officer-KenGen)</p> <p>To mitigate impacts on biodiversity, the site development plan will be implemented in a manner as to avoid felling any partially protected tree species (<i>Arovera, Acacia trees etc</i>).</p> <p>In case of special constraint to avoid a shadowing effect, felling will be tolerated.</p> <p>In terms of compensation, reforestation actions will be carried out along KenGen boundary line and in the Dam areas, taking into consideration the priorities of the local population.</p>	
	<p>Q. What measures will KenGen take to control soil erosion more especially during the construction period?</p> <p>A. Michael N. Njeru. KenGen is going to set up an erosion control measures of restricting machines to designated routes and ensure soil surface is stabilized after the project by having established plant cover</p>	
2	ANY OTHER BUSINESS	
	There was no other business	info

3	DATE OF NEXT CONSULTATION MEETING	
	<p>The next consultation meeting shall be communicated through the Senior Chief of the area and letter of invitations send to various groups and the community.</p> <p>The meeting was closed through word of prayer from one of the members.</p>	

CONSULTATION HELD AT MWEA
NATIONAL PARK ON 12th Sept 2017

Date

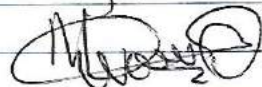
NAME

Contact

Sign

Michael

0720652779

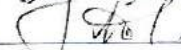


M. Njeru

JOHNSON NJERU 0722986622



Teresse Nduku 0722-426955



Maurice Elenga KWS - DIPW Mwea 0727859640



Chaoi Kenyeki Keneki 0777556837



ADINE LIGHTING

-



Irene Kemo Elo Plan 0727220740



Richard Oguti Elo Plan 0720721282





smep
fulfilling your dreams

Chariot Account - Tailored for the corporate body of the church.

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue:




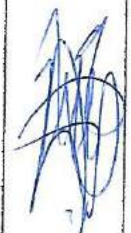


D.C.C MBEREE SOUTH

Date:

14/09/17

Page:



2

#	Name and Organisation	Position	ID number	Contact detail	Signature
	PAUL KILGE	Sub County Agricultural Officer (SCAO)	8720019	0721313353 daombeeres@gmail.com	
	Ministry of Agriculture				
	Isoken Mbatia	County Director of Meteorological Services (CDMS)	9810993	0712375127 johnanpyob7@gmail.com	
	Kenya Meteorological Dept.				
	Francis Nyaga Mutitu	Sub-County District Office	16028398	0702706380	
	Sub-County Office				
	Isoken Mbatia	MCA	11141789	0722690674	
	MCA				
	Francis M. Ngũgũ	WARD ADMIN	145582876	0721435882	
		MAVODPA			
	JOHNSON NJUGU	Project Lead	6036649	0722986622	
		KENGENA			

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue: D.C.C MKEKE SOUTH Date: 14/09/17 Page: 3

#	Name and Organisation	Position	ID number	Contact detail	Signature
	Sophie N Mutemi	County Director of Engineering	11424929	Emutemi nemo@gmail.com	
	M BEEBE G. GIGORGE	Attachee	32935676	0414276366	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET


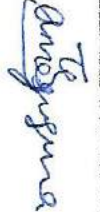


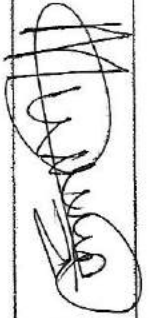

Venue:

Date:

Page:

D.C. Mbeere South

14/09/17

#	Name and Organisation	Position	ID number	Contact detail	Signature
	Stephen M. Ndung'u KFS	For Forester I	8207639	0701634835	
	James N. Njoroge WATER	DSCWO	0618893	0725645847	
	Daniel K. Nambata FISHERIES	SCFO	10968412	0724100038	
	Sideseo T. Hudson	ACC	10431578	0714540054	
	Muchai M. Njiru	SN CHIEF	9678956	0720652779	
	MURGEN KAGWIA	KUS WARDEN	94785886	0727857640	

Kuchama Ogoti MONTAGE

ECOPLAN

22-09-17

0720721282



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Okeri's Group (Mkwinda)

Venue:







Cherif's Camp (Mkwinda)

Date:

23/09/17

Page:

1

#	Name and Organisation	Position	ID number	Contact detail	Signature
1	JOHNISOM NJERU KEMGENI	PROJECT LEADER	6036649	0722986622	
2	Jessie. Nduku Mwiler	Comm. Officer		0722426455	
3	Irene Keino	ECO Plan Mgt Ltd	8130759	0727220740	
4	Isidore Mwenje	MOA-Mwenge	0698294	0720-917939	
	Robert N. Mugo	SUB-ALISA	0884374	0710655424	
	Richard N. Mwangi	N/Acacia FISHING BEHOLDING	10222549	0713488923	

Richard O. Mwangi









EOD PLAN

22191157





072072282



2

#	Name and Organisation	Position	ID number	Contact detail	Signature
	JANE H. MULLENDEN	CHURCH LEADER	3765086	0704028392	
	SAMUEL MARTIN, JOB	EX DCEO	0269487	0720445336	
	PETER MAKAI	ANALYST	3296277	0712781860	
	MICHAEL MUTU	CO-OP	329746	0725382432	
	MARCEL NJERI NJIEI	COMMUNITY SUB-AREA	13574251	0925442867	
	RACHEAL M. NDARA	COMMUNITY SUB-AREA	7035731	0711129503	
	WENDY G. GITHAIKA	AGRICULTURE	7726792	0726225803	
	EMILY K. MUCUNGU	BUSINESS	3764122	0723468691	

4

#	Name and Organisation	Position	ID number	Contact detail	Signature
	Dominic M. Kamirya Church leader	Key-leader	2474095	0727574040	
	MICHAEL MUTU		3229746	0725384432	
	Amos Mbutu	Co-Leader	11434315	0723511149	
	WILHE MARIKUS MOTT MPP/DOD/420	social specialist	USA	USA	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue:


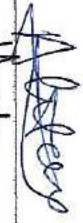
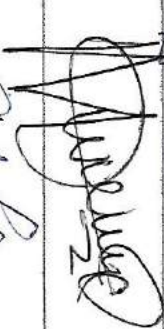


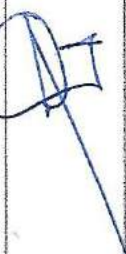
CHIC'S CARE (MURURAT)

Date:

13/09/17

Page:

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#	Name and Organisation	Position	ID number	Contact detail	Signature
	MUE JENNIFER	TEACHER	20750915	0720619845	
	ANTHONY N MUNDIRI	AREA ASS CHIEF KOMBOMUNDIRI SUB LOCATION	22894226	07227569430	
	Micah W. Njau	SN- CHIEF MURURAT LOC.	9878906	0720652229	
	CRISPIN N KARUKU	Security manager	3826838	0721641252	
	JOSEPH K-MAMING	AP SAT SECURITY	11812051	0724597039	
	PETERSON LAMUK	TEACHER	9678944	0721659952	

Sammuel Mathini

Business Chairman
Machungwa market.

0269487

0720445556

DANCY NJERI NJIRU

KOMBO-MUMIRI LEADERS

— 13574257

0725442867

SECRETARY

ACHEAL RIDANA

GICHARU SH.G

— 7035731

0711 129 503

RD



0 342
J. M. M.

Tabitha G. Githaiga
Njue Jennifer
EBITH MUCUNGA

Agriculture machangamurua.
S.C.C. Kengen.
BUSINESS KOMB-NUYIRI

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET



Venue:

Off Hg Camp (in Kuoera)

Date:


13/09/17

Page:

#	Name and Organisation	Position	ID number	Contact detail	Signature
	ESTHER MAMUK - INTERIOR	COUNTRY COMMISSIONER	10876425	0722735789	
	NEDHAM NJERU	CHIEF OF POLICE	4685389	0710266766	

G. Stakeholder meeting minutes and attendance sheets during ESIA phase (Second public meetings)

THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR OFFICES ON 02/10/2017

ITEM	OFFICE AND NAME OF GOK OFFICIAL	COMMENTS	DATE
	Mr. Japeth Mangigi Water Rights officer- WRMA Kerugoya	<p>Richard and Mwihaki- briefed Mr. Japeth on the proposed project and location details. A questionnaire was administered to the officer once the proposed project was clearly understood.</p> <p>Comments;</p> <ul style="list-style-type: none"> • Mr. Japeth enquired the source of water to be used during Construction and operation period. • He was also concerned about the quantity of water to be used per day. • The proponent should apply for a supplementary license from WRMA for abstraction of water . <p>Cosultants;</p> <p> Assured the water rights officer that the proponent would apply for the said license and state clearly the quantity of water to be used per day. The source of water would be Thiba dam.</p>	02/10/17
	Mr. Erastus Kibuka County Officer- Kenya Forest Services (KFS)	<p>Introduction to the proposed project by the consultant team. A questionnaire was administered.</p> <p>Comments;</p> <ul style="list-style-type: none"> • He requested to first consult with the other officers in the area and next to the project before filling the questionnaire. • The KFS should be involved in the process and the proponent and key stakeholders have first to understand forestry. • Requested to know what community projects KENGEN is involved in so that they can merge with the KFS community projects. • Stated that he would give a contact officer to assist in the process. • Stated that the questionnaire should be collected on Wednesday 04/10/2017. 	02/10/17

	Ms. Rehema Director of Gender and Culture	<p>The questionnaire had been issued on an earlier date to Mr. Nephath, but on collection Ms. Rehema gave the questionnaire. She also gave the number of the Mavuria ward administrator Mr. Dennis M. Nguyu who is based in the community and is the link between the government and community.</p> <p>Comments;</p> <ul style="list-style-type: none"> • Stated the need of the proponent to integrate the community in the project and preservation of historical sites if any are affected. 	02/10/17

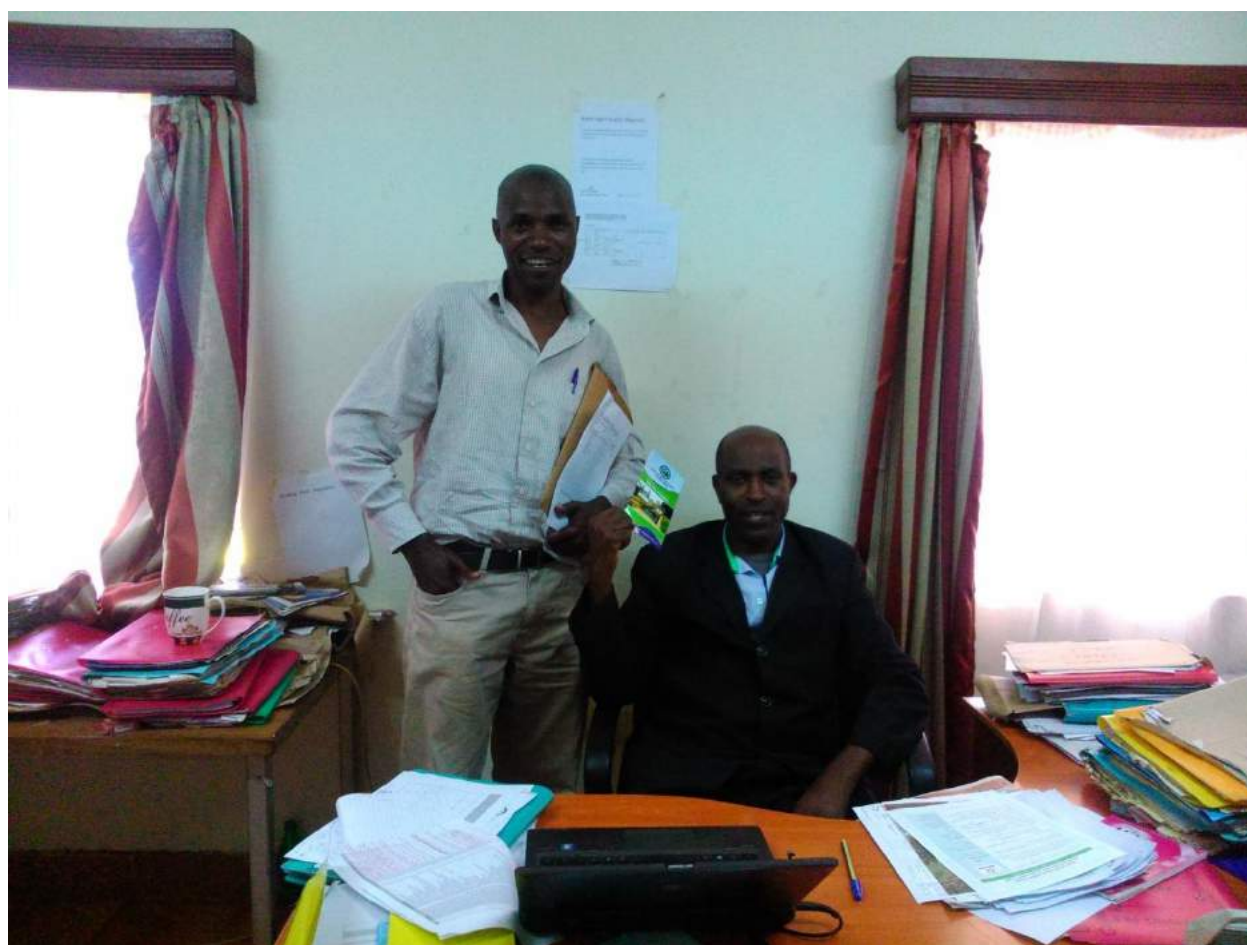


Figure 1 Consultations with WRMA officer



Figure 2 Meeting with Director of Culture Embu

THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR OFFICES ON 03/10/2017

ITEM	OFFICE AND NAME OFGOK OFFICIAL	COMMENTS	DATE
	Mr. Nahashon Physical Planning	<p>The consultants briefed Mr. Nahashon on the proposed project and location. He was issued with a questionnaire and filled it.</p> <p>Comments;</p> <ul style="list-style-type: none"> • Requested for a copy of the title deed as the said land is disputed by University of Nairobi, tadar and Embu county. <p>The consultants produced a copy of the title.</p> <p>Comments;</p> <ul style="list-style-type: none"> • Embraced the project. • Kengen should to consider improving the livelihoods of the community in the affected project area for example through building dispensaries, vocational training institutions to impart skills to the local community, planned markets. • Engaging the county throughout all the stages of the project especially mbeere south as they have really suffered since time immemorial and consider upgrading the feeder roads • A section of the project land should be considered for community facilities and social amenities. 	03/10/2017
	Mr. Koti Director of Agriculture Embu County	<p>Eco Plan Consultants briefed the director on the project and its relevance to ministry of Agriculture</p> <p>Comments;</p> <ul style="list-style-type: none"> • Enquired on the land ownership status of the proposed project site and referred us to the National Land Commission . • He stated that the Sub-County officer for agriculture had filled in the questionnaire during the stakeholder public consultation 	03/10/2017

		meeting and that was enough as he spoke on his behalf.	
	Mr. Japheth Kanata National Land Commission	<p>Eco Plan Consultants gave a brief on the project.</p> <p>Comments;</p> <ul style="list-style-type: none"> • Requested to see a copy of the land title deed before we proceed with the meeting. <p>A copy of the title deed was provided and after confirming the land owner the meeting proceeded and was issued with a questionnaire.</p> <p>Comments;</p> <ul style="list-style-type: none"> • The community should be considered socio-economically. • Adequate consultation should be carried out 	03/10/2017
	Ms. Agnes Department of occupational , safety and Health (DOSH)	<p>The consultants briefed Ms. Agnes on the proposed project and location.</p> <p>She was issued with a questionnaire and filled it. Her opinion was self-based and not on behalf of DOSH.</p> <p>Upon collection of the questionnaire Ms. Agnes was not present to give her comments.</p>	03/10/2017



Figure 3 Meeting with National Land Commission Representative Embu

**THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR
OFFICES AT VARIOUS DATES**

ITEM	OFFICE AND NAME OF GOK OFFICIAL	COMMENTS	DATE
	DCC/DCC1	<p>Briefed the DCC1 about the project</p> <p>The project is a 40/45 MW solar plant</p> <p>The community currently uses the land for bee kee keeping, livestock grazing and watering the livestock and fishing at the beach.</p> <p>DCC1 comments</p> <p>There is need to consult the community as early as possible</p> <p>Some of the issues that are likely to be raised are some community members may want to be consulted individually and others as a community.</p> <p>The DCC1 noted that the KIVAA community has access to Kamburu Dam to fish and water use, thus very important to consult the community.</p> <p>The KWS needs to be consulted too.</p> <p>There is need for the project to provide opportunities for employment for the KIVAA community during project construction and implementation.</p> <p>KenGen needs to establish a committee with the two local communities like a stakeholder committee, which will address both communities' concerns.</p> <p>MM/Ecoplan/Kengen to inform the community benefits</p> <p>The political class need to be invited for the baraza's (MCA, Ward administrator, MP, women rep, senator, governor). Inform local leaders.</p> <p>Let the community know that heavy equipments will be transported at certain hours of the day</p> <p>Hold a public baraza at KIVAA as well as Kiritiri</p> <p>Consult with the sub county heads of department.</p> <p>DCC1 gave us the KFS contact David Makosi-0734719087</p>	03/10/17

CHIEF KIVAA/ ASSISTANT CHIEF/ SUB COUNTY ADMNITRATOR	MEETING WITH THE AREA CHIEF OF KIVAA & OPINION LEADERS PRESENT Nicola Davis Irene Keino Johnson Njeru Chief KIVAA County Administration-James Ndungu Assistant Chief KIVAA-Onesmus Maingi Sub county Administrator KIVAA Community representatives included: Chairman of market-John Kilonzo Lands committee member-claiment NGO-environment-Benedette KIVAA market treasurer -Milka Ndungu Maendelao ya Wanawake-Jacinta Mutuku Community rep for KenGen-Catherine Wambui Business rep-tereseia Cultural centre rep-dominic KIVAA Market rep Simon Muya Artist & Jubilee political party rep-Joseph Mutisya Football club rep-shandrack Self help group Community rep Community rep-Isaac Mutua Business rep- simon mutual Community rep-Gladys Head man- Sabina Head man Kioko Head man-Jacob Lumumba Sub area-village head Sub area-village head-Agnes	3/10/2017
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	<p>Sub area-vilage Head-karisa Sub area-village head-mukita cholo Sub area-village head-Antony</p> <p>The chief introduced the community and members of his office and invited KeGen to introduce the consultants and agenda of the day</p> <p>Johnson gave a brief of the project, it timelines and viability of the project. MM/Ecoplan/KenGen sought the following:</p> <ul style="list-style-type: none"> a) The most appropriate dates for the community to hold a public baraza b) Venue c) Logistics (tents & chairs) <p>Nicola-introduced herself and title</p> <p>This is the very early stages of the ESIA, to present the project to you and note all concerns raised by the community in terms of location and it being a solar plant.</p> <p>The team needed to understand the community needs and the role the community can play to support the project during construction and implementation</p> <p>The team visited the site earlier in the year (april) to evaluate 4 sites and zeroed in on this one, because the terrain is flat, available land, the size is adequate and it is currently vacant</p> <p>Question: Are there concerns on the location of the project?</p> <p>Though the community has been allowed by KenGen to graze on it, water their goats/cows keep bee hives, harvest traditional medicine from certain tree species, fish at the dam even if the community know the land is owned by KenGen. In this regard the community needs to be consulted.</p> <p>There will be some impacts e.g the trees will need to be cleared.</p> <p>The team is working with an ecologist to consult with the community and understand the nature of trees which will be cleared and secondly the cultural expert will address cultural concerns. The team will indentify the project impacts from community consultations. The law allows for mitigation measures to address all impacts to either minimize, avoid or provide alternatives of the project components.</p> <p>Irene-gave a brief summary of the ESIA process and the need to</p>	
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	<p>consult all stakeholders both affected and interested. Informed them that both communities will be consulted at Kiritiri and KIVAA There will be a public baraza in November to consult more with the community on the project. The team will provide notices to allow the community plan to attend the baraza.</p> <p>Comments: Benedette-How will the community benefit from KenGen from this project especially our children from KIVAA area? This project will interfere with the environment as a large scale of tree cover will be cleared which will have a direct impact. Nicola- KenGen will need to commit to the ESMP in the ESIA to establish a tree replanting program. All impacts will be mitigated through consultations to reduce/avoid or propose alternatives.</p> <p>John M Kilonzo—KIVAA market chairman- we come from an area that generates power yet most of our houses are not connected with power. Can KenGen connect some houses with the solar power from this project? Can our community be considered for employment (skilled/unskilled) at the project site, even if we do not live in Kiritiri community? Johnson-opportunities for both communities will be provided at an equal rate 50/50. The community should contact the chief/community representatives for such opportunities. Nicola-the team needs to indentify the community needs e.g Machanga they stated water is a problem. What is your first priority community need? The project will impact on the community e.g limited access to the beach (kamburu dam)- KenGen to provide an alternative access road to the beach. If the KIVAA have available afforestation programs, kindly share with the team. Chief-the community has a program in place with KenGen and Kiritiri community of sharing employment opportunities that can be used. Nicola-happy that this structure exists. Irene-The projects that I have participated with World Bank have safeguard documents which will bind the contractor with</p>	
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	<p>the ESMP. So the community should not be worried as this project is based on IFC standards and this will follow the same. Johnson-Fishing will continue to be done at the dam. Kiritiri community also requested the same.</p> <p>What CSR projects will KenGen implement in the community? e.g power connection to households</p> <p>Can the ESIA/ESMP include the need of the community to connect power & water to households in the community? If KenGen can provide a small solar plant for the community that will be greatly be appreciated if it is difficult to transmit power from the 40MW solar plant.</p> <p>We know the project site. Will power be charged or it will be free?</p> <p>Johnson-KenGen has no mandate to transmit power. That role lies squarely with KPLC. KenGen's mandate is to generate power. KenGen can look into consulting Rural electrification to see if they can install a few transformers in community.</p> <p>Can Mott Macdonald install a small solar plant for the community?</p> <p>Johnson- Mott's role is to prepare the ESIA for the solar plant. Community rep stated that she seats at the committee that consults both communities and she will alert the community on any opportunities that will arise from the project construction and implementation.</p> <p>Who is the main contractor? In the community we have several skills and we require business opportunities from the project e.g. painter/manual labor etc</p> <p>Nicola-the contractor has not been identified. This will be done after budget is sourced. We shall consult further with you on aspects that we shall include in the labour plan. We shall also indentify the skills in the community. The management plan will spell out what percentage will go to the international firm and what percentage will be local.</p> <p>Most contractors usually bring their own people from Nairobi. How do we ensure the communities are included?</p> <p>Irene- the contractors contract will bind him to adhere to the</p>	
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		<p>ESMP which will spell out his obligations towards recruitment, sourcing of local materials etc</p> <p>Will the solar plant have any impacts on crops and humans?</p> <p>Nicola-The solar panels that are developed these days are so efficient and have no or minimal impacts. There is no glare and glen. The waste water from the panels will be treated.</p> <p>The chief called the meeting to an end and requested a member to pray for everyone.</p>	
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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION: MEETING MINUTES

Venue: Redeemed Gospel Church Machang'a

Time Started: 11.15hrs

Date: 04-10-17

Time Ended: 13.38hrs

General Meeting Details: **The Youth and Business Group**

Government Representation: __Senior chief (**Mr. Michael Njeru**) and Ward MCA Representative (**Peter Kariuki**)

Media present: N/A

Number of Participants (excluding Project Company and Team): _____ **Number of Men:** _____ **Language used:** __Kiswahili
English, Some Kimbeere_____

Get photos of meeting table, presentation being given and participants from various angles.

Information provided to stakeholders during the introduction

We are here to introduce and discuss the “Seven Forks Solar Power Project” project.

Kenya Electricity Generating Company Limited (KenGen) has identified a need to expand and diversify the generation portfolio of Kenya. Supported by consultants K&M Advisors, Mott MacDonald LLC USA and EcoPlan Management Limited (EcoPlan), KenGen plans to develop the “Seven Forks Solar Power Project” a solar photo voltaic (PV) power project with capacity of up to ___MW. It is intended the electricity generated by the Project will be fed into the national power grid.

The Seven Forks Solar Power Project will be developed by KenGen with support from private investment. For the feasibility works KenGen has secured funding from USTDA to undertake preliminary studies to assess the technical, economic, environmental and commercial feasibility of the Project and to prepare the EIA/ESIA. Mott MacDonald and Eco Plan has been commissioned to undertake an environmental and social impact assessment (“ESIA”) for the project in accordance with the requirements of the EIA/EA regulations 2003, pursuant to the Environmental Management and Coordination Act (EMCA) 1999 and EMCA (amendment) 2015 Act and in accordance with international lending guidelines as defined by the International Finance Corporation (IFC) Performance Standards (PSs) 2012.

We are interested in hearing opinions of key issues that need addressing and how they should be addressed in the detailed assessment which is taking place in October 2017. We also welcome any comments on the merits or drawbacks of the proposed sites and technical options. We will be recording comments and taking them into account in the ESIA.

We intend to have this meeting in English but if you feel more comfortable with Kiswahili, do let us know and Eco plan Management ltd can translate.

Recording

- Documenting the meeting is absolutely essential.
- As people enter the room, the welcoming team needs to ask the participants to sign the attendance sheets.
- The recorder needs to try and identify who spoke, the key point of the comment, clarification, who responded saying what. It is encouraged that this is done directly onto the computer to avoid having to transfer notes. Where not sure, leave a mark and ask others to fill in at end of meeting.

	Comments/Questions / Suggestions and made by who	Response given and by who
1.	Dr. Romanus. Tell us your daily programme/activities	Mr. Waking up at 05.00hrs, home surveillance and taking stock of belongs, Duty roster, taking break
2	Dr. Romanus asked the members to list community daily activities and the most affected members of the family groups.	<div>The members list the activities in chorus as follows;</div> <div><div>1. Fishing</div><div>2.Grazing Livestock</div><div>3. Fetching Water</div><div>4. Bees Keeping</div><div>5.Herbalist/Medicine</div></div> <div><div>The youth</div><div>Old men</div><div>women</div><div>10% youth and 90% old men</div><div>Oldmen</div></div>

3	Dr. Romanus asked one of the old men to volunteer and brief the meeting on site land ownership history.	<ul style="list-style-type: none">• Michael (Senior Chief). Stated that Kiguru clan is the original land owner. They lived, cultivated crop and kept livestock on the land.• Before 1969 Mapping of Seven forks Dam had already been done by the early missionaries and colonial masters in 1932.• In 1966-1969 Jackson Angaine(Minister for land and resettlement) declared through a Gazette notice Lower mbeere land as land under adjudication.• In 1972 every clan in Mbeere was given time to declare locational ownership.• In 1973 a construction company (East Africa Power Company) was contracted to construct Kamburu power station.• All these time land was surveyed without consultation of Members of the public(Kiguru clan) for Tana River Development• In 1978 land ownership transfer was done from East Africa Power Company to TARDA – Kenya in 1981 and lastly from Kenya power to KenGen-1986.
4	Dr. Romanus asked the members whether they were aware of the project and its location site.	<ul style="list-style-type: none">• All have knowledge of the project and its location.

5	Dr. Romanus. The proposed location site is currently used for what?	<p>Mr. Mwaniki</p> <ul style="list-style-type: none">• For keeping-Grazing livestock, farming, fishing, University of Nairobi doing research <p>Mr. Johnson Nyagah</p> <ul style="list-style-type: none">• Firewood, Bee keeping, fishing, water for livestock, hunting of wild animals like hare, sand harvesting, construction poles, charcoal burning and medicine trees
6	Dr. Romanus asked the members to list in the activities of the project site starting with the most common activity.	<p>The Members listed the following (starting with the most common activity of the site)</p> <ol style="list-style-type: none">1. Fishing2. Livestock grazing3. Community farming (irrigation-use water pan) near the site area.4. Fetching water.5. Bee keeping6. Herbs for traditional medicine man7. Firewood8. Charcoal burning9. Sand harvesting10. Construction poles

7	Seven Forks Solar Project	Chief (Michael) mentioned <i>October 2017</i>
	<p>Dr. Romanus asked the team members to identify community activities most directly affected by the proposed project and their proposed mitigation measures/solutions.</p>	<p>1. Fishing</p> <ul style="list-style-type: none"> The youth who are doing fishing in the Dams are mostly affected. <p>Solution</p> <ul style="list-style-type: none"> Create access to permanent River and Dam. Community to be assisted in constructing individual fish ponds Community to be provided with more fish species Community training and Empowerment on modern fish farming techniques. <p>Senior Chief (Michael) mentioned</p> <p>2. Livestock Grazing</p> <ul style="list-style-type: none"> Old men are mostly affected <p>Solution</p> <ul style="list-style-type: none"> Modern livestock farming-Zero Grazing Communal water pans at strategic points for livestock Training and sensitization. <p>Mr. Mwaniki (Disabled) mentioned</p> <p>3. Fetching water Women are most affected</p> <p style="text-align: right;">Solution</p> <ul style="list-style-type: none"> Communal water points Construction of water dams/Riparian reserve Community to be educated on rain water harvesting and storage. <p>4. Beekeeping Old Men 90% and Youth 10%</p> <ul style="list-style-type: none"> Sensitization and training on bee keeping Use of modern bee keeping methods <p>5. Medicine</p> <ul style="list-style-type: none"> Identification and preservation of trees for medicine Provide alternative e.g Dispensary/ hospital Uprooting and re planting trees with medicinal value.
	Public Consultation Meeting Minutes	

8	Dr. Romanus asked the members to list (KenGen's CSR) community priority areas.	MCA representative (Mr. Peter Kariuki) listed the following <ol style="list-style-type: none">1. Employment first priority too local for both skilled and no skilled jobs2. Electricity connections to the locals3. School upgrading or construction4. Construction of dispensaries to benefit the community5. Access roads improvement6. Recreation facilities for children like playing field7. Bursary for bright children
9		

Followup, documents provided, miscellaneous

Attendance list attached

[illegible]



**THE MINUTES OF THE MEETING HELD AT REDEEMED GOSPEL CHURCH ON
4TH OCTOBER 2017 AT 11.00 A.M**

PRESENT:

- 1) Johnson mwinyi nyagah- community health worker
- 2) Robert nyagah- chief
- 3) Mwaniki mbogo- secretary persons with disability network mbeere south
- 4) Loise muriuki- women group
- 5) Virginia njeri- representative of table banking mbeere south
- 6) Martha rokoine- representative of orphaned children
- 7) Zipporah warui- embu self help group
- 8) Rachael magoo- karuthi self help group
- 9) Lucy njeru- community health worker
- 10) Susan wangari- community health worker
- 11) Faith njeru- kaloki self help group
- 12) Peter kariuki- representative of area MCA Mavuria ward
- 13) Felix njeru- representative boda boda association
- 14) Munyiri- area assistant chief
- 15) Mwihaki Mathu- Eco Plan
- 16) Irene Keino- Eco Plan
- 17) Richard Ogoti- Eco Plan
- 18) Romanus Opiyo- Eco Plan

AGENDA

- Introduction of the consultants and the community members
- Project brief
- Focus group meetings for (gender, youth, livelihoods and small businesses)

MIN 01/2017 INTRODUCTION

The meeting commenced with prayers and later introduction of all the consultants present. This was followed by rules of engagement. The community agreed on the following rules of engagement;

- English and Kiswahili language to be used
- Phones to be on silent mode
- Active participation
- Respect for others participation
- Avoid unnecessary movement
- Raise your hand when you want to put across a point

MIN 02/2017 INTRODUCTION INTO THE PROJECT

The community was briefed about the proposed project and location by the consultation team and this was followed by the formation of the focus groups that is men and women and in the afternoon a combined session of livelihoods and small businesses.

MIN 03/2017 DISMISSAL

The meeting was dismissed at 6.00 P.M

A.O.B

The consultation team also meet with two NGOs based in the community that is ACCRI and CARITAS that implement community based projects.

The meeting was closed with prayers by a community member called Mr. Moses.

Name.....

Sign.....

Chairlady

Name.....

Sign.....

Secretary



Figure 4 The consultant team and the community during Focus group meeting introduction

**THE COMMENTS FROM THE FOCUS GROUP MEETINGS HELD AT REDEEMED
GOPEL CHURCH ON 04 /10/2017**

ITEM	OFFICE AND NAME OF NGO OFFICIAL	COMMENTS	DATE
	ACCRI (NGO)	<p>Project brief given by Sunday Abuje</p> <p>Comments;</p> <ul style="list-style-type: none"> • ACCRI is an Italian christian based NGO which sponsors projects around the world and has several parishes around the world and also in mbeere south who are beneficiaries. • Their main aim is to implement methodology that is funds given to the community based project sand to promote nutrition in primary schools, empower the community farmers and promote mechanisms to better their incomes • Current groupProjects; <ol style="list-style-type: none"> 1) Water Project- assist the groups in the community to purchase water tanks 2) Dairy goat and cow project 3) Soil and water conservation project 4) Poultry project <p>Challenges in the projects;</p> <ul style="list-style-type: none"> • Inadequate water • Lack of fodder and equipment • Water pans are not viable as the soils sips the water <p>Other projects include;</p> <ul style="list-style-type: none"> • Shamba programme- the main aim is to improve nutrition in the schools, currently six schools benefit, educate on shamba system and increase food production, introduction of porridge in schools which has improved performance. Give parents seeds to plant and in return give back to the school • Water Programme- gutter school 	04/10/2017

		<p>roofs, buy watertanks, repair water tanks, construction of small water pans, drip irrigation</p> <ul style="list-style-type: none"> Improving school kitchen and stores by installing rocket stoves which use less firewood. <p>The consultation team promised to work with such NGOs to assist them in implementation of future community based projects that will arise from the proposed project.</p>	
	CARITAS	<p>Sunday Abuje briefed on the project</p> <p>Comments; CARITAS is a socio-economic arm of the catholic diocese based in the community</p> <p>Projects of CARITAS in the community</p> <ol style="list-style-type: none"> 1) Saving and loaning programmes 2) Livestock programming- e.g placement of cows and goats 3) Intergrated rural development projects 4) Mainstreaming of the cross cutting issues- e.g gender, HIV/AIDS <p>Challenges of project implementation</p> <ul style="list-style-type: none"> Community rely on rain-fed agriculture Lack of proper training Government programmes e.g buying seeds from the government when they can acquire from their own seedbeds. <p>The consultation team promised to work with such NGOs to assist them in implementation of future community based projects that will arise from the proposed project.</p>	04/10/2017
	<p>Kenya Forest Service (KFS)</p> <p>Mr. Erastus</p>	Nicola collected the questionnaire	04/10/2017

	kibuka County Officer		
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Figure 5 Consultation with ACCRI AND CARITAS NGOs in Machanga

THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR OFFICES ON 05/10/2017

ITEM	OFFICE AND NAME OFGOK OFFICIAL	COMMENTS	DATE
	Mr. Francis Kawa KENGEN Gitaru Office	<p>The meeting kicked off with prayers from Teresia.</p> <p>Mr. Johnson(kengen) gave a brief on all project related work carried out so far and what is remaining.</p> <p>Ms. Nicola also stated the work that she has managed to do that is detailed data collection, completion of scoping reports, collection of baseline information, Public and stakeholder consultation, focus group meetings completion. Stated that there is positive acceptance of the project by the community and they requested to be involved in CSR.</p> <p>Mr.Amos (kengen) briefed on the meeting with the deputy embu governor and media was present. The issues that arose include;</p> <ul style="list-style-type: none"> • Kengen to partner with the community • Governor promised to support the project and incorporate CSR between community and project proponents • Electricity to be readily available and cost effective to the community • Crocodiles near the dam used to fetch water should be eliminated • Proposed additional 200ha by the county government to be offered if required <p>Mr. Francis (kengen) was impressed on how far the proposed project has come along and the work the consultants have undertaken. Matters CSR he stated that there is a committee SCC from kengen that deals with CSR activities within the community and that they have received the complaints on the crocodiles and water. Also stated that so far kengen has donated water pipes for the community</p>	05/10/17

		<p>to receive water from EWASCO and among many other projects . His suggestions were as follows;</p> <ul style="list-style-type: none"> • For CSR approach proponent to handle the infrastructure and then handover to the community • Abstract water from kamburu dam to be used in the proposed site during construction and operation period • Waste disposal of the panels, batteries should be addressed comprehensively in the report • Suggested that Kengen Chairman/director / C.E.O to be invited to the stakeholder roundtable meeting <p>The meeting closed at 10.10 a.m</p> <p>The consultant team visited the KENGEN tree nursery</p>	
	Mr. Gatimu Director of Agriculture Masinga	<p>Introduction to the proposed project by the consultant team. A questionnaire was administered and dully filled</p> <p>Comments;</p> <ul style="list-style-type: none"> • Concerned that during site clearing vegetation and fauna will be affected • Concerned that the grazers and bee keepers loss of income • Suggested planting of better quality grass along the contours on the strips of the solar panels, provision of generators to pump water, use alternative sources of water • Advises the community on what crops to grow 	05/10/17
	Mr. Sam Assistant ministry of water - Masinga	<p>Introduction to the proposed project by the consultant team. A questionnaire was administered and dully filled</p> <p>Comments;</p> <ul style="list-style-type: none"> • Masinga has 36 boreholes whereby they use solar to pump the water but initially used electricity and use approximately six panels to pump the water • Stated that project is efficient and should partner with other companies locally for success of the project. 	05/10/17



Figure 6 Meeting with Mr. Kawa Head of Operations KENGEN at the Gitaru Office



Figure 7KENGEN Gitaru Tree Nursery



Figure 8 Meeting with Director of Agriculture and Representative Ministry of Water Masinga

THE COMMENTS FROM THE GOK OFFICIALS WHO WERE VISITED IN THEIR OFFICES ON 12/10/2017

ITEM	OFFICE AND NAME OF GOK OFFICIAL	COMMENTS	DATE
	<p>Peter Munyao</p> <p>Head of Ground Operation- Kenya Civil Aviation Authority (KCAA)</p>	<p>Richard visited KCAA and had a meeting with Peter Munyao(Head of Ground operation), Captain Kingori and two students on attached in Captain Kingori's office. After the introduction and discussions of the details of the project, Captain Kingori and Mr. Munyao said that the project is good but prior to KCAA granting approval/disapproval of the proposed project, details of the proposed site are required which includes the following;</p> <ol style="list-style-type: none"> 1. the location of site(in WGS 84 coordinates degrees minutes seconds) at least from four corners of project site. 2. A regulatory fee of Ksh 40,000/ 3. height of the solar panels above ground level and 4. glare qualities. 	<p>12/10/2017</p>



Figure 9 Meeting with the Head of Ground Operations KCAA

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS
SOLAR PROJECT, KENYA**

PUBLIC CONSULTATION – MEETING MINUTE

Venue: REDEEMED GOSPEL CHURCH

Date: 04/10/2017

Time Started: 11.30 A.M

Time Ended: 1.30 P.M

General Meeting Details:

This focus group meeting was moderated by Ms. Irene and Ms. Mwhaki and were dealing with gender and in specific women. They were briefed on the project and requested to give their honest opinions and views on the questions asked.

Government Representation: none

Media present: none

Number of Participants (excluding Project Company and Team): All present

Number of women: 15

Language used: English, Kiswahili and Embu

Get photos of meeting table, presentation being given and participants from various angles.

Information provided to stakeholders during the introduction

We are here to introduce and discuss the “Seven Forks Solar Power Project” project.

Kenya Electricity Generating Company Limited (KenGen) has identified a need to expand and diversify the generation portfolio of Kenya. Supported by consultants K&M Advisors, Mott MacDonald LLC USA and EcoPlan Management Limited (EcoPlan), KenGen plans to develop the “Seven Forks Solar Power Project” a solar photo voltaic (PV) power project with capacity of up to ____MW. It is intended the electricity generated by the Project will be fed into the national power grid.

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	Comments/Questions / Suggestions and made by who	Response given and by who
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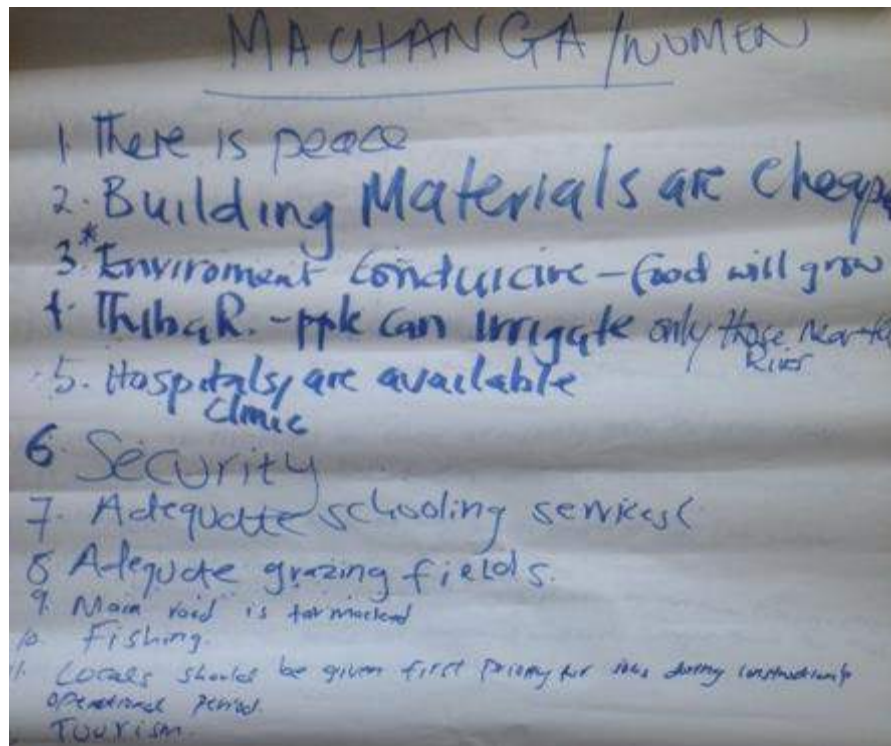
1.	<p>Why do you like living in Mavuria?</p> <p>Moderator- Irene and Mwihaki</p>	<ul style="list-style-type: none"> • There is peace • Building materials are cheaper • Environment conducive for food to grow • Hospitals/ clinic are available • Security • Adequate schooling services • Adequate grazing fields • Main access road is tarmacked • Fishing • Tourism • Locals to be given first priority for jobs during construction
2	<p>Why don't you like about Mavuria?</p> <p>Moderator- Irene and Mwihaki</p>	<ul style="list-style-type: none"> • Inadequate water supply • Inadequate electricity supply • Lack of medicines and doctors in the local hospitals • Feeder roads are not well maintained • Scarcity of areas to acquire wood • Kengen restricted the locals from accessing/ farming the land on the proposed project site • Grazing is restricted in some areas • No benefits to the locals during projects e.g jobs, electricity connections • Miraa and alcohol has rendered their men unproductive, dropout of school and loss of employment

3	Work activities in the community for both male and female	<ul style="list-style-type: none">• Fetching water and firewood- female- morning and afternoon• Farming- male and female- whole day• Milking- female- morning and afternoon• Cooking- female- once to thrice a day• Grazing- male and female- throughout the day• Caring for the children- female- throughout the day• Going to church- male and female- Sundays• Fellowship- male and female- daily• Fishing- male- daily• House construction- male- during the day• Chill at the centre- male- daily• Eating miraa- male- daily• Looking for school fees - male and female- daily• House chores- Female- throughout the day
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4	Resources and Benefits (access and control) <ul style="list-style-type: none"> Land Trees Labour Time Capital Traditional Knowledge Land sale Dowry negotiation Circumcision Household chores Grinding Livestock Water Collection Education Equipment Credit Table banking (chama) 	<u>ACCESS</u> <u>CONTROL</u> Male And Female Male Female Male Male And Female Male And Female Male And Female Male And Female Male Male And Female Male And Female Male Male Male Male Male Male Male Female Female Female Female Male And Female Male And Female Male And Female Male And Female Male Male And Female Male And Female Female Female Male And Female Male And Female Female
5	Jobs and Skill Development present in the community	<ul style="list-style-type: none"> Farmer Fisher Miner Administration clerk Driver Waiter Cleaner Plumber Security guard Electrician Engineer Construction worker Painter IT Worker Accountant

Projects the community have requested from KENGEN

- Water tanks/ pump water from the dam
- Electricity
- Fish pond project to continue
- Access to transact business in the project site during construction and operational period for example cooking for the construction workers
- Construct community shops (2-3) with subsidized products.
- Locals to be given first priority for jobs during construction and operational period
- Project materials to be bought locally

PHOTOS OF THE FLIP CHART FROM THE GENDER/ WOMEN FOCUS GROUP**Figure 1 Advantages of living in Mavuria**

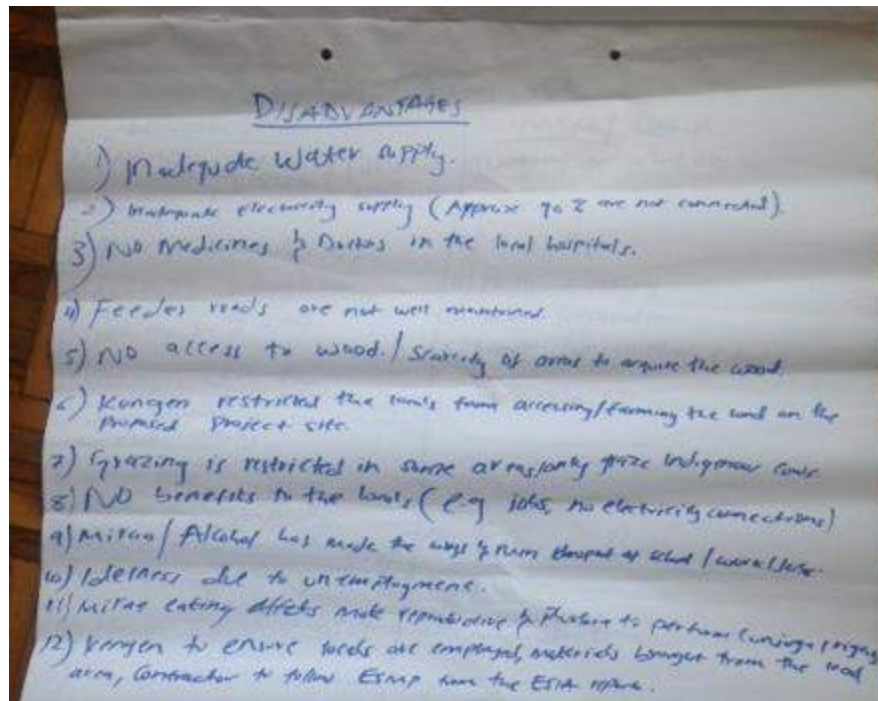


Figure 2 Disadvantages of living in Mavuria

Activities Carried out		men / women
men / girls		
1) fetching water morning / afternoon	firewood afternoon	1) looking for school fees
2) Farming / wooding whole day		2) fencing
3) flock chores - Throughout the day		3) grazing
4) Milking - morning & evening		4) Bush clearing
5) Cooking - 1-3 a day		5) farm preparation
6) Grazing - Whole day		6) house construction (w)
7) work. Looking for school minding the kids - daily		
8) Harvest crops		
9) Going to church - Sunday		
10) Fellowship daily (mostly men & boys)		
MEN / BOYS		
1) Fishing - Daily (Sunday & night)		
2) House construction (Permanent away - day time)		
3) Chill at the centre - Day & night		
Eating Miraa - Daily		

Figure 3 Work activities and time activities are carried out

Resource	Resources & Benefits	
	Access	Control
Land -	M/F ⁺	Male
Trees -	Female	Male
Water -	equally M/F	both
Time -	both	both
Capital -	M/F	both
Traditional Knowledge	M/F	both
Land sale -	Money, male.	male
Downy Negotiation	male	male
Circumcision (Initiation in adulthood)	male	male
Household Chores	Female	Female
Grinding	Female	Female
Livestock	M/F	M/F
Water collection	M/F	M/F
Education	M/F	M/F
Equipment	Female	Female
Debt	M/F	M/F
Male hunting harmful	Female	M/F

Figure 4 Resoures found in the community and who can access it and control it

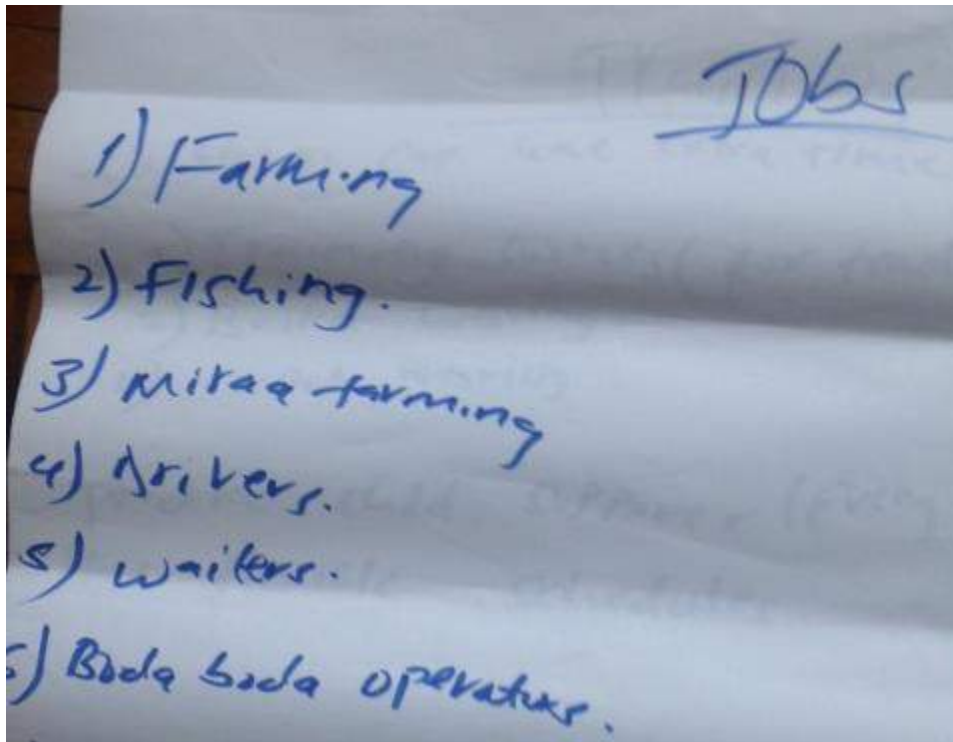


Figure 5 job and skill development found within the community

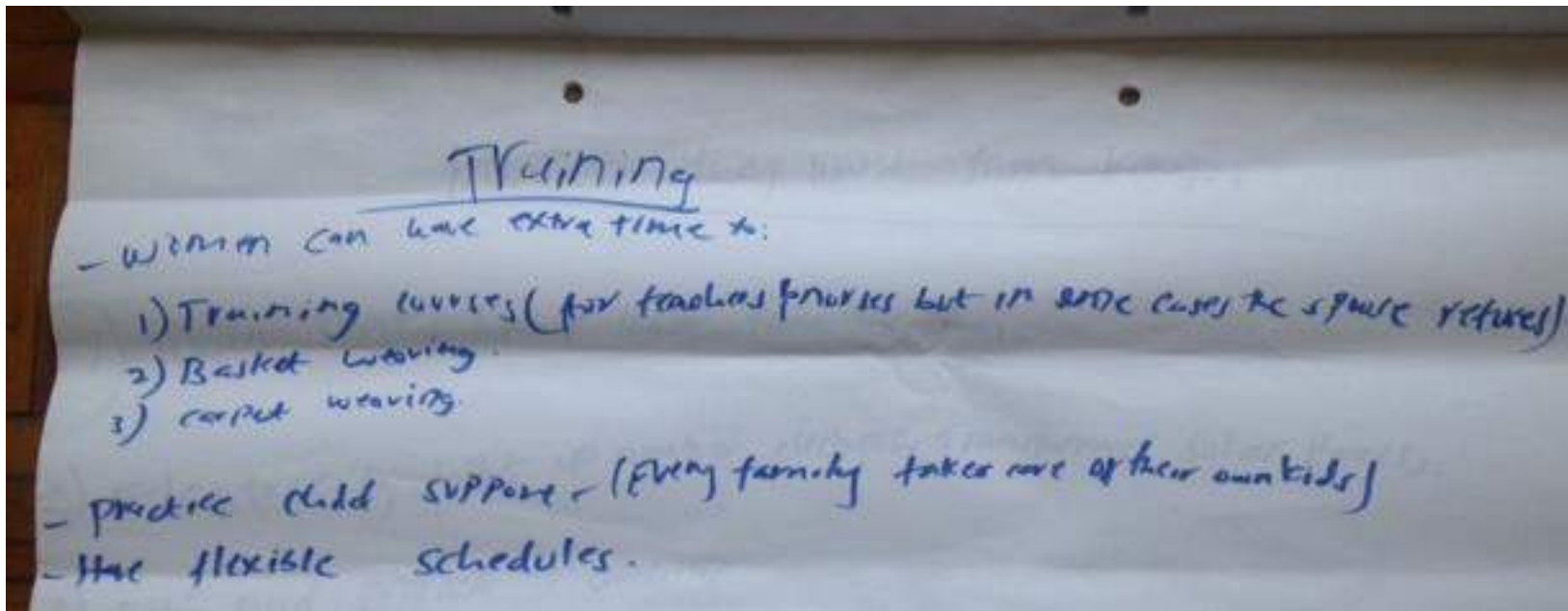


Figure 6 training courses women can undertake

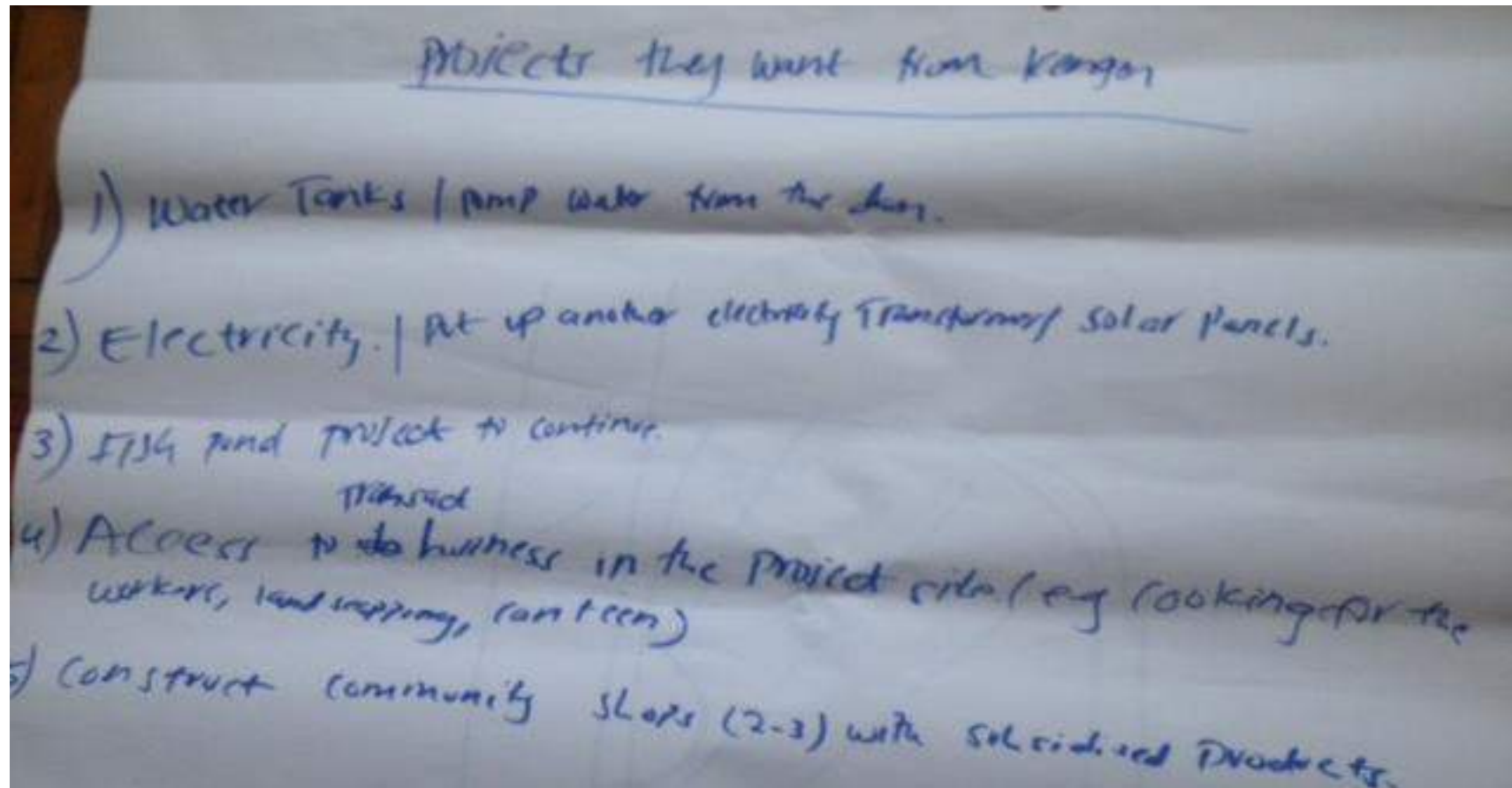


Figure 7 Community based projects that the women proposed from the project



Figure 8 Women focus group meeting

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION – MEETING MINUTE

Venue: Redeemed Gospel Church Machang'a

Time Started: 15.00 hours

Date: 04/10/17

Time Ended: 18.00 Hours

General Meeting Details: live hood restoration and Small Business

Government Representation: Senior Chief (Michael Njeru)

Media present: N/A

Number of Participants (excluding Project Company and Team): _____ Number of women: _____ Language used: _____

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	Comments/Questions / Suggestions and made by who		Response given and by who
1.	Name	Activity	Relation
2	Edward	Fishing	Beach Location and beach access are issues affecting the Fishermen-Youth
3	Suileman Njiru	Material for construction	Sand harvested from the site is used for construction of houses hence community will not have sand from the site.
4.	Mr.	Food Catering	The food caterers get their firewood from site hence they will be denied access to the source of firewood.

5.	Mr. Jeremiah Munyi	Livestock keeping-Grazing	<p>I am one of the livestock keeper and i will be denied access to site to grace my 10 cows.This will also force me to keep only one cow. It will impact to us negatively because we will not have enough food for our children.our health will also be affected because of lack of milk.</p> <p>Also no access to water for our livestock</p> <p>Solution</p> <p>Educate the people to change from free range system to zero-grazing.</p> <p>If no access to the site,KenGen to provide water points for the community to use.</p>
6.	Mr. Moses	Bee Keeping	<p>Clearing the site- means relocation of our bee hives or we abandon the activity all together.</p>
7.	Mr. Moses	Crop Farming	<p>Clearance of the site by removing trees will affect farming beacause that site is a micro-climate area.Some times we see it raining only in that area.</p> <p>Solution</p> <p>KenGen to provide seedlings to the community to plant at their home to compensate the cleared/cut trees.</p>

8.	Mr. Suileman	Wild animals	The site is a home and a grazing area for wild animals such as Hare, Monkeys, Dik dik, Snakes, Tortoise, Gazelle/Swara
9.	Mr. Moses	Medicinal plants-Herbal medicine.	The site has many medicinal plants used to treat certain diseases eg cancer. The tree used for treating Cancer is called "Mutero". Another useful plant is Aloe Vera.
	Name	Challenges	Solutions
1		Grazing Space	Sensitization Graded livestock-for zero grazing Alternative pasture/Hay
2		Limited access to existing water sources for Humans and Livestock	Piped clean water to the community
3		Firewood inaccessibility	Rural electrification programme (drop point to every home)
		Cutting trees	Seedlings provided to the community members/all learning institutions

		Limitation of freedom of movement	Widen access to the site by Ken Gen Expansion of health facilities to provide services to the local community Expansion of existing schools to construct new ones-Secondary and primary Need for bursary for bright students Police post for security purposes in partnership with Nyumba Kumi (Ten houses) initiatives. Recreation and social amenities /facilities for youth and members of the public.
	Name	Acceptance	Reasons
1	Mrs. Njuki	Yes	It benefits us – Electricity connection. Income to the county
2	Mr. Jeremiah	Yes	Additional power to the national grid. Activate idle land in line with vision 2030 realization
3	Mrs. Karani	Yes	Learning resources for school children Cheaper than electricity Connection by small business Jua- Kali
4	Mr. Moses	Yes	Business expansion by the community. Reduced incidences of blackouts. Employment opportunity.
	Activity	Challenge	Solution

1	Fishing	The beach location on site. Problem of accessing the beach	Beach to be gazette Road access route to the beach to be Gazetted. Fishers training Individual fish pond/Cages Embu County.
2	Construction	Sand harvesting. Water inaccessibility	Desiltation of the dam to be permitted to the locals as alternative source for sand for construction. Pumping water to the community
3	Food caterers	Firewood for preparing fod	Electricity connection for cooking Afforestation biogas
4	Bee keeping	Site clearing	Afforestation Relocation of hives.
5	Farming	Deforestation	Afforestation
6		Animal migration/extinction	Buffer zone between community and site plant trees Interaction with relevant agencies for protection and conservation for national heritage purposes.
7	Herbal Medicine	Loss of medicinal tree plants	Research from specialist for conservation and preservation. Liaise with University of Nsairobi on medicinal value. Local experts to identify areas of trees/plants with medicinal values.

		proposed corporate social responsibility(CSR)	
	Activity	Priority /Rank	Solution
1	Water project	1	Connection of water for community use
2	Electricity connection	2	Drop points for community connection.
3	Bursary	3	For community bright and needy students
4	Dispensary services	4	For the community and KenGen staff.
5	Education expansion	5	For mbeere community
6	Security (police post)	6	For the community and security of KenGen solar facility
7	Water pan(Silanga)	7	Communal water points for livestock
8	Expansion and improvement of feeder roads	8	For the community and KenGen to use.
9	Fish ponds		For individuals
10	Recreation and social amenities		Social halls and playground
	Name	ACTIVITY	JUSTIFICATION
1	Mr. Moses and Mr. Edward	Water project	The biggest problem. Dry area. Potential for changing local community livelihood Promotes health Support afforestation projects Fish ponds,reduced conflicts in rekation to water access,bee keeping.

2	Mr. karani	Electricity connections	Lighting for domestic and commercial purposes Local ownership for community to help in securing the facility. Self reliance through value addition to the members of the public. Improve literacy since most will be find it easy to be educated. Improved health.
3	Mr. Moses	Bursary	Considering poverty level of the community. Improved literacy. High transition rate.
4	Mr. Jeremiah	Dispensary services	Functional health facility for both KenGen staff and Social community. Reduced distance to health facilities High costs related to health facilities.
5.	Teacher.	Education facilities expansion	Increased population Insufficient existing facilities. Quality of existing facilities,students securing broken facilities.

Followup, documents provided, miscellaneous

PHOTOS





Figure 1: Community meeting minutes

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

EMBU COUNTY-MEETING WITH DIRECTOR .

Venue:









County Council H/C

Date:

Page:

#	Name and Organisation	Position	ID number Telephone	Contact detail	Signature
1	NICOLA DAVIES MOTIMACDONALD	ENVIRONMENTAL CONSULTANT FOR EIA	—	nicola.davies@ netnetec.com	
2	Therese Kibuku	Community Coordinator Operation - Kibuku	0722-426955	trudub@kenyan.co.ke	
3	KEN HOAGI	PERSONAL ASSISTANT TO H.E. THE GOV	0723 706301	ng'ikamath@gmail.com	
4	JATHSON NJERU	PLANNING	0722986622	injenu@kenya.co.ke	
	Amos MBUTHI	Enital Office Kenia	0723511447	ambuthi@kenya.co.ke	
	CHRISTOPHER SYENGE	Electrical Engineer - ECA	0722334071	chrissyenge@gmail.com	

DEPARTMENT HEADS EMBU

#	Name and Organisation	Position	ID number	Contact detail	Signature
1	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	8886315	072705555	
2	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	0711310217		
3	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	24161594	0721835566	
4	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	240283914	0713405640	
5	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	20950474	0726639055	
6	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	5	0721820890	
7	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	National Land Commission	0722934592	
8	James M. Maclellan	1st A-712-2 1st A-712-2 6th A-712-2	20368388	0716395436	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR 7 FOLKS SOLAR PLANT PROJECT, EMBU COUNTY







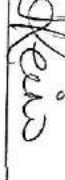

PUBLIC CONSULTATION MEETING - ATTENDANCE SHEET

Venue: KIRITIRI Town

Date: 2/10/2017

Page: 4

Planning for focus groups & Medicine Plan

	Name	Organisation	Title	Contact Details	Signature
1.	Jessie Ndungu	Kenya	Comm. Officer	0722-426955	
2.	Amos Mburu	Kenya	Bo-EA	0723511442	
3.	Jonathan Njiru	Kenya	AM-CP	0722986622	
4.	Nicola Davies	NCT MACDONALD	ENV CONSULTANT	2819287625	
5.	Romanus Opiyo	ECOPlan	Cultural Consultant	0722718096	
6.	Miriam W. Mwangi	Sol Africa (OP)	Sol Africa	0720652279	
7.	Micemba Mwangi	Subarea	Subarea	0725352432	
8.	Keino, Irene	ECO Plan	Env/Social Consultant	0724220790	
9.					
10.					
11.					
12.					
13.					
14.					

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue:





DCC

Date:

3/10/17

Page: 1

District County Commissioner Office - KILUA location

#	Name and Organisation	Position	ID number	Contact detail	Signature
	Jehan Kizap	Act 4 Manager ECO Plan Mgt	21135679	0712 781505	
	Irene Keino		8730759	072722079	
	NICOLA DAVIES	MCTIMACDONALD	+1281287625		
	JOHANSON NIEREN	AM-EP		0722986622	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue:

KPLC ~~Kilifi~~ KIVAA





Date:

8/10/17

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1

Consultation on re-alignment of Donashe line, that passes the project site

#	Name and Organisation	Position	ID number	Contact detail	Signature
	Dickson Muthira	SENIOR FOREMAN	9262506	0722332471	
	NICOLA DAVIES	ENV CONSULTANT	—	+12819287625	
	Heere Kemo	Eco Plan Ent/Social		0727 220740	
	Johnson Njiru	Kenyan			

10:30 - 12:30

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

KIVAA CHIEF OR UNION LEADERS MEETING

KIVAA AREA CHIEF OFFICE







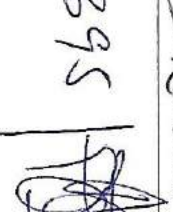
Date:

3/10/17

Page:

1

Name and Organisation	Position	ID number	Contact detail	Signature
COLA DAVIES OTT MACDONALD	Environmental consultant 7Forks EIA	-	+12819287025 nicola.davies@ nettnet.com	
SEPHAR K. DUNISU	CHIEF KIVAA LOCATION	1127573	CHIEF OFFICE 0726557900	
NIGORUS M. MAMGAI	ASSISTANT KIVAA S/LOCATION	22766108	ASSISTANT OFFICE 0711915881	
IRUEL N. KIHENBE	Chairman Kivaa/Kongu Community Land Committee	1460995	07223 14605	
WERS NISUNGU	IN-CHARGE ADM. POLICE KIVAA	22832793	0720999360	
ADIRACK KAMANDI	Jubilee Party Coordinator-ACTIS	25750187	0717913138	

#	Name and Organisation	Position	ID number	Contact detail	Signature
7	Gledys Muthoki	Community	6130910	0711564476	
8	Sabine Mithangathi	Community	6130746	0712016438	
9	Ngali Kiedo	Community	3586594	0919381586	NLK
10	Jacob KITHERA	Community	11862863	0728683859	
11	Kisilu Mwangi	Community	0892744	0792251798	Kisilu
12	Kauss Mwili	Community	5068975	0716429973	
13	Kyulu Muleta	Community	3527457	0700475427	
14	Anthony Musyuma	Community	3476507	0724010264	
15	Adrian Mubutu	Community	4401059	0729652395	

#	Name and Organisation	Position	ID number	Contact detail	Signature
15	Mellicah Mluka Kaouta	Treasurer - Kwa Community	08925169	0720845035	Mellicah
16	Benedict Hsingua	Vice-Chairman Kwa Community	1673306	0944249803	B
17	John Musau Khoro	Chairman	6133642	0710311550	John
18	Klaus Munde	Community	3526825	0904733480	WHAZ
19	Catherine Wenzug	Community Kengen Representative	13637371	0727732245	C
20	Americ Mutha Koro	Community	5069090	0717335182	Americ
21	Samuel Mufu	Community	25211971	0725025430	S
22	Jacinta Mutukha	M.T.M Kwa Community	26591978	0728297788	J
23	Lewosisi Mboso	Community		0770099848	L

2

#	Name and Organisation	Position	ID number	Contact detail	Signature
24	Anthony Muryori	Community	23674397	0723-964218	Anthony
25	Daniel Kithiro	Community	24698100	0701838334	D.
26	Alpha Kisii	Community	3527733	0700014281	Al -
27	Joseph Muthiga	Community	2737376782	0703893575	John
28	Simon Muriu	Community	13640634	0723801869	Simon
29	David Muthia	Community	0892682	0721674025	David
30	Joseph Kioke	"	1673354	0711220211	Joseph
31	Peter Muriu	Community	20787635	0722107645	Peter
32	AFRONE Kimbu	Community	1457527	0721690922	AFRONE
33	ISAAC Makila	Community	32173862 3406720	0713494698	ISAAC
34	Dominic Mbandio	E. leader	0717335443	0717-335143	Dominic

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

EMBU COUNTY-MEETING WITH DIRECTOR .

Venue:

County Council H/C

Date:

Page:

#	Name and Organisation	Position	ID number Telephone	Contact detail	Signature
1	NICOLA DAVIES MOTIMACDONALD	ENVIRONMENTAL CONSULTANT FOR EIA	—	nicola.davies@ motimac.com	
2	Therese Ndumu	Community Coordinator Operation - Kurgu	0722-426955	therese.ndumu@ke nec.com	
3	KEN HOAGI	DEPUTY ASSISTANT TO H.E. THE C.M.A	0723 706301	ken.hoagi@ke nec.com	
4	JATHSON NJERU	PLANNING	0722986622	jathson@ke nec.com	
	Amos MBUTHI	Enital Office Kurgu	0723511447	amos@ke nec.com	
	CHRISTOPHER SYENCE	Electrical Engineer - ECA	0722334071	christopher@ke nec.com	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA





PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue: **NERMA - Embu**

Govern ment office

Date: **24/10/17**

Page: **1**

#	Name and Organisation	Position	ID number	Contact detail	Signature
	KENNEDY OTHMANBI	Environment Officer -	21017334	kedhumbi@kenya.gov.ke 5791-819235	
	NICOLA DAVIES . MOTT MACDONALD	EIA PROJECT MANAGER	—	nicola.davies@mottmac.com	
	JONATHAN NETERU	AM-CP LICENSING	—	0722986622	
	AMOS MBUTY	Govt	—	0723511147	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET





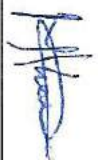
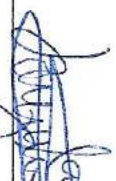

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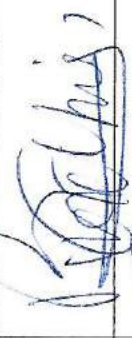
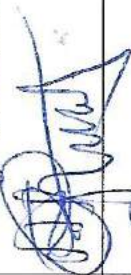

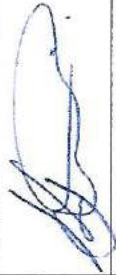
Embu County
Governor's Office / Deputy Governor

Date:

Page:

1

#	Name and Organisation	Position	ID-number E-mail	Contact detail	Signature
	Dickson Maelima	Senior Reporter	tydam007@yahoo.com	0726-886243	
	Dennis Tora	Reporter	dennis.tora@gmail.com	0718903700	
	James Fundi	Reporter	Mbugi Jc	0700362814	
	Charles Murea	Reporter	KNA	0710213642	
	Nelson Kariuki	Camerasman	Mbugi	07299719210	
	Kamenen Gatonga	Reporter	Meru TV	0710464445	
	William Kamen	Reporter	KNA-TV	0797280026	

Name and Organisation	Position	ID number	Contact detail	Signature
TA Mwaniki	REPORTER	WERU TV	0724171126	
Peter Gachanja	CITIZEN TV Reporter	C 2548 3377	0718808115	
Leulben Gethinip	The Star Reporter	10245912	0728414636	
Mosty Kamuk	Kior News	28112615	072044522	
Brian Mahila	country fm	30901548	0701767926	
Peter Nyaga	KFFX	6	0724962554	
Jogona Kemochi	KBC/cor fm	24028792	0723573656	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET





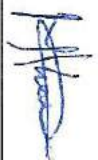
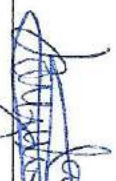

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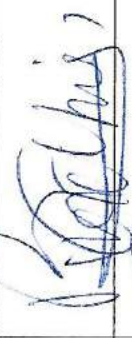
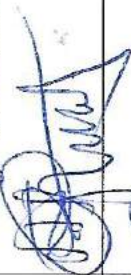

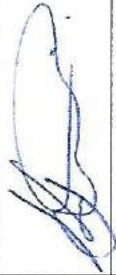
Embu County
Governor's Office / Deputy Governor

Date:

Page:

1

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	Dickson Maelima	Senior Reporter	tydam007@yahoo.com	0726-886243	
	Dennis Tora	Reporter	dennis.tora@gmail.com	0718903700	
	James Fundi	Reporter	Mbugi Jc	0700362814	
	Charles Murea	Reporter	KNA	0710213642	
	Nelson Kariuki	Camerasman	Mbugi	07299719210	
	Kamenen Gatonga	Reporter	Meru TV	0710464445	
	William Kamen	Reporter	KNA-TV	0797280026	

Name and Organisation	Position	ID number	Contact detail	Signature
TA Mwaniki	REPORTER	WERU TV	0724171126	
Peter Gachanja	CITIZEN TV Reporter	C 2548 3377	0718808115	
Leulven Gethinip	The Star Reporter	10245912	0728414636	
Mosty Kamuk	Kior News	28112615	072044522	
Brian Mahila	country fm	30901548	0701767926	
Peter Nyaga	KFFA	6	0724962554	
Jogona Kemochi	KBC/cor fm	24028792	0723573656	

4/10/2017

Focus Group Meeting

for women

September 2017

At Redeemers Gospel Church

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

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#	Name and Organisation	Position	ID number	Contact detail	Signature
	Susan Wambui/daughters of faith	Cloddy	13031329	0720572471	<i>[Signature]</i>
	Lucy Mwendia Njorou	CHW	20227037	0723855539	<i>[Signature]</i>
	Rachel Wanjira Macha	Chaddy Kanyo group	222945499	0719575447	<i>[Signature]</i>
	Zipporia Wairui	Pendo chair lady	11151998	0791300616	<i>[Signature]</i>
	Virginia Njagi	Meat go downs Kenya TREASURED	14581462	0723611542	<i>[Signature]</i>
	Loise Muriuki	women's Group Member	20956337	0791245161	<i>[Signature]</i>

Focus Group Women : Machanga in the County.

Name and Organisation	Position / Rep	ID number	Contact detail	Signature
MARGARET NJOKI NAMIA	ELDER (maurina)	13855793	0705487635	NAMIA
ANUY MWENDIA KANBY	Treasurer KATHUN	3297396	0711322278	REDA
INGENET NBIITH NLEEU	CHAIRLADY MAURINA KATHUN	9502446	0708584681	newt
STANE NDIGA MUCHUNGU CHURCH REPRESENTATIVE		3765086	0704028392	Helen
rene Kenno, MBS	Eco Plan	8730759	0721220790	JK
FAITH NGIANI	MAURINA	14410467	0707357120	REY
HIRROCENT NGINTA	MAURINA/REP CHAIRLADY	13574644	0722901073	R
JOYCE MBANDI MAGARA WEP		1152913	0717317802	Maureli

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET





Venue:

Machanga
Focus Group, Youth

Date:

4/10/17

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Name and Organisation	Position	ID number	Contact detail	Signature
NICHASIAS DWANIKI MESSOCH Mbere South Gil Disables Nafarik organization	SECRETARY	20578482	0723780734 Nicasymungu43018@gmail.com	
FELIX MUEAO NJUGI Mbere South	MSB SECRETARY	22678022	0727456679	
MARTINA NSIGI RUKUNYU OVC / Mavuriga	Treasurer	21419204	07291458391	Martina
JOHNSON MUKHTI NYAGA CHW	CHW	07 3706949	0711599188	
ROBERT N' MUCIO	SUB-AREA	0884374	07143335649	Robert
FATH NJERU	CHAIRMAN	8067459	0711655173	

Focus Group Women : Machanga in the County.

Name and Organisation	Position / Rep	ID number	Contact detail	Signature
MARGARET NJOKI NAMIA	ELDER (maurina)	13855793	0705487635	NAMIA
ANUY MWENDIA KANBU	Treasurer KATHUN	3297396	0711322278	REDA
INGENET NBIITH NLEEU	CHAIRLADY MAURINA KATHUN	9502446	0708584681	newt
STANE NDIGA MUCHUNGU CHURCH REPRESENTATIVE		3765086	0704028392	STANE
rene Kenno, NBS	Eco Plan	8730759	0721220790	JK
FAITH NGIANI	MAURINA	14410467	0707357120	FAITH
HIRROCENT NGINTA	MAURINA / REP	13574644	0722901073	R
JOYCE MBANDI MAGARA WEP	CHAIRLADY	1152913	0717317802	MBANDI




RED EMBERS GOSPEL CHURCH
Livelihoods + Small Businesses - Kintin










ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

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Name and Organisation	Position	ID number	Contact detail	Signature
WILSON HIRI CARA	RT. CHIEF MACHAKOS		Machakos market	
Ken Keino	Co-Plan Mgt Ltd		#45897-00100 NBI	Ken
Sunday Abuje	Eco Plan Mgt LTD Biodiversity Expert		#2503-00200 NAIROBI	
Barry Ndiriga			#75407-00200 NAIROBI	
Wahki Maku	Eco Plan mgt		0712086382	
Richard Ogdi	Eco Plan mgt			

Name and Organisation	Position	ID number	Contact detail	Signature
manus Opiyo				
DRICK NTHIGA	VILLAGE MANAGER	3527443	0725470182	
LIZABETH MBUCU	 Machango Project Coordinator ACCRI N.G.O	8066733	0713358526	
akom Peter Nuthini	Project Coordinator ACCRI N.G.O	0727210032 29702507	0727210032	
O PALESCHINI	Volunteer ACCRI N.G.O		0790706123	
MES MACHARIA	DEVELOPMENT PROMO- TER DOE-CHARITAS	27333122	0717328862	
ED. N. NIGISI	SOCIAL WORKER 12/11/2017 P.I.C PROTECTA	0723329064 0667988	0723329064	
IDA N. MUSA	ACCRI N.G.O 12/11/2017-16/11/2017	10728061	0722615640	
RA MORATIO	ACCRI IRIAMURAI PARISH EMBUCU CATHOLIC DIOCESE		0717112554	

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue:

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#	Name and Organisation	Position	ID number	Contact detail	Signature
	Peter Muthota	Business	10477034	0703226791	Muthota
	Njeru Njue	Farming	140087	0701373820	
	Jeremiah Iweri Mwangi	Farming/Professional	0296970	0721226570	Mwangi
	Kabura Muli Nyuma	Citrus farmer FISHERS	10222549	0713488923	
	MOSES KITHAKA HOJAGI	CONTRACTOR	13573979	0732969544	MH
	Beth Njoka Karani	Teacher/Farmer	1092917	0722251495	Beth

MICHAEL M. ASSER

Chief

9678706

0720652739

Michael M. Asser

ROBERT N. MUGO

SUB-AREA

0884374

0743335649

Robert N. Mugo

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA

PUBLIC CONSULTATION - ATTENDANCE SHEET

Embu County - Commissioner + Gender Office

Date:

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13/09/17

Name and Organisation	Position	ID number	Contact detail	Signature
Embu County - Commissioner + Gender Office	County Commissioner	10876425	0722735789	[Signature]
NEOTAS NIGERU	Gender Office	4685389	0710266766	[Signature]

Embu County

Embu County

#	Name and Organisation	Position	ID number	Contact detail	Signature
	DAVID NGARI MUSA				
	ACCRA NGO - KIMUNUWA	Co-ordinator	10728061	0722615640	Musa
	PETER N. NGAO P.O.C (ACCRA) KIMUNUWA	Scout leader	8667588	0723329065	Gym/Scout
	SARA YADATO ACCRA - KIMUNUWA PAPER - ETHIOPIAN PROCESS	VOLUNTEER		081402554	Scout leader
	UGO FALCETTI ACCRA - KIMUNUWA PAPER	VOLUNTEER		0780306123	Ugo Falcetti
	Makau Peter M.				
	XCEL N.G.O - NJUGUHA	Co-ordinator	29702507	0727210032	James
	JAMES MACHARIA MATI NGO - CHARITAS	Development Promoter	073333102	0717338862	James
	IRENE KENO ECO Plan ngf	ESIA/RAP Team leader	0730755	0727220790	Irene
	Sunday Abuye ECO Plan ngf	Biodiversity Expert	00954745	0720574035	Abuye

MURIEL MATHE

ECO Plan
Environment Expert

0712686382

M


ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR SEVEN FORKS SOLAR PROJECT, KENYA








PUBLIC CONSULTATION - ATTENDANCE SHEET

Venue: Ministry of Environment





Date: 05/10/2017

Page:

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