



# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SUMMARY PROJECT REPORT

## FOR THE PROPOSED LOWER KAKURET WATER PROJECT



GPS Coordinates: 29005.24 m E, 9975944 Ms

<b>Sponsor</b>	Government of Kenya / County Government of Laikipia with support from the World Bank 
<b>Client</b>	Kenya Climate Smart Agriculture Project (KCSAP)
<b>Proponent</b>	Lower Kakuret Self-Help Group

MAY 2021

**CERTIFICATION**

This is to declare that this Environmental and Social Impact Assessment Summary Project Report has been dully compiled in accordance with NEMA Public Notice on ESIA and Legal Notice No 31 which identifies the proposed project as Low risk, thus requiring only SPR. I the under listed on Behalf of the under listed team of SPR experts, certify that the particulars given in this report are correct and true to the best of Our knowledge;

**ESIA Experts:**

**Name of Lead Expert:** CHARLES KIRIMI

**Address:** P.O. Box 1552 NYERI

**Telephone:** 0721304429

Signature.....

Date.....

**Proponent:**

Lower Kakuret Self-Help Group,

P.O Box .....

**Signature.....Date.....**

## **ACKNOWLEDGEMENT**

The Lead assessment team wishes to thank the membership and entire leadership of Lower Kakuret Water Project who participated in conducting of this ESIA Report by providing necessary assistance, information and relevant documentation. We also wish to thank all the other stakeholders and technical staff under the line ministries and agencies, for their immense assistance including in literature review and cooperation during our field visits and assistance in availing the various relevant information. In particular; we thank the World Bank, the national PoE, KCSAP and Kieni West Sub-County technical officers and the local administration their support, who graciously provided pertinent data, information, and documents and also actively participated and interacted with the SPR Consultancy Team

## TABLE OF CONTENT

<b>CERTIFICATION</b> .....	<b>ii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iii</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>viii</b>
<b>CHAPTER ONE: INTRODUCTION TO THE PROJECT</b> .....	<b>1</b>
<b>1.1 Background</b> .....	<b>1</b>
<b>1.2 Objectives and Purpose of the Project</b> .....	<b>1</b>
<b>1.3 Project Justification</b> .....	<b>1</b>
<b>1.4 Objectives of the environmental and social assessment summary project report</b> .....	<b>1</b>
<b>1.5 SPR approach and methodology</b> .....	<b>2</b>
<b>1.5 Public Participation</b> .....	<b>2</b>
<b>1.5.1 Participants</b> .....	<b>3</b>
<b>1.7 Summary of the Findings from CPP and Analysis of Questionnaire</b> .....	<b>3</b>
<b>1.7.1 Expectations and Plans for the Social Outcomes</b> .....	<b>3</b>
<b>1.8 SPR organization</b> .....	<b>4</b>
<b>CHAPTER TWO: NATURE OF THE PROJECT</b> .....	<b>5</b>
<b>2.1 Introduction</b> .....	<b>5</b>
<b>2.2 Project Activities</b> .....	<b>5</b>
<b>2.2.1 Pre-excavation Phase</b> .....	<b>5</b>
<b>2.2.2 Excavation Phase</b> .....	<b>6</b>
<b>2.3.3 Construction</b> .....	<b>6</b>
<b>2.3.4 Ancillary Structure</b> .....	<b>6</b>
<b>2.5 Materials and Equipment</b> .....	<b>7</b>
<b>2.6 Project cost</b> .....	<b>7</b>
<b>CHAPTER THREE: PROJECT LOCATION AND DESCRIPTION</b> .....	<b>8</b>
<b>3.1 Location</b> .....	<b>8</b>
<b>3.2 Lands Ownership</b> .....	<b>8</b>

<b>3.3 Topography, climate and soils .....</b>	<b>8</b>
<b>3.3.1 Topography .....</b>	<b>8</b>
<b>3.2.2 Climate and Rainfall.....</b>	<b>8</b>
<b>3.2.3 Vegetation .....</b>	<b>8</b>
<b>3.2.4 Soils.....</b>	<b>9</b>
<b>3.2.6 Hydrology .....</b>	<b>9</b>
<b>3.3 Environmental management infrastructure.....</b>	<b>9</b>
<b>3.4 conformity of land use plan/zonation .....</b>	<b>9</b>
<b>CHAPTER FOUR: PUBLIC PARTICIPATION &amp; STAKEHOLDER CONSULTATIONS.....</b>	<b>10</b>
<b>4.1 Introduction.....</b>	<b>10</b>
<b>4.2 Objectives of the public participation.....</b>	<b>10</b>
<b>4.2 Categorization of Community Participants and stakeholders.....</b>	<b>10</b>
<b>4.3 methodology of public participation and consultation .....</b>	<b>10</b>
<b>4.4 Issues raised and addressed during the public participation .....</b>	<b>11</b>
<b>CHAPTER FIVE: POTENTIAL IMPACTS AND MITIGATION MEASURE.....</b>	<b>13</b>
<b>5.1 Introduction.....</b>	<b>13</b>
<b>5.2 Anticipated Positive Environmental and Social Impacts .....</b>	<b>13</b>
<b>5.3 Anticipated negative impacts and mitigation measures in preparatory phase .....</b>	<b>14</b>
<b>5.4 Anticipated negative impacts and mitigation measures during construction phase</b>	<b>14</b>
<b>5.5 Anticipated negative impacts and mitigation measures on operational phase .....</b>	<b>18</b>
<b>5.6 Anticipated impacts during decommissioning phase.....</b>	<b>20</b>
<b>CHAPTER SIX: ENVIRONMENTAL AND SOCIAL MANAGEMENT &amp; MONITORING PLAN (ESM&amp;MP) .....</b>	<b>22</b>
<b>6.1 Introduction.....</b>	<b>22</b>
<b>6.2 Environmental and Social Management Plan (ESMP) .....</b>	<b>23</b>
<b>CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>39</b>

<b>6.1 Conclusions.....</b>	<b>39</b>
<b>6.2 Recommendations.....</b>	<b>39</b>
<b>REFERENCE.....</b>	<b>45</b>

Plate 2: Public participation meeting .....	12
Plate 3: Members showing the site .....	92
Plate 4: Public participation meeting .....	92

Annex 1: Proponent's registration certificate .....	47
Annex 2: KRA Pin.....	48
Annex 3: Title deed.....	49
Annex 4: WRA Permit.....	50
Annex 5: Land Use Consent .....	52
Annex 6: Expert's EIA/EA licence .....	53
Annex 7: Screening Checklist.....	54
Annex 8: Minutes of CCP meeting.....	57
Annex 9: Previous EIA licence.....	60
Annex 10: Google Earth Map.....	63
Annex 11: Public Participation filled questionnaires.....	64
Annex 12: Chance find procedure .....	76
Annex 13: Construction design and plan .....	77
Annex 14: Site layout.....	79
Annex 15: Satellite map of the intake site .....	81
Annex 16: List of beneficiaries.....	82
Annex 17: Sale agreements.....	90

## **ABBREBIATIONS AND ACONYMS**

AEZ	Agro Ecological Zone
A.S.L	Above Sea Level
BESP	Biological, Economic, Social-Cultural And Physical Environment
CBO	Community Based Organization
CMS	Catchments Management Strategies
CPP	Consultative Public Participation
GPS	Geographical Positioning System
DOSS	Department of Social Services
EIA	Environment Impact Assessment
SPR	Summary Project Report
EMCA	Environmental Management Coordination Act (1999)
ESMF	Environmental And Social Management Framework
ESMMP	Environmental and Social Management and Monitoring Plan
KFS	Kenya Forest service
Km	Kilometers
MoU	Memorandum of Understanding
NEMA	National Environment Management Authority
OP	Operation Procedures
OSHA	Occupational Safety and Health Act (2007)
PRSP	Poverty Reduction Strategy Paper
SDG	Sustainable Development Goals
SDOA	State Department of Agriculture
SDOH	State Department of Health
SOP	Standard Operation Procedures
STIs	Sexually Transmitted Infections
TOR	Terms Of Reference
WRA	Water Resources and Authority

## EXECUTIVE SUMMARY

This report presents the Environmental and Social Impact Assessment Summary Project Report findings for the Proposed Lower Kakuret Water Project. Lower Kakuret Self Help Group is a Community Based Organization (CBO) with a total of 766 members (363Males + 403Females) mainly from 5 locations: Lower Kakuret, Gaturiri, Lusoi and Kamuhihuria areas, and Karicheni in Kieni East Sub-county in Nyeri County. The groups Registration are Lower Kakuret Water Project Self Help Group REG. No K.E/Project/SH/3704/2016 and the group was mainly formed on water provision for domestic and subsistence irrigation purposes among members of the local community. However, to-date the group has also diversified in other activities including table banking and mixed farming. Some members are also involved in dairy cow, milk production, hay and fodder production, dairy goat rearing and bee keeping.

The project was proposed by the Lower Kakuret community due to their increasing need for irrigation water. The community has envisioned the implementation of the project but due to lack of financial resource the project has been dormant. The project was selected because of its relevance to KCSAP triple objective of: (i) increasing agricultural productivity, (ii) increasing resilience to climate change (adaptation), and (iii) decreasing incidences of greenhouse gas emission (mitigation). The proposed project aims at constructing an intake, construction of two storage tanks, fencing and piping works (main lines and distribution lines). This will increase water supply for the purpose and support agricultural production through irrigation. The main objective of the SPR was to identify existing and potential environmental and social impacts and concerns that the interested and/or affected parties have with the proposed development intervention, as well as the associated prevention and mitigation measures for the negative impacts as stipulated in the proposed Environmental Social Management and Monitoring Plan.

The study involved the use of several techniques and methodologies. The techniques and methodologies used were necessary for collecting baseline information, analysing the legal and policy framework, assessing and predicting the potential positive and negative impacts, analysing the impacts in order of importance and thus formulating the order in which the impacts are to be avoided, minimized and or mitigated accordingly. The team was guided by the requirement of the National Environmental Management Authority; Environmental Impact Assessment Guidelines, section 58 of EMCA 1999 and Environmental (Impact Assessment and Audit) Regulations and the World Bank Environment and Social Safeguards policies; Environmental Assessment (OP 4.01)

Public participation and consultations were carried out through questionnaires survey and consultative meetings. Thirty-seven questionnaires were disseminated for public participation but 21 were dully filled. From the dully signed questionnaires were nine were females and twelve were males. Community meetings were also done and the minutes and proceedings attached. Other relevant stakeholders from various departments were consulted on the suitability of the project. Some of the stakeholders include department of; environment and climate change, water and irrigation, agriculture, social development, occupational safety and health, administration and vulnerable and marginalized groups. The information gathered during the consultative public participation indicated that the general take of stakeholders is that the positive impacts of the project over-weigh the negative impacts. The negative impacts cited were considered insignificant and can therefore be mitigated and positive ones maximized. The report discusses in details the anticipated positive and negative environmental and social impacts and their proposed mitigation measures. Some of the positive impacts include; creation of employment opportunities to the community, new business opportunities for the host community, livelihood diversification, increased household income, reduced land degradation, food and nutrition safety, reliable sources of water and improved

wellbeing of women and children. However, some of the negative impacts include; disturbance of vegetation, noise, water and air pollution, generation of solid waste, sexual exploitation, gender-based violence, child abuse, grievances and occupational and public safety and health impacts. The construction and operation of this facility will bring about positive impacts namely irrigated farming, livestock and human use and employment opportunities during constructions, production of high value crops, creating business opportunities to those who will be marketing the vegetables and other produce. Other secondary benefits will be, increased food supply and capacity building in terms of improved skills in food production. The main negative impacts during construction of the intake and piped networks are on health and safety due to risks of personal accidents and injuries, and poor ergonomics, accumulation of solid waste (excavated soils) air quality due to soil debris, dusts and noise nuisance. During the operation and maintenance phase, the negative impacts are on personal health and safety (water borne diseases may occur, flooding downstream or due to incidence of pipeline bursts, mosquito breeding and drowning in the irrigation ponds, siltation and loss of biodiversity. Community members may also consume the untreated water. There also may be water demand conflicts especially during the dry seasons. During the decommissioning phase impacts could be environmental i.e., on soils, future land use and socio economic, loss of income and business opportunities for those engaged on supplying fresh products and low protein diet.

The construction cost for the project is approximately Kenya shillings twenty-six million, seven hundred and forty-two thousand and twenty-four shillings (26,742,024 /=). This value was estimated up to completion stage. The cost is tentatively supposed to be met by the Lower Kakuret community and support from both the KCSAP project and the County Government of Nyeri. In relation to the total cost the implementation of the ESMMP will be 670,000.

The environmental and social management plan (ESMP) provided by this report highlights these mitigation measures and suggests the roles and responsibilities of the state department of agriculture, Water & Irrigation, and the group members. The report concludes that the project will not compromise the environmental and social aspects enjoyed by the residents of Gaturiri, Kirinyaga, Getting, Lusoi and Kamuhuria villages and its environs if the EMP is implemented. The report further recommends that this proposal be approved and a license be issued as long as they fulfill the conditions highlighted in the ESMP. The potential negative impacts are categorized in three project phases; construction, operational and decommissioning phases. For ease of implementation the ESSMP should be shared with the contractor

It is strongly recommended that a concerted effort is made by all the stakeholders to implement the Environmental and Social Management Plan. During the operation and marketing of produce, it is necessary that environmental regulations be strictly adhered to. The performance of the facility should also be monitored against the recommended mitigation measures to ensure sustainability.

## **CHAPTER ONE: INTRODUCTION TO THE PROJECT**

### **1.1 Background**

The Lower Kakuret is a registered Self Help group in Kieni East sub-county. The Group intends to construct an intake from the Nairobi River and direct the water via pipelines along public roads in order to avoid unnecessary compensations so as to enable farmers around the lower areas in lusoi, Kamuhihuria, and Kaburaini; to undertake irrigation of high value crops for the purpose of addressing issues of food security. Other intended benefits among the members and the entire community are; to improve livelihoods and address nutritional aspects. Lower Kakuret a Self-Help group and the surrounding community is referred to as the beneficiaries and will grow high value crops like tomatoes, cabbages, carrots, kales, proteineous fodder and tree nurseries among others. The proposed mainline has been designed to cover approximately 22.6Km from upper Nairobi River (intake point) across the middle zone (Gaturiri) to the last (lower zone) point at Gitinga area. The project is estimated to benefit more than 776 households immediately and another 500 in the near future upon full completion.

### **1.2 Objectives and Purpose of the Project**

The proposed project interlinks with the KCSAP triple objective of: (i) increasing agricultural productivity, (ii) increasing resilience to climate change (adaptation), and (iii) decreasing incidences of greenhouse gas (GHG) emission (mitigation). In meeting the aforementioned objectives, the proposed project will

- Supply reliable water for farming vegetable production and improve on land use
- Introduce tree nursery growing as an income generating activity.
- Demonstrate on fish farming, drip irrigation and technology for uptake by community members
- Supply the neighboring community with fresh products that are scarce mostly during dry season.
- Promote growing of high value proteinous fodder such as desmodium and lucerne for use by livestock mostly during the dry seasons.
- Provide employment for local youth and other service providers.
- Improve authentic and capital value of the affected pieces of land.

### **1.3 Project Justification**

The SPR was as a result of the recommendation of the County Director Environment (CDE) based on the screening report, but also because NEMA Public Notice on ESIA and Legal Notice No 31 which identifies the proposed project as Low risk, thus requiring only SPR. As per the feasibility study and site visits conducted the project does not affect sensitive ecosystem nor displace people thus requiring an environmental and social impact summary report.

### **1.4 Objectives of the environmental and social assessment summary project report**

The main objective of this assessment was to identify and assess the probable social economic, cultural, political, physical and environmental impacts that will be associated with the construction, operation and maintenance and decommissioning phases of the water project. The assessment was aimed at pointing out significant impacts and proposing mitigation measures and enhancement of positive impacts through an ESMP. Other objectives of the report are

- To comply with the Environmental (Impact Assessment and Audit) Regulations, 2003, Regulation 6, which requires that an application for an Environmental and Social Impact Assessment (ESIA) license and applicable World Bank Policies.
- Study the nature of the project supported by design and plan drawn to scale
- Study any environmentally sensitive areas to be affected by the project
- Availability of supportive environmental management infrastructure
- Conformity to land use plan or zonation plan
- Potential environmental and social impacts of the project cycle phase: planning, construction, operation and decommissioning
- Mitigation measures for all potential environmental and social impacts
- Environmental management plan for the entire project life cycle
- Conduct comprehensive public consultation
- To prepare an ESIA report for the client

### **1.5 SPR approach and methodology**

The SPR began with environmental and social screening, followed by scoping for the actual SPR study. The study involved the use of several techniques and methodologies. The techniques and methodologies used were necessary for collating baseline information, analysing the legal and policy framework, assessing and predicting the potential positive and negative impacts, analysing the impacts in order of importance and thus formulating the order in which the impacts are to be avoided, minimized and or mitigated accordingly. These tools included;

- 1) Revisions of literature and documents including project proposals, policy and legal frameworks.
- 2) Discussions with stakeholders, the proponent and project facilitators.
- 3) Site visits, observations, taking photograph and interviews.
- 4) Holding meetings and discussions of the proposed project and interviews with the land owners, including policy departments aiming at getting their feelings about the environmental and Social issues emanating from this project.
- 5) Analysis of impacts, developing the ESMP, discussing the outcomes with the proponent, relevant stakeholders and presenting the report to the relevant offices.

### **1.5 Public Participation**

During this exercise, the group members were involved in airing their concerns about the project. Offices visited included. The state departments namely: agriculture, water, livestock, forestry, Wildlife, CDF, Local administration, NGO's and other relevant stakeholders in Kieni East Sub-county.

- 1) The methodology used is as outlined above. The aim of involving the public was mainly to;
- 2) Improve transparency and increase public confidence in the SPR process.
- 3) Identify the social, biophysical, economic and environmental concerns as perceived by the public.
- 4) Identify the important impacts that the project should not ignore.
- 5) Identify contentious issues that could later bring conflict.
- 6) Obtain local input into the design of the project, alternatives and mitigation measures of negative impacts of any nature.

### **1.5.1 Participants**

The public participations forums led the community into discussing problems concerning the project and providing solutions. Apart from the common meeting and personal consultation a total three major barazas were conducted along the main distribution line, namely Upper zone at Gaturiri Chiefs camp, Middle zone at Munyu (community tank installation site), and the Lower zone at Munyu Full gospel church (a total of 91 people (57females, 44males). The meetings were attended by representatives of the beneficiary community, local leaders and other selected key stakeholders. During the field investigations, the team obtained pertinent information from the Lower Kakuret Community (see copy of filled questionnaire in annexes).

### **1.7 Summary of the Findings from CPP and Analysis of Questionnaire**

- The project will impact positively on food security and act as a demonstration on drip irrigation
- The proposed project is aimed at harvesting the overflows from the Nairobi river with strict control and management measures therefore no conflict with water users downstream.
- The project is aimed at proper utilization of land and establishing high value crops.
- Other alternative technologies cannot compete with the proposed one in terms of economic viability and environmental feasibility.
- The project intake will be located near indigenous trees that form a canopy thus they will reduce evaporation rate.
- The local community supported the construction of the project since it will mitigate against water shortage and provide nutrition products to the beneficiaries.
- There exists an access road to the intake site which will be useful for accessing the site and markets. This road will be used as the designated route to avoid vegetation disturbance.
- Silt trapping techniques need to be installed along the distribution network including natural water ways to reduce siltation.
- There are other existing water projects within the sub-county including water pans but far from the site.
- The project is predicted to help the group members and add value to their existing and projected activities.
- The group already has acquired most of the critical policy documents required for water projects including land title deeds, WRMA permits and wayleave/MOU consent letters.

#### **1.7.1 Expectations and Plans for the Social Outcomes**

- The project intake will be secured through fencing for safety of human beings and livestock.
- The group members will introduce fish farming to add value to their project.
- By-laws will be enhanced to ensure sustainability of the project.
- There will be social economic and nutritional benefits from the project thus benefiting group members and Lower Kakuret community and those supplied with fresh products.
- What will be learnt like drip irrigation and tree nurseries technologies will be replicated by other farmers at their farms.
- The group will open and operate a bank account and learn management techniques

- The farmers will be trained on efficient water use, environmental conservation, use of pesticides and disposal of by-products.
- Project will provide irrigation water in order to grow crops to reduce poverty and generally improve food security and the socioeconomic status of the beneficiary households and immediate institutions such as Naromoru Girls Secondary, Kids Alive Home care, Baraka Technical Institute, among many others.

### **1.8 SPR organization**

- Chapter One: Introduction
- Chapter Two: Nature of the project
- Chapter three: The location of the project
- Chapter Four: Public participation and stakeholder consultations
- Chapter Five: Anticipated impacts and mitigation measures
- Chapter Six: Environmental and social management and monitoring plan (ESMMP)
- Chapter Seven: Conclusion and recommendations
- References
- Annexes

## **CHAPTER TWO: NATURE OF THE PROJECT**

### **2.1 Introduction**

The proposed project involves abstraction of water, upgrading of water intake, construction of mainlines, sub mains and distribution pipes to ensure increased supply of water for irrigation. The main works include site clearance, excavation and earth works for storage tanks, intake and distribution lines and appurtenances.

### **2.2 Project Activities**

The activities to be undertaken in the upgrading of the intake, construction of storage tanks and distribution lines and appurtenance will comprise:

- Site clearance of all sizeable bushes/shrubs
- Construction of the intake at the river
- Construction of a 225m<sup>3</sup> storage tanks
- Excavation and digging of trenches for the pipelines
- Laying of pipes for the main line
- Laying of pipes for sub-mains, branch lines and feeders
- Installation of infield system at farm level
- Site landscaping
- Fencing of the intake and the tank two tank sites
- Excavation of a river diversion

#### **2.2.1 Pre-excavation Phase**

A meeting will be conducted at the site before any activity is commenced. Representatives from the Government (National and County), local administration, representatives from various departments, KCSAP project coordinators hosted by the community were present. The aim of the activities was to understand the setting, the layout of the project area the key issues affecting the project stakeholder

##### **a) Mobilization of Machinery**

This will be done by the contractor who will have been appointed through the Government and World Bank tendering and awarding process. The type and the quantity of mechanical equipment to be used depend largely on availability and the structure type and dimensions. The following items are useful: bulldozer for the site preparation, excavator for the excavation of foundations for the dam area; loaders and dump trucks to loads of soil desilted and excavated to the temporary holding site; motorized rollers and compactors.

##### **b) Site Layout**

The site layout has been provided in the documents for the Engineer and site engineer usage during supervision and carrying out of site activities. It must be done with sufficient accuracy to ensure that it is appropriate to the actual pan design.

### **2.2.2 Excavation Phase**

Excavation of the expansion of the existing intake will be carried out to pave way for reinforcement of the same. Excavation of spillway, inlet and outlet will also be carried out. The soils excavated depending on the quality and quantity should be used for reinforcement of the embankment (the soils to be tested following the engineer's instructions), some to be used for access road as marram and the top soil to be used for landscaping (grass and tree planting) around the dam's site. Excavation of pipelines both mainlines and distribution lines will be carried out. The site should be rehabilitated to the best environmentally friendly state as possible. For the area excavated for the storage tanks will involve supply and application of anti-termite chemical.

#### **a) Site Clearing**

From the site visits conducted at the intake site, clearing of vegetation will include clearing of short bushes and shrubs will be necessary. Few trees will also be affected. The cleared vegetation should be disposed-off or used for other purposed e.g., donation to children's home to avoid wastage. (in case of any hindrance during clearing the site engineer should contact the county forester).

#### **b) Back-filling and Compacting of the Embankment**

Back-filling, compaction and trimming will be done using a dozer. Excavators can also be used for trimming slopes. Material originally excavated or imported material from a borrow pit will be used for back-filling the embankment through placing and compacting as directed by the Engineer. Backfilling will be done for all trenches (distribution)for the mainlines and the feeder lines. All the soils used should be tested as per engineers' instructions to prevent over-topping of the embankment.

### **2.3.3 Construction**

As per the designs and the bill of quantities for the project the construction will be done for the intake and the storage tanks with walling and roofing. All the material specification, qualities and quantities have been specified in the BoQ

### **2.3.4 Ancillary Structure**

#### **a) Slanting Grass Cover and Trees**

Protection activities including soil conservation, erosion control, drainage work and planting of trees, shrubs and grasses is important. It is essential that a good creeping grass type. It is established on all bare earth surfaces as soon as possible after project completion.

#### **b) Fencing**

In the storage tank area, definitely no human activities such as farming, grazing and hunting will be allowed. A chain-link fence will be erected for safety purposes. Fencing of the pan will prevent access and reduce the risk of small children and livestock falling into the dam. This will prevent both human and animal accidents. All the equipment needed have been specified in the BoQ

## **2.5 Materials and Equipment**

The inputs to implementing the proposed project are human labor (skilled and unskilled), plant and machinery, GI pipes, wire mesh screens, water pumps, concrete fencing poles, chain link, barbed wire, construction material (sand, stones, cement) metals and gate. All the materials needed have been specified in the BoQ

## **2.6 Project cost**

The estimated cost of the project has been described as per the proposed project Bill of Quantities.

## **CHAPTER THREE: PROJECT LOCATION AND DESCRIPTION**

### **3.1 Location**

The proposed point of abstraction is on Nairobi river marked by the GPS S00.222111, E037.111374 at an elevation of 2180masl (37M 0289809, UTM 9975440). This is in Mbogoini village, Kaburaini sub-location, Kaburaini location, Kieni East Sub-County. There is an existing weir belonging to the project. The masonry storage tank will be constructed on a piece of land belonging to the project at the GPS coordinates S0.224603° E37. 089540°; at an elevation of 2113.9m a s l (37M 0287381, UTM 9975152). The supply area is in Lower Kakuret village and small parts of both Lusoi and Kamuhihuria villages. This is in Kieni East sub-County in Nyeri County.

### **3.2 Lands Ownership**

By large if not 100% all the land where the proposed project network will be constructed is on public land in terms of along main tarmac road, access weather roads and few farm roads. The proponent has already acquired an authorization for wayleaves from the affected members of the community through a signed Memorandum including the Kenya Rural Roads Authority where public access roads may be affected by the pipeline. Also, the group has further acquired privately an extra 0.05Hactares of land being already legally excised and transferred to the group name, for construction of the proposed water tanks and office block.

### **3.3 Topography, climate and soils**

#### **3.3.1 Topography**

Site slopes the distribution network will be located from upper Mbogoini/Gaturiri footbridges of Mt. Kenya at 2198m altitude A.S.L. to the lowest Gitinga areas at the low laying lands (1916m). The North East to east-west gradient average will be 19% slope.

#### **3.2.2 Climate and Rainfall**

The water abstraction location falls within the sub-humid zone with cool climate. The mean annual temperatures vary between 120C and 140 C. The mean annual maximum temperatures vary between 180 and 200 C while the mean annual minimum temperatures vary between 60 and 80 C. The supply area falls within the semi-humid zone with cool temperate climate. The mean annual temperatures vary from 160 and 180 C. The mean annuls maximum temperatures vary between 22<sup>0</sup>and 24<sup>0</sup> C while the mean annual minimum temperatures vary from 10<sup>0</sup> to 12<sup>0</sup> C.The rainfall is bimodal with two rainy peaks in May and November and without an absolute dry period. The long rains fall during the March to May period and the short rains in October to December. The precipitation ranges from 750mm-1000mm.

*(Source: Min. of Agric / GTZ-Farm Management Handbook, Part B, Vol. II, 2<sup>nd</sup> Edition issued 2011).*

#### **3.2.3 Vegetation**

The farms where the irrigation will be done are currently owned by individual farmers who have planted Napier grass, maize and beans with some practicing horticulture and mixed farming. Some idle land and natural bushes are also available within the upper areas nearing the main intake point.

### **3.2.4 Soils**

It is well drained, extremely deep, dusky red to dark reddish brown, friable clay, with acid humic topsoil humic nitisols. Neighborhood, fruits and agroforestry vegetation are also distributed within the private farms due to farming activities. The project area is within the farmlands and there is no natural vegetation at risk. What will be affected will be food crops and any other vegetation growing on parcels of land that are not cultivated.

### **3.2.6 Hydrology**

The water body under reference is the Nairobi river a tributary of Sagana river. The Nairobi river has its source from lake Hohnel on the upper western slopes of Mt Kenya at approximately 4200m A.S.L. From the upper flanks of Mt. Kenya, there are also other several channels from the upper reaches (Lusoi, Rongai e.t.c.) which drain downwards and confluences to the Nairobi main network then flows in a southwesterly direction up to the southerly eastern lower areas (Lower Kakuret) areas.

## **3.3 Environmental management infrastructure**

### **a) Water harvesting**

Rain water harvesting could be used by installing roof gutters and construction of storage tank which could not work out effectively due to affordability by majority of the beneficiaries exacerbated by climate change and inadequate water harvestable.

### **b) Environmental Infrastructure**

There are no other existing effective and sustainable water projects for irrigation within the project location itself. The nearest schemes namely; Gatwamba–Karicheni, Kirinyaga-Nyanje and Munyu irrigation scheme are far; and in Kabaruru ward in Mathira constituency. The area is not served by landline telephone. However, the available networks are Safaricom, Telcom, Airtel and Orange. This can be important for communication during implementation and operations of the project. The site is served by Murram roads from Karicheni market, Nyanje, Gatwamba to Mbogoini areas. Some sections of the roads may be impassable during rainy season.

## **3.4 conformity of land use plan/zonation**

Before human encroachment, the intake area was covered by dry lowlands and indigenous forest which accounted to the largest area of the catchment. The main land uses were grazing. However due to the ever-increasing population pressure from the high potential areas and growth of urban centers, the nearby large tracks of land are being sub-divided for settlement and small holder cultivation. Ecologically, this is a wheat – Maize – Barley zone where the main land-use is primarily for cultivation. The farmers practices mixed agriculture; they grow crops including; wheat, maize, potatoes, kales, spinach, English, potatoes, snow peas, and with the latter being the cash crop for the area. They also keep daily cattle, sheep and chicken among other animals.

## **CHAPTER FOUR: PUBLIC PARTICIPATION & STAKEHOLDER CONSULTATIONS**

### **4.1 Introduction**

The chapter clearly describes and explains on the objectives of the community Consultation, categorization, methodology and Summary of Issues Raised by the Community and Stakeholders and Response.

### **4.2 Objectives of the public participation**

Public consultation with regard to the proposed project was conducted as required in the Environmental Impact Assessment and Audit Regulations of 2003. However, due to the government restrictions and World Bank guidelines following Covid-19 pandemic, the number of those consulted was minimized to a representative number as guided and led by the area chief and those living close to the proposed project site. Two Public participation meetings were held on 5<sup>th</sup> January and 6<sup>th</sup> January 2021. The main objectives of the participation were to;

- Identify key issues of concern in relation to the proposed project
- Ensure balance inclusion and involvement of all groups for public participation
- Explain to the neighbours the nature of the proposed upgrade water intake, its objectives and scope.
- Give neighbours an opportunity to present their views, concerns and issues regarding the proposed project
- Obtain and analyse suggestions from neighbours on possible mitigation measures of potential negative impacts of the proposed project
- Obtain local and traditional knowledge that may be useful for decision making
- Provide the public information to assist in understand the project, alternatives, opportunities of the proposed project

### **4.2 Categorization of Community Participants and stakeholders**

Public participation and stakeholders' consultation comprised the community referring to those inhabitants of immediate and surrounding areas to be affected by the proposed project. Community project members, neighboring residents and surrounding institutions were invited during the public participation. From the stakeholders meeting held on 27<sup>th</sup> November, 2020 thirty-seven members were in attendance twenty were males and ten were females.

### **4.3 methodology of public participation and consultation**

The methods used in the public participation and consultations were interviews Key informant interviews, a formal meeting for the government departments and use of mails where necessary for clarification. Since the Government had banned large gatherings, meetings conducted adhered to the government regulations of public health and World Bank guidelines. They were invited through short messages notice and were provided with the masks and sat in 1.5m distance from one another as required by the public health regulations.

The consultant distributed a total of 37 (the members were also present for public interview) questionnaires to be filled by the community members and were filled in and returned. Due to

illiteracy by some of the community members there was assisted filling in of questionnaires from the literate members of the community through translation. Annex ----samples of the filled questionnaires.

#### **4.4 Issues raised and addressed during the public participation**

##### **1. Environmental and soil conservation**

The community through the Sub County Environmental and Agricultural officers should create awareness to the community on the most appropriate conservation method. The community requested for tree seedling for riparian conservation and agroforestry. The project coordinator to Liaise with sub county forester for this to be done.

##### **2. Labour distribution**

The community raised issues on how labour will be distributed during the project implementation. The project committee will be involved when the labour is needed. The community especially the youth will be involved in activities of the project implementation. Labour distribution should be done following the gender rules and avoiding child labour i.e., forced or voluntary. Sexual harassment should be condemned during all the project phases.

##### **3. Land for the proposed project**

The committee should ensure that the members where distributions lines will be located have signed agreements to ensure there are no conflicts on land and human displacements. The community has already purchased a piece of land for the construction of the tanks. For the proposed intake, application and issuance of Water Resource Authority permit for water abstraction has been done.

##### **4. Project costs**

The community enquired on the specific cost of the project as in the BoQ. The KCSAP team has revised the community BoQ to fit all the project cost materials while ensuring quality and quantity without compromising the project objectives. The committee will be issued with the revised BoQ for their perusal and distance, washing hands reference. The community committee should ensure that they are aware of the BOQ contents.

##### **5. Corporate Social Responsibility (CSR) by the contractor**

Upon project implementation the community should discuss on the most appropriate CSR to benefit the project area. This should involve the area administration, project community and any other relevant stakeholders. The project agreed upon should benefit the project members and the area residents.

##### **6. Spread of covid 19**

It was agreed that the Ministry of Health Guidelines for covid 19 control and management including keeping social distance, regularly washing hands, sanitizing and putting on face masks shall be adhered to in all public meetings with the community and other stakeholders during all phases of the project.



**Plate 1:** Public participation meeting

## **CHAPTER FIVE: POTENTIAL IMPACTS AND MITIGATION MEASURE**

### **5.1 Introduction**

This chapter describes and analyzes all the positive and negative environmental and social impacts associated with the proposed irrigation project.

### **5.2 Anticipated Positive Environmental and Social Impacts**

Some of the socio-economic impacts that need enhancing are also related to the environment and include;

- Reduced costs of production among the beneficiary households- The main objective of the project is to support micro irrigation. This will lead to increased availability of food crop products (maize, beans, potatoes, cabbage, carrots, tomatoes and onions) and milk. This is expected to contribute to food and nutrition security in the area. Crop production will no longer be solely reliant on prevailing rainfall thus farmers will have harvest at closer intervals
- Employment creation -The proposed project activities are expected provide short term employment opportunities to the host community. The proposed upgrading of the water intake of the Nganyuthe irrigation project will create employment opportunities for both skilled and unskilled workers. This will be beneficial both from the economic and social point of view. Economically, people employed will earn income which will improve their livelihoods and those of their families. Socially, the workers who will be engaged in productive employment will translate into reduced social ills at the same time fostering healthy interaction thus social integration.
- Improved provision of irrigation water and Food, nutritional and livelihoods security- One of the objectives of the project is to increase water for minor irrigation. This will contribute to the introduction of various irrigated crops including grains and assorted horticultural crops. These are likely to contribute to livelihood diversification.
- Livelihood diversification -One of the objectives of the project is to increase water for minor irrigation. This will contribute to the introduction of various irrigated crops including grains and assorted horticultural crops.
- Improved Well-being of Women and Children In most cases, at the household level, women and children bear the burden of fetching water. Other than the time spent in getting water from long distances, these practices have far reaching consequences on their health and well-being. Improved water accessibility would translate to time saving by the women and children. Time saved thus would be invested in agricultural production and other engagements that could bring financial benefits to the family and increased time for studies for the children. This will also reduce exposure to security risks caused by travelling long distances in search for water.

### **5.3 Anticipated negative impacts and mitigation measures in preparatory phase**

#### **a) Conflicts during the actual site survey and design**

During the onset of the implementation stage major activity includes sites surveying and design. When surveyors, engineers and even the contractors access the considered area for excavation etc. conflicts may arise especially among the members of the local communities who may have encroached the public lands in terms of: roads, streams, water, electricity and other common infrastructures. Certain valuables may also be encountered along the excavation routes/sites either by accident or by chance; including unintended extension of excavation depths. Such issues can become a source of conflicts.

#### **Mitigation measures**

- The surveying team should be guided by local members with a surveyed map of the locality for safety and success purposes.
- Adequate mobilization and public participation throughout the phases of the project.
- Always ensuring that distribution networks are done along public lands and where individual or private land is affected an MOUs is established.

#### **b) Risk of spread of covid 19**

The pre-construction stage is characterized by various consultative activities most of which brings relatively large numbers of stakeholders together. For efficient and meaningful engagement, a wide range of individual participants, groups in the local community and other stakeholders are be involved. The types of consultations to be used to pass information through public meetings, electronic means, print materials and one-on-one basis meetings. If carried out conventionally, these activities would lead to close interaction between the proponent and his/her representatives and the community members leading to a high risk of spreading COVID-19 among community members during the consultation process.

#### **Mitigation measures**

- alternative means of consultation especially use of electronic means
- ensure social distancing, regular washing of hands and sanitizing
- all the participates to wear appropriate PPEs.i.e., masks of the right quality
- the elderly and vulnerable members of the community should not be invited physically to the consultation meetings

### **5.4 Anticipated negative impacts and mitigation measures during construction phase**

#### **a) Loss of Biodiversity**

Due to increased human activities during construction, trampling, compaction of nearby ground, and loss of biodiversity may be affected. Excavated soils may cover grass, crops or other vegetation leading to loss of habitats. Other possible impacts include landsides with the critical locations being: from the intake to the entry point tarmac roads (Gitinga), at the Kamuhihuria-Naromoru Girls secondary school and Nairobi River foot bridge areas.

#### **Mitigation measures**

- Only critically affected vegetation by the projects should be removed and re-established later.
- Fence off and or replant trees and grass along the pipelines.

- Protect sensitive vegetation from soils excavated.

#### **b) Accumulation of Solid Waste**

Solid waste (soils) will be generated from excavation work, use of packaging materials and organic waste from workers. The solid wastes generation is envisaged to be minimal and will result only during pipe network preparation and excavations.

##### **Mitigation measures**

- Segregation of solid waste and employing appropriate disposal or reuse mechanisms.
- Provide toilet facilities away from the site but accessible to workers.
- A specific area will be designated for collecting all solid waste generated within the site and appropriate containment done.
- Landscaping should be done for all areas that are disturbed.

#### **c) Deterioration of Air Quality and Noise Generation**

During construction phase, there will be noise from human activities and vibration from the compacting machinery. The noise is predicted to be lower than the accepted threshold levels and will only occur for a short time. There can also be dust generated from excavation.

##### **Mitigation measures**

- The leaders will sensitize members of the community to use dust masks, best ergonomics and other protective equipment to the workers.
- Construction will be done during the daytime only to reduce disturbances.
- Digging and Excavation should be done very early, late evening and during cool seasons to avoid excessive dusts.
- Equipment will be well serviced to reduce unnecessary vibrations and noise.
- Manual labour will be encouraged largely where possible.
- Any engine should be switched off when not in use.

#### **d) Increase in Soil Erosion**

Due to removal of soil cover and excavation works, soils will be exposed to erosion and surface run offs which could have an impact downstream and on future land use.

##### **Mitigation measures**

- Stabilize the excavated and heaped soils
- Replant trees and grasses around the reservoirs and pipe channels.
- Landscape along the water ways to avoid siltation.
  - Protect the dams by fencing off the intake site.
  - Sustainable soil conservation measures on water ways and lagoon areas should be carried out.

#### **e) Water pollution**

Construction activities at the intake which will include excavation may lead to pollution of the water. The topography of the site is very steep and therefore any disturbance and uncontrolled excavation will lead to soil erosion and pollution.

#### **Mitigation measures**

- Controlled excavation should be taken to prevent any possibility of soil erosion
- Compacting of soils around the river should be carried out.
- Farmers around the intake should practice sustainable farming to avoid soil erosion and pesticides being drained to the river.
- Planting of bamboos and other riparian friendly trees should be planted immediately after the construction of the intake with advice from the sub county forester.

#### **f) Health and Safety of Workers and Local community**

##### **❖ Workers**

During constructions and excavation of pipelines, workers and the community will be exposed to a number of health, safety and welfare concerns. These include risk of dusts, slipping and accidental falls, working under height, dust, or injury from equipment, tools and availability of portable water. Excavated materials may also congest the site. Accidents from slippery, steep and unstable ground could compromise workers safety. The issues of covid-19 and allergy from excessive dust among the sensitive workers can be critical. The workers will also need toilet facilities.

#### **Mitigation measures**

- Provide steps to access the base of the reservoir.
- Supply workers with potable water during construction phase.
- Toilets should be accessible by workers at the appropriate sites.
- Avoid overcrowding during construction and mostly so during wet season.
- Recruit workers from local area as much as possible and consider youth and gender sensitivity.
- Provide protective clothing and equipment e.g., overalls, dust masks and others.
- Develop an emergency response plan and safety measures.
- Work during day time only.
- Observe covid-19 and other health protocols

##### **❖ The Local Community**

The construction works may interfere with livestock movement and pedestrians along an access road to the site if there is concentration at the particular sites.

#### **Mitigation measures**

- The sites should be rounded off with visible tapes to reduce interference during work.
- All threats to safety should be reported immediately to the community leaders for immediate action.

- Display clear and visible warnings e.g. “ DO NOT MOVE CLOSE TO THE TRENCH or “DANGER / HATARI” At the area prone to these dangers and use language that is understood by all.
- Emergency telephone contact numbers should be displayed at various points.
- The communities should be restricted and unauthorized visitors not allowed to the construction sites.
- Regular sensitization on probable risks to be mandatory during barazas and other meetings in / around the relevant sites. Schools and churches to also educate the school children and farmers respectively.
- Worked sites should be closed immediately and no open trenches shall be left overnight.

**g) Gender based violence and sexual harassment (GBV/SH)**

This impact is triggered during project construction phase when the contractor(s) fail to comply with the following provisions:

- Gender Inclusivity requirements in hiring of workers and entire project management as required by Gender Policy 2011 and 2/3 gender rule; and
- Failure to protect human risk areas associated with, disadvantaged groups, interfering with participation rights, and interfering with labour rights.

**The proposed Mitigation Measures of Human Rights and Gender Requirements are:**

- Ensure clear human resources policy against sexual harassment that is aligned with national law.
- Integrate provisions related to sexual harassment in the employee Code of Conduct.
- Ensure appointed human resources personnel to manage reports of sexual harassment according to policy.
- The contractor(s) shall require employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse.
- The contractor(s) will implement provisions that ensure that GBV at the community level is not triggered by the project, including:
- Effective and on-going community engagement and consultation, particularly with women and girls.
- Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; etc.
- The contractor shall develop specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment.
- The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.

**h) Sexual Exploitation and Abuse by project workers against community members**

This impact refers to sexual exploitation and abuse (SEA) committed by project staff against communities and represents a risk at all stages of the project, especially when employees and community members are not clear about prohibitions against SEA in the project.

**The proposed mitigation measures to risks of SEA include:**

- Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank’s Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).
- The SEA action plan will include how the project will ensure necessary steps are in place for:
  - ✓ Prevention of SEA: including Code of Conducts and ongoing sensitization of staff on responsibilities related to the Code of Conducts and consequences of non-compliance; project-level IEC materials.
  - ✓ Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management.
  - ✓ Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights.

Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers

**i) Risks of child abuse**

This impact is triggered during project construction phase when the contractor(s) fail to comply with the provisions of the Children’s Act section 10 and sexual offences 2003.

**Mitigation measures**

- Prevention of child abuse: including Code of Conducts and ongoing sensitization of staff on responsibilities related to the Code of Conducts and consequences of non-compliance
- Response to child abuse: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management
- Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM

**5.5 Anticipated negative impacts and mitigation measures on operational phase****a) Water quality**

Vegetable growing may require increased use of pesticides and chemical fertilizers around the project. Farmers and workers may dispose pesticides washings and containers and contaminate the water reservoirs including contamination of the soils. Workers may also wash in the water

sources. Use of inorganic fertilizers may also contaminate the water. All these affect the water quality and compromise health of water users. Livestock may also contaminate the water or objects may be thrown into the channels or ponds;

#### **Mitigation measures**

- By laws should take care of water quality issues associated with livestock and children
- Train on safe use of pesticides and disposal of washings and waste containers
- Drip irrigation and other areas requiring use of pesticides and fertilizers should be located down stream
- Train or sensitize community on Agrochemical waste management.

#### **b) Project Sustainability**

For effective sustainability of the project, record keeping should be done throughout the project lifecycle for the purpose of monitoring and evaluations. The management committee may fail to run the facilities that may lead to the projects closure.

#### **Mitigation measures**

- The records that must always be kept include: licenses, certificates, legal agreements on land use and all other documents relating to the site ownership transfers. This is for reference and administrative purpose in future.
- The by-laws should be enforced throughout the project lifecycle.
- All disputes will be solved internally where they are not criminal in nature and more serious ones referred to the police or the local Chief.

#### **c) Loss of Biodiversity**

During the operation phase human movement will increase in the farm thus leading to destruction of vegetation that may lead to soil erosion and loss of habitats.

#### **Mitigation measures**

- The walk ways should be designated.
- Soil conservation techniques should be addressed mostly on critical areas e.g. building check dams.
- Adaptable tree species should be introduced mostly on water ways and other affected areas by human activities.
- Misuse and water spills should always be minimized and spillways should also be allocated on appropriate location so as to reduce chances of floods downwards during heavy down pour.

#### **d) Siltation**

This may be caused by soil eroded from the catchment area that is usually bare during dry season. The runoff may erode the topsoil in the areas that may lead to growth of invasive weeds in the affected sites. Poor workmanship or failure to maintain the distribution network may lead to closure of the project.

#### **Mitigation measures**

- Soil conservation should be addressed seriously.
- By-laws to ensure operation and maintenance.

- Training project members on maintenance of the facility.
- Use of the recommended materials and skilled labour for technical work.

#### e) **Personal Health and Safety**

Health issues are a major concern globally; therefore, hazards associated with diseases must be dealt with. Safety may be compromised when children play around the reservoir. The operation of the facility is likely to result in the following.

- Increased movement of human leading to congestion on the available paths and walkways which will cause soil erosion in the long run.
- Accidental falls into the channels, tanks, dams or lagoons.
- Consumption of water before treatment
- Breeding of mosquito from the stagnant water during irrigations

#### **Mitigation measures**

- Construct the facilities as per the recommended plans that include use of drips, fencing of intake, outlets, metering, provision of temporal toilets during construction, water pumping site and paths among others.
  - Develop By-laws that are acceptable to all.
  - Train on water use efficiency with conservation aspects being integrated.
  - Fish should be introduced in lagoons, intake dams and tanks so as to feed on mosquito larvae.
  - Restrict livestock and human movement inside the reservoir by fencing the intake and other vulnerable sites such as water storage tanks' installation points.
- . Water Demand Conflicts

During dry seasons water volume will reduce especially along the lowlands and members may seek more water for farming purposes which could lead to conflicts among users of the water project.

#### **Mitigation measures**

- Demonstrate on drip irrigation and green houses
- Schedule should be set for reduced water use during the dry season
- Other water sources should be introduced to curb water shortage.
- Penalties and fines should be introduced.
- Establish proper complains, conflicts and grievances resolution mechanisms (GRM).

### **5.6 Anticipated impacts during decommissioning phase**

The use of intake may come to an end due to changes in rainfall patterns and water harvesting technologies, deforestation, desertification or siltation. Other negative impacts during decommissioning may result from;

- Construction waste materials and other waste debris on site could contaminate the sites.
- Materials generated from decommissioning of project site- clearing of vegetation and soil erosion.

- Socio-economic impact- increased poverty levels and lack of business opportunities to suppliers of fresh products.
- The vulnerable members such as women and children may again become affected adversely in various ways e.g., spending more time to look for water, more labor on school children, dis-empowerment due to loss of livelihood, income, and food insecurity. among other aspects.

### **Mitigation measures during decommissioning**

#### **1) Site contamination**

- All construction waste materials should be disposed off immediately or reused for other purposes.

#### **2) Authentic value of the land**

- Carry out re-vegetation of the site to the donor satisfaction.
- During decommissioning, appropriate surface run-off controls will be undertaken to minimize erosion.
- Constant monitoring and inspection of the decommissioning works to prevent accidents.
- Capacity building of the community with alternative water-sources, and Income generation projects as response to the loss of livelihood, income, and food insecurity.

## **CHAPTER SIX: ENVIRONMENTAL AND SOCIAL MANAGEMENT & MONITORING PLAN (ESM&MP)**

### **6.1 Introduction**

This ESMMP outlined in this chapter establishes mitigation measures and monitoring requirements. It identifies the parties responsible for implementation of the EMMP, their roles, and timing of their inputs to avoid environmental damage in accordance with Environment Management and Coordination Act, 1999, Environmental (Impact Assessment and Audit) Regulations 2003. The implementation of the ESMMP shall either be the responsibility of the contractor, proponent or the project community management committee as the case may be. Also outlined are the specific monitoring indicators as well as the costs of implementing of each critical action plan.

## 6.2 Environmental and Social Management Plan (ESMP)

**Table 6.1:** The Environment and Social Management and monitoring Plan

<b>ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN</b>						
<b>ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING PLANNING PHASE</b>						
<b>social impact</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Conflicts during the actual site survey and design	-all surveying procedures should be carried out. - mobilization of community members -signing of MOUs in for the private lands	Dully compiled designs and SPR reports	Committee SPR Expert	No of MOUs and wayleaves	One month	20,000
Risk of covid 19 spread	-social distancing -wearing of appropriate face masks -regular washing of hands and sanitizing	Watering points, displayed sanitizers, people wearing masks	Committee, SPR expert	No of Covid 19 cases No of purchased PPEs	One month	10,000
<b>Sub - total 1</b>						<b>30,000</b>
<b>ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING CONSTRUCTION PHASE</b>						
<b>Environmental Impacts</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Loss and disturbance	✓ -minimal vegetation	trees planted total area	County Forester Contactor	Tree dispatch reports Tree felling permits	Six months	20,000

of biodiversity	<ul style="list-style-type: none"> <li>✓ clearing and trimming rather than cutting</li> <li>✓ -proponent to establish a nursery</li> <li>✓ -obtaining tree felling permits were necessary</li> </ul>	landscape	Community	given		
Accumulation of solid waste	<ul style="list-style-type: none"> <li>✓ -segregation of waste</li> <li>✓ -provision of sanitary facilities</li> <li>✓ -waste collection points</li> <li>✓ -Reuse, recycle and reduce</li> </ul>	Waste facilities available Sanitary facilities	Contractor Community Sub county environment and sanitation officer	Waste collection reports	Six months	30,000
Soil erosion	<ul style="list-style-type: none"> <li>✓ -controlled soil excavation</li> <li>✓ -tree planting and landscaping of the excavate areas</li> <li>✓ -sustainable land and soil management measures</li> <li>✓ -training and demonstration on SLM</li> </ul>	trees planted gabions constructed along sensitive areas training conducted soil conservation structures constructed	Contacto Community Sub county environment and agricultural officer	Tree purchase receipts Training reports No of structure constructed	Through the project cycle	60,000
Water pollution	<ul style="list-style-type: none"> <li>✓ -safe use of pesticides and fertilizers</li> <li>✓ -training the</li> </ul>	trainings done to the farmers conservation structures	County program coordinator Contractor Community	Training reports Trees purchased Payments for structures constructed	Six months	50,000

	farmers on integrated pesticides management ✓ -sustainable farming methods ✓ -construction soil conservation structures ✓ tree planting	constructed number of water pollution complaints	Sub county water and agricultural officer	-resolved complaints and their documentations		
<b>Sub-total 2</b>	✓					<b>160,000</b>
<b>Social Impacts</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Gender based violence and sexual harassment (GBV/SH)	✓ -Ensure clear human resources policy against sexual harassment that is aligned with national law  ✓ -The contractor(s) shall require employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct	-GBV/SH trainings done to the community members and the contractors team -complaints submitted in relation to GBV/SH -signing of code of conduct against GBV/SH	Department of social development Contractor Community CPCU Local administration	Signed code of conduct Record of complaints registered and resolved Reports and minutes on trainings done	Six months	60,000

	<p>with specific provisions on protection from sexual exploitation and abuse</p> <ul style="list-style-type: none"> <li>✓ -The contractor(s) will implement provisions that ensure that GBV at the community level is not triggered by the project, including: <ul style="list-style-type: none"> <li>✓ Effective and on-going community engagement and consultation, particularly with women and girls.</li> <li>✓ Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; etc.</li> </ul> </li> <li>✓ The contractor</li> </ul>					
--	--	--	--	--	--	--

	<p>shall develop specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment.</p> <p>✓ The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.</p>					
Child abuse	<p>✓ Comply with all relevant local legislation, including labor laws in relation to child labor specifically provisions of Kenya's Employment Act, 2007 (Cap. 226) Part VII on</p>	<p>-child abuse trainings done to the community members and the contractors team</p> <p>-complaints submitted in relation to child</p> <p>-signing of</p>	<p>Department of children welfare</p> <p>Department of social development</p> <p>Contractor Community</p> <p>CPCU</p> <p>Local administration</p>	<p>Signed code of conduct</p> <p>Record of complaints registered and resolved</p> <p>Reports and minutes on trainings done</p>	Six months	60,000

	<p>protection of children against exploitation and Children's Act section 10 and sexual offences 2003.</p> <ul style="list-style-type: none"> <li>✓ The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.</li> <li>✓ All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behavior.</li> <li>✓ Children under the age of 18 years will not be hired on site as provided by Child Rights</li> </ul>	<p>code of conduct against child abuse</p>				
--	---	--	--	--	--	--

	Act (Amendment Bill) 2014.					
Grievances and conflicts	<ul style="list-style-type: none"> <li>✓ Training the community on Grievance redress mechanism</li> <li>✓ Development of Grievance Redress Mechanism procedures</li> <li>✓ Pre-emptive community liaison structure conflict resolution</li> <li>✓ Documentation of the complaints and conflicts submitted</li> <li>✓ Following of all the rules that are in relation to the grievance recorded</li> </ul>	<p>No of signed code of conduct by the workers</p> <p>Community user's development plan</p> <p>Grievance Redress register with registered complaints</p>	<p>Department of social development</p> <p>Contractor</p> <p>Community CPCU</p> <p>Local administration</p>	<p>Minutes of the meetings</p> <p>Reports of the training</p> <p>Attendance register</p> <p>Grievance Redress register</p>	Six months	70,000
Health, Safety of workers and local community	<p>Workers</p> <ul style="list-style-type: none"> <li>✓ Provide steps to access the base of the reservoir.</li> <li>✓ Provide workers with potable water</li> <li>✓ Washrooms should be</li> </ul>	<ul style="list-style-type: none"> <li>✓ No. of sensitization meetings done</li> <li>✓ No of workers using PPEs on use by</li> </ul>	<p>County Director</p> <p>Occupational Health and Safety</p> <p>CPCU</p> <p>Project management committee</p> <p>Contractor</p>			

	<p>accessible from the sites</p> <ul style="list-style-type: none"> <li>✓ Avoid overcrowding during construction and mostly so during wet season.</li> <li>✓ Recruit workers from local area and consider gender sensitivity.</li> <li>✓ Provide PPE e.g. overalls and dust masks</li> <li>✓ Develop an emergency response plan and safety drills.</li> <li>✓ Observe covid-19 and other health procedures including SOPs</li> <li>✓</li> </ul>	<p>those involved at the demolition site</p> <ul style="list-style-type: none"> <li>✓ Trained workers on First-aid</li> <li>✓ Incidence report</li> <li>✓ Contingency plan for accident response in place</li> <li>✓ Number of COVID-19 sensitizations conducted and Records of participants etc.</li> </ul>				
	<p>Local community</p> <ul style="list-style-type: none"> <li>✓ Fence off the intake site</li> <li>✓ All threats to safety should be reported for immediate action.</li> <li>✓ Display clear and visible warnings</li> </ul>	<ul style="list-style-type: none"> <li>✓ Emergency contacts at the site</li> </ul>				

	e.g. “ NO ACCESS TO THE SITE” or “DANGER/HATARI” ✓ Use of manual and local labor ✓ Undertaking of work mainly during day time					
<b>Sub-total 3</b>	✓					<b>190,000</b>
<b>ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING OPERATIONAL PHASE</b>						
<b>Environmental Impacts</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Water quality – fertilizer, pesticides suspended solids	✓ By laws should take care of water quality issues associated with livestock and children ✓ Train on safe use of pesticides and disposal of washings and waste containers ✓ Crop growing areas requiring use of pesticides and fertilizers should be identified and zoned downwards.	✓ trainings done to the farmers ✓ conservation structures constructed ✓ number of water pollution complaints	✓ Project management committee ✓ CPCU ✓ Sub county water and irrigation officers	✓ Tracking records ✓ Licenses ✓ Photos	2yrs	40,000

	<ul style="list-style-type: none"> <li>✓ Construct silt trapping sieves, and sedimentation ponds including Tanks and check dams where possible.</li> <li>✓ Proper observation on used chemicals including control on leakages and spills to avoid contamination of soil.</li> </ul>					
Loss of biodiversity	<ul style="list-style-type: none"> <li>✓ The walk ways should be designated in the farmland.</li> <li>✓ Soil conservation techniques should be addressed mostly on critical areas e.g. built check dams.</li> <li>✓ Adaptable tree species should be introduced mostly on water ways and other affected areas by human activities.</li> <li>✓ Spill way should be located</li> </ul>	<ul style="list-style-type: none"> <li>✓ Vegetation cleared</li> <li>✓ Established nursery</li> <li>✓ Trees planted</li> </ul>	<ul style="list-style-type: none"> <li>✓ Project management committee</li> <li>✓ CPCU</li> <li>✓ Sub county water and irrigation officers</li> </ul>	<ul style="list-style-type: none"> <li>✓ Tree planting register</li> <li>✓ Photos</li> <li>✓ Reports</li> </ul>	2yrs	30,000

	appropriately to avoid flooding downstream.					
Generation of Solid waste	<ul style="list-style-type: none"> <li>• Provide solid waste facilities (waste bins) for temporary disposal of waste before disposal to appropriate and designated locations.</li> <li>• Liaise with the County Government of Nyeri and local NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes</li> <li>✓ All materials must be removed and recycled/reused as far as possible</li> </ul>	<ul style="list-style-type: none"> <li>• Quantity of waste collected</li> <li>✓ No. of waste receptacles</li> <li>✓ No. of licensed waste handlers</li> </ul>	<ul style="list-style-type: none"> <li>✓ Project management committee</li> <li>✓ CPCU</li> </ul>	<ul style="list-style-type: none"> <li>✓ Tracking records</li> <li>✓ Photos</li> <li>✓ Copies of license</li> </ul>	3 months	30,000
Siltation	<ul style="list-style-type: none"> <li>✓ Soil conservation should be addressed seriously.</li> <li>✓ By-laws to ensure operation and</li> </ul>	<ul style="list-style-type: none"> <li>✓ Visible soil erosion control measures in place</li> <li>✓ Areas</li> </ul>	<ul style="list-style-type: none"> <li>✓ Contractor/Supervising engineer/work foreman</li> </ul>	<ul style="list-style-type: none"> <li>✓ Photos of original site and current site status</li> </ul>	3 months	20,000

	<p>maintenance.</p> <ul style="list-style-type: none"> <li>✓ Training project members on maintenance of the facility.</li> <li>✓ Use of the recommended materials and skilled labor for technical work.</li> </ul>	already landscaped				
<b>Subtotal 4</b>						<b>120,000</b>
<b>Social Impacts</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Water demand conflicts	<ul style="list-style-type: none"> <li>✓ Train locals and community beneficiaries on efficient water use</li> <li>✓ Development of water rationing plans</li> <li>✓ Prioritize efficient technologies such as drip irrigation for the project.</li> <li>✓ Schedule should be set for growing drought resistant crops during dry spell season</li> <li>✓ Other water sources should be</li> </ul>	<ul style="list-style-type: none"> <li>✓ trainings done to the farmers</li> <li>✓ conservation structures constructed</li> <li>✓ number of water pollution complaints</li> </ul>	<ul style="list-style-type: none"> <li>✓ Project management committee</li> <li>✓ CPCU</li> <li>✓ Sub county water and irrigation officers</li> </ul>	<ul style="list-style-type: none"> <li>✓ Minutes of the meetings</li> <li>✓ Reports of the training</li> <li>✓ Attendance register</li> <li>✓ Grievance Redress register</li> </ul>	2yrs	50,000

	<p>introduced to curb water shortage.</p> <ul style="list-style-type: none"> <li>✓ By laws should be followed and enforced.</li> <li>✓ Penalties and fines should be introduced.</li> <li>✓ Drip irrigation should be used</li> <li>✓ Untreated water purely used for irrigation and not for domestic use purposes.</li> <li>✓ Come up with and adhere to proper GRMs</li> </ul>					
Spread of covid 19	<ul style="list-style-type: none"> <li>✓ project management committee will develop a SOPs for managing the spread of Covid-19 during project execution. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health</li> </ul>	<p>Availability of:</p> <ul style="list-style-type: none"> <li>✓ SOP(s),</li> <li>✓ Training material,</li> <li>✓ PPE,</li> <li>✓ Sanitizing facilities,</li> <li>✓ Installed handwashing equipment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Project management committee</li> <li>✓ CPCU</li> <li>✓ Public Health</li> </ul>	<ul style="list-style-type: none"> <li>✓ SOPs,</li> <li>✓ Project assessment reports,</li> <li>✓ Purchase orders/receipts,</li> <li>✓ Photos</li> </ul>	Continuous	40,000

	<p>Directives, and site-specific project conditions.</p> <ul style="list-style-type: none"> <li>✓ Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel</li> <li>✓ Maintaining social distancing at least 2 meters.</li> <li>✓ All workers and visitors accessing facility every day shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs.</li> <li>✓ Install handwashing facilities with adequate running water and soap</li> </ul>					
<b>Sub-total 5</b>						<b>90,000</b>
<b>ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING DECOMMISSIONING PHASE</b>						

<b>Environmental Impacts</b>	<b>Proposed mitigation measure</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of verification</b>	<b>Time frame/frequency</b>	<b>Estimated cost in Ksh</b>
Site contamination	<ul style="list-style-type: none"> <li>✓ All construction waste materials should be disposed off immediately or reused for other purposes</li> <li>✓ Uproot all pipes and distribution networks</li> <li>✓ Change of user and reuse pipeline for alternative purposes</li> <li>✓ Reuse, recycle and reduce</li> <li>✓ Preparation and submission of a decommissioning plan to the NEMA</li> </ul>	<ul style="list-style-type: none"> <li>✓ Quantity of debris collected</li> <li>✓ No. of licensed waste handlers</li> <li>✓ Approved decommissioning plan</li> </ul>	<ul style="list-style-type: none"> <li>✓ Contractor</li> <li>✓ Project management committee</li> <li>✓ CPCU</li> <li>✓ NEMA</li> </ul>	<ul style="list-style-type: none"> <li>✓ Waste collection register</li> <li>✓ Work tickets for waste handlers</li> <li>✓ Decommissioning plan</li> </ul>	6months	50,000
Reduced aesthetic value of the site	<ul style="list-style-type: none"> <li>✓ Do re-vegetation of the site to the community satisfaction.</li> <li>✓ During demolition, appropriate surface run-off controls will be</li> </ul>	<ul style="list-style-type: none"> <li>✓ Number of trees planted</li> <li>✓ Size of the area landscaped</li> <li>✓ photos of the decommissioning</li> </ul>	<ul style="list-style-type: none"> <li>✓ Contractor</li> <li>✓ Project management committee</li> <li>✓ CPCU</li> <li>✓ NEMA</li> </ul>	<ul style="list-style-type: none"> <li>✓ Decommissioning plan</li> <li>✓ Tree dispatch reports</li> <li>✓ Tree planting and monitoring reports</li> <li>✓ Site monitoring reports</li> </ul>	3 months	20,000

	<ul style="list-style-type: none"> <li>undertaken to minimize erosion.</li> <li>✓ Constant monitoring and inspection of the demolition works to prevent accidents</li> <li>✓ Landscaping of affected/decommissioned sites.</li> <li>✓ Preparation and submission of a decommissioning plan to the NEMA</li> </ul>	<ul style="list-style-type: none"> <li>✓ oned site</li> <li>✓ site monitoring reports</li> <li>✓ approved decommissioning plan</li> </ul>				
Loss of employment	<ul style="list-style-type: none"> <li>✓ Prior notification of the facility management, employees, local community members and relevant local leaders</li> <li>✓ Where possible provide an alternative source of livelihood</li> </ul>	<ul style="list-style-type: none"> <li>✓ Notifications issued</li> <li>✓ No. of forums held</li> </ul>	Contractor Project management committee CPCU	<ul style="list-style-type: none"> <li>✓ Memos</li> <li>✓ Letters</li> </ul>	10,000	
Subtotal 6					80,000	
<b>Total ESMMP cost</b>						<b>670,000</b>

## **CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Conclusions**

This report has highlighted the potential positive and negative impacts of the proposed projects. The report has also looked at the mitigation measures available to reduce the negative impacts and conclude that:

- These projects will have more positive impacts than negative impacts.
- The projects will result in huge possible positive social and environmental benefits that are in line with current development policies of this country. The social and environmental benefits will make it worthwhile to invest in environmental conservation.
- There could be probable significant negative environmental impacts, which however can be mitigated against as shown in the various phases in the ESMMP.
- The project will not have a significant interference with water resources since it is replenishable.

### **6.2 Recommendations**

The opinion of the ESIA team and the Lead Expert on this report are that:

- Plant at least two (2) rows of vegetation to cover pipelines along the boundary next to the network roads.
- Warning signs for both Motorists and Pedestrians-be put at appropriate locations during construction.
- De-silting at the intake in three months intervals
- All road crossings and culverts be constructed as per Ministry of Roads specifications.
- Serious sensitization on soil and water conservation should be undertaken.
- The intake should be fenced off to restrict livestock and human movement at the site.
- The project committee should train personnel on Operation and Maintenance of the facility for sustainability.
- The contractor or proponent or their representatives will be responsible for implementing the ESMMP depending on the phase of the project.
- The proponent applies for all licenses that are required from the authorities concerned.
- The proponent be granted an ESIA license.
- The costs of implementing the ESMMP will be incorporated in the project bills of quantities.

## REFERENCE

1. Ministry of Agriculture: Farm Management Handbook of Kenya, Vol 11, 2nd Edition, 2006.
2. National Land Commission Act no. 5 of 2012 Revised edition 2016 [2015], National Council for Law reporting with the Authority of the Attorney-General, [www.kenyalaw.org](http://www.kenyalaw.org).
3. Republic of Kenya (1970). Penal Code (Cap 63) .Government Printer, Nairobi, Kenya.
4. Republic of Kenya (1994); National Environment Action Plan (1994), *Revised Edition 2007*, Government Printer, Nairobi.
5. Republic of Kenya (2003). Legislative Supplement No. 31, Legal Notice No. 101: The Environmental (Impact Assessment and Audit) Regulations, 2003. Government Printer, Nairobi.
6. Republic of Kenya (2006); Kenya Gazette Supplement Acts, Legal Notice No. 121: *Environmental Management and Coordination (Waste Management) Regulations, 2006*, Government Printer, Nairobi.
7. Republic of Kenya (2007). Fire Risk Reduction Rules, 2007. Government Printer, Nairobi, Kenya.
8. Republic of Kenya (2007). Laws of Kenya: Occupation Safety and Health Act, 2007. Government Printer, Nairobi.
9. Republic of Kenya (2008). EMCA - Air Quality Standards Regulations, 2008. Government Printer, Nairobi, Kenya.
10. Republic of Kenya (2008). The Kenya Vision 2030, Government of Kenya, Government printer, Nairobi.
11. Republic of Kenya (2009). Building Code (2000). Government Printer, Nairobi, Kenya.
12. Republic of Kenya (2009); Kenya Gazette Supplement Acts, *Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009*, Government Printer, Nairobi.
13. Republic of Kenya (2010); Laws of Kenya: Constitution of Kenya, 2010, Government Printer, Nairobi.
14. Republic of Kenya (2011); Laws of Kenya: *National Construction Authority Act No. 41 of 2011*, Government Printer, Nairobi.
15. Republic of Kenya (2012), Employment Act, (Cap 226), Revised; 2008, 2012 editions, Government printer, Nairobi, Kenya.
16. Republic of Kenya (2012), The Work Injury Benefits Act (WIBA) (2007) Revised 2012; Government printer, Nairobi, Kenya.

17. Republic of Kenya (2012). National Environmental Policy, Revised 2012, Government Printer, Nairobi.
18. Republic of Kenya (2012). National Water Policy, 2012, Government Printer, Nairobi Republic of Kenya (1991). Sessional Paper No. 6 of 1999 on Environment and Sustainable Development, Government Printer, Nairobi.
19. Republic of Kenya (2012). The County Government Act, (2012), Government Printer, Nairobi.
20. Republic of Kenya( 2000) , The National Gender and Development Policy, Government Printer, Nairobi, Kenya
21. Republic of Kenya (1992/2003) Forestry Act Cap (385), Government printer, Nairobi, Kenya.
22. Republic of Kenya (2012). The Land Titles Act Cap 282, Government Printer, Nairobi, Kenya.
23. Republic of Kenya (2012). The National Land Policy, Government Printer, Nairobi.
24. Republic of Kenya (2012). The Physical Planning Act Cap 286, Government Printer, Nairobi, Kenya.
25. Republic of Kenya (2012).The Public Health Act, Laws of Kenya, Chapter 242.Government Printer, Nairobi, Kenya.
26. Republic of Kenya (2012); Environmental Policy Framework (2012), Government Printer, Nairobi.
27. Republic of Kenya (2016); Laws of Kenya: Water Act, 2016, Government Printer, Nairobi Republic of Kenya (2006); Kenya Gazette Supplement Acts, *The water Resources Management Rules (2007)*, Government Printer, Nairobi.
28. Republic of Kenya. Land Act NO. 6 of 2012, Revised Edition 2019 [2012], National Council for Law Reporting with the Authority of the Attorney-General. [www.Kenya Law.org](http://www.Kenya Law.org).
29. Sessional Paper No. 6 of 1999 on Environment and Sustainable Development.
30. The Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006.
31. United Nations (1987); *World Commission on Environment and Development*, United Nations (1992); Convention on Biodiversity.
32. United Nations (1992); *Rio Declaration on Environment and Development*, Rio de Janeiro.

Annex 1: Proponent's registration certificate

Certificate No. 371

  
Republic of Kenya

MINISTRY OF LABOUR, SOCIAL SECURITY AND SERVICES

**Certificate of Registration of  
Self-help Group/Project**

*This is to certify that*

LOWER KAKURET WATER PROJECT OF P.O. BOX 46, KIGANJO.

Group Name / Project

K.E/PROJECT/3704/2016	6th Sept
Registration No.	Date of Registration
GATURIRI	KIEN I
Sub-location / Ward	Constituency
NAROKORO	KIENI EAST
Location	Sub County
KIENI EAST	NYERI
Division	County

**is registered with the Office of the Sub County  
Social Development Officer as a Self-Help  
Group / Project**

Name .....	Signature .....
County Social Development Coordinator	
Name GABRIEL G. MUTIRIA	Signature
Sub County Social Development Officer	

4th Sept 2017  
Date of Issue

*Note: The Contents of this Certificate should not be erased, altered or defaced in any way*



**Annex 2: KRA Pin**



**KENYA REVENUE AUTHORITY**

www.kra.go.ke

**PIN Certificate**

For General Tax Questions  
 Contact KRA Call Centre  
 Tel: +254 (020) 4999 899  
 Cell: +254(0711)099 899  
 Email: callcentre@kra.go.ke

Certificate Data : 11/10/2016  
 Personal Identification Number  
 P051616331D

This is to certify that taxpayer shown herein has been registered with Kenya Revenue Authority

**Taxpayer Information**

<b>Taxpayer Name</b>	LOWER KAKURET WATER PROJECT
<b>Email Address</b>	LOWERKAKUTA@GMAIL.COM

**Registered Address**

<b>L.R. Number :</b>	<b>Building :</b> N/A
<b>Street/Road :</b> KARICHEN - KAKURET	<b>City/Town :</b> NAROMORU
<b>County :</b> Nyeri	<b>District :</b> Kieni East District
<b>Tax Area :</b> Munyu	<b>Station :</b> Nyeri
<b>P. O. Box :</b> 46	<b>Postal Code :</b> 10102

**Tax Obligation(s) Registration Details**

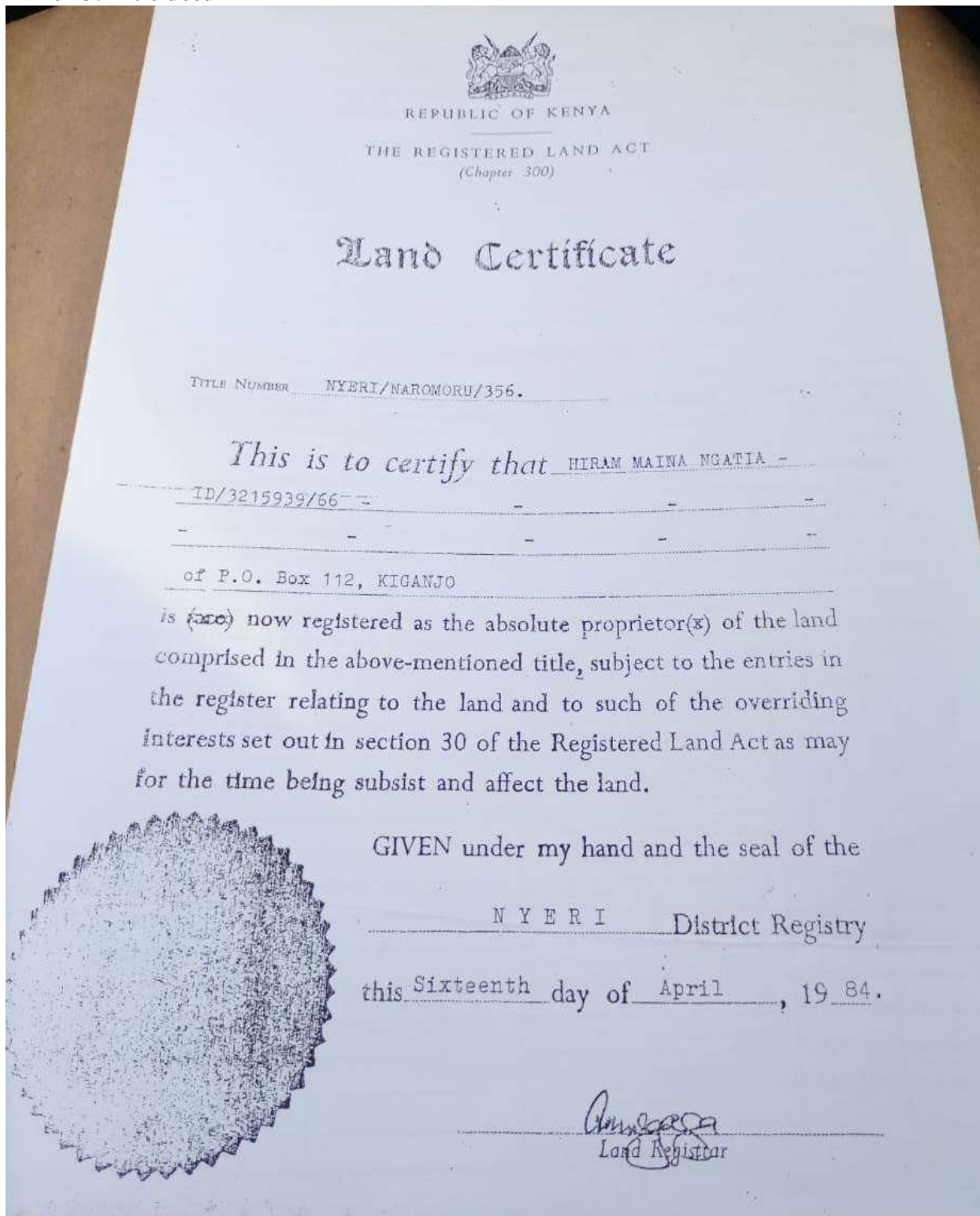
Sr. No.	Tax Obligation(s)	Effective From Date	Effective To Date	Status
1	Income Tax - Company	01/10/2016	N/A	Active

The above PIN must appear on all your tax invoices and correspondences with Kenya Revenue Authority. Your accounting end month is August unless a change has been approved by the Commissioner Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.



Disclaimer: This is a system generated certificate and does not require signature

**Annex 3: Title deed**



REPUBLIC OF KENYA

THE REGISTERED LAND ACT  
(Chapter 300)

# Land Certificate

TITLE NUMBER NYERI/NAROMORU/356.

*This is to certify that* HIRAM MAINA NGATIA

ID/3215939/66

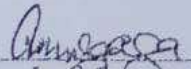
of P.O. Box 112, KIGANJO

is ~~(is)~~ now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and to such of the overriding interests set out in section 30 of the Registered Land Act as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the

NYERI District Registry

this Sixteenth day of April, 19 84.

  
Land Registrar

**Annex 4: WRA Permit**

The Chief Executive Officer,  
 Water Resources Management Authority,  
 P.O.Box 45250-00100,  
 Nairobi.



Form: WRMA 004  
 Catchment: Tana  
 WRMA ID: WRMA/40/02879  
 File: WPM/40/MRC\_4AA/10937/5

\*Delete words not required

CONDITIONS OF AUTHORISATION	DETAILS
Measuring device	MEASURING DEVICE TO BE INSTALLED
Controlling device	CONTROLLING DEVICE TO BE INSTALLED
Water Quality Report	ASSES THE QUALITY OF THE SOURCE FOR DOMESTIC/PUBLIC WATER AND SUBMIT THE REPORT AS/WHEN REQUIRED
Evidence of EPCA Compliance	
Soil and Water Conservation Plan	SUBMIT SOIL AND WATER CONSERVATION CERTIFICATE
Compensation Flow (m3/day)	
Inspection Milestones	
1	TO INSPECT THE SITE BEFORE START OF CONSTRUCTION
2	TO INSPECT DURING CONSTRUCTION
3	TO INSPECT THE WORKS AFTER COMPLETION
Notification Requirements	
	NOTIFY THE OFFICE WHEN CONSTRUCTION COMMENCES
	NOTIFY THE OFFICE WHEN WORKS ARE COMPLETE
Storage	TO CONSTRUCT ENOUGH STORAGE FACILITY FOR IRRIGATION WATER
Intake	
Test pumping	
Other Technical Details	
	SELF REGULATING WEIR TO BE CONSTRUCTED.
	WATER FOR IRRIGATION TO BE ABSTRACTED FROM FLOOD FLOW ONLY.
Effluent Discharge Requirements	

The Chief Executive Officer,  
Water Resources Management Authority,  
P.O. Box 45250-0100,  
Nairobi.



Form: WRMA 004  
Catchment: Tana  
WRMA ID: WRMA/40/102879  
File: WRMA/40/102879/4AA/109375


4. This Authorization will be automatically cancelled, when the authorized period expires, without any further reference to you unless extension of time limit is applied for prior to date of expiry.

5. The following details/documents/fees are required to complete your application before a Permit may be issued:

- (a) FORM WRMA 008 COMPLETION CERTIFICATE DULY COMPLETED AND SIGNED
- (b) 7,500/= PERMIT FEE
- (c)
- (d)

**SIGNATURE**

Yours faithfully,

Signature of WRMA Officer	
Name of Officer	J. Mbororo
Position	ATCM UPPER TANA SD
Date of Signature	10 <sup>th</sup> NOVEMBER, 2017

## Annex 5: Land Use Consent

### REPUBLIC OF KENYA LAND AGREEMENT

**THIS AGREEMENT** made this 9<sup>th</sup> day of May 2019 **BETWEEN SIMON NDEGWA MAINA ID/11508866** of P.O Box 177 Narumoru hereinafter referred to as the 1<sup>ST</sup> PARTY which expression where the context admit shall include the heirs and personal representative of the one part

**AND**

**LOWER KAKURET SELF HELP GROUP WATER PROJECT (represented by its Official/Trustees DOMINICA NGIMA NGUNJIRI (Chairperson), JACOB KITHINJI MARETE (Secretary) and ROSE NYAWIRA MAINA (Treasurer)** hereinafter referred to as the 2<sup>nd</sup> party which expression where the context admit shall include its assigns and successors of the other part

WHEREAS the 1<sup>st</sup> party is entitled to a parcel of land out of LR. NYERI/NAROMORU/356 which parcel of land is registered in the name of HIRAM MAINA NGATIA (Deceased)

AND WHEREAS out of his share the 1<sup>st</sup> Party has agreed to have a parcel of land measuring 0.05 (Zero decimal Zero five) hectares to be excised and transferrèd to the 2<sup>nd</sup> Party

#### BY THIS AGREEMENT IT IS AGREED

1. The 2<sup>nd</sup> party shall construct a water tank for the group Project in the parcel of land.
2. In consideration for the parcel of land the 2<sup>nd</sup> Party shall supply the 1<sup>st</sup> Party with water and the 1<sup>st</sup> Party and or his heirs shall be supplied with water and no payment shall be made now or in future and none will be demanded by the 2<sup>nd</sup> party.
3. The ground location of the parcel of land has been agreed upon and from the date hereof the 2<sup>nd</sup> Party will take possession and be at liberty to commence development.
4. The 1<sup>st</sup> Party shall have commenced the process of having his share of land registered in his name by commencing succession proceedings.
5. After the 1<sup>st</sup> Party is registered as a proprietor for his share, the 1<sup>st</sup> Party shall apply for consent to effect subdivision.
6. The Surveyor fees and land Control Board charges for subdivision will be paid by the 1<sup>st</sup> Party.

Annex 6: Expert's EIA/EA licence

FORM 7

(r.15(2))



**NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)**  
**THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT**  
**ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE**

License No : NEMA/EIA/ERPL/12999

Application Reference No: NEMA/EIA/EL/17181

M/S **CHARLES KIRIMI MUTHINJA**  
(individual or firm) of address

P.O. Box 1552-10100, NYERI

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**  
registration number **1622**

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

Issued Date: **7/16/2020**

Expiry Date: **12/31/2020**

  
Signature.....  
  
(Seal)  
**Director General**  
**The National Environment Management Authority**



## Annex 7: Screening Checklist

### Screening Checklist

**KENYA CLIMATE SMART AGRICULTURE SCREENING CHECKLIST FOR ALL SUB-PROJECTS CARRIED OUT IN A SPECIFIC LOCATION** (Filled and prepared by county level staff and community committee member and approved by the County Director of Environment (CDE) and NPCU environmental and social experts)

Project investment name

LOWER KAKURET WATER PROJECT

County and location:

NYERI COUNTY, SUB-COUNTY KIENI EAST, KIENI CONSTITUENCY, THEGU WARD

Estimated cost (USD): 24,854,843.90

Objectives of the

subproject: INCREASE FOOD PRODUCTION, CREATE EMPLOYMENT, REDUCE IMPACT OF CLIMATE CHANGE  
REDUCE EMISSION OF GREEN HOUSE GASES

Activities to be

undertaken: INOVIATION OF INTAKE, CONSTRUCTION OF 2 TANKS 225M<sup>3</sup>, INSTOLATION OF MAINS, SUB MAINS, CONVEYANCE PIPES

Will the Project?	Yes	No
1. Adversely affect natural habitats nearby, including forests, rivers or wetlands?		✓
2. Require large volumes of construction materials (e.g. gravel, stone, water, timber, firewood)?		✓
3. Use water during or after construction, which will reduce the local availability of groundwater and surface water?		✓
4. Affect the quantity or quality of surface waters (e.g. rivers, streams, wetlands), or groundwater (e.g. wells, reservoirs)?		✓
5. Be located within or nearby environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?		✓
6. Lead to soil degradation, soil erosion in the area?		✓
7. Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?		✓
8. Create pools of water that provide breeding grounds for disease vectors (for example malaria or bilharzia)?		✓
9. Involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes?		✓
10. Affect historically-important or culturally-important site nearby?		✓

11. Require land for its development, and therefore displace individuals, families or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries, forests or cultural resources, whether on a permanent or temporary basis?		✓
12. Result in human health or safety risks during construction or later?		✓
13. Involve inward migration of people from outside the area for use of services or other purposes?		✓
14. Result in conflict or disputes among communities?		✓
15. Affect indigenous people, or be located in an area occupied by indigenous people?		✓
16. Be located in or near an area where there is an important historical, archaeological or cultural heritage site?		✓
17. Result in a significant change/loss in livelihood of individuals?		✓
18. Adversely affect the livelihoods and /or the rights of women?		✓
19. May cause increased settlement or degradation of surrounding areas?		✓
20. Disposal of bush clearance residue may cause spreading of invasive species?		✓
21. Introduce a non-native animal or plant species?		✓
22. Involve handling of vet drugs and vaccines?		✓
23. Maintenance and management responsibilities have not been defined and accepted by concerned parties?		✓
24. Has not extensively consulted and included VMGs/IPs in the selection, planning and project benefits?		✓
25. Has not received wide community agreement on project including by VMGs/IPs?		✓

If you have answered Yes to any of the above, please describe the measures that the project will take to avoid or mitigate environmental and social impacts

---



---



---

What measures will the project take to ensure that it is technically and financially sustainable and well co-ordinated with other interventions in the area?

ALL FINANCYS, PROJECT COMUNAL WORK HARD WORKING, CHAIR PERSON & COMITEK WILL MANAGE WELL

*If the answer to any of the questions is "Yes", please use the indicated Annexes or sections(s) of the ESMF, RPF and VMGF for guidance on how to avoid or minimize typical impacts and risks.*

*Expert Advice*

*Completed by County Project Implementation officer*

Name: \_\_\_\_\_ Position /  
Community: \_\_\_\_\_ Signature: \_\_\_\_\_  
Date: \_\_\_\_\_ Tel \_\_\_\_\_  
contact: \_\_\_\_\_

Approved by Community committee chair  
Name: Dominica Ngim Position CHAIRPERSON  
Signature: [Signature] Date: 2-1-6-2020 Tel \_\_\_\_\_  
contact: 0711470183



Checked and approved by:  
Field Appraisal Officer (CDE)(NEMA)  
Name: Yvonne M. Signature: [Signature]  
Stamp  
Date: 23/7/2020 Tel \_\_\_\_\_  
contact: 0780933286



**Action plan (completed by Field Appraisal Officer) NEMA**

Which course of action do you recommend?  
 ESIA  EIA  ESMP  RAP (RPF is the reference document with reference to resettlement issues)  VMGP  Other environmental/social plans  
 There are no/negligible environmental or social risks  
If a RAP is required, will the project displace or restrict access for less than 200 individuals, or if over 200, are losses for all individuals less than 10% of their assets?  
If yes, prepare an abbreviated RAP  If no, prepare a full RAP

Full details of resettlement requirements are provided in the accompanying Resettlement Policy Framework.

Checked and approved by:  
NPCU Environmental Officer Name: \_\_\_\_\_ Signature:/Stamp \_\_\_\_\_  
Date \_\_\_\_\_

NPCU Social Officer: \_\_\_\_\_ Signature/stamp: \_\_\_\_\_  
Date \_\_\_\_\_

## Annex 8: Minutes of CCP meeting

MINUTES OF LOWER TAKURET WATER PROJECT WHICH  
WAS HELD ON 27th NOVEMBER 2020.

PRESENT MEMBERS

Dominica Ngina Ngunji  
Rose Nyawira Maina  
Jacob Kithinji MARETE  
Benson Kikachi Nyaga  
Julius Chaga Mwangi  
STEPHAN MUGISI Ngunji  
Mary Gathoni Muchoki  
Patrick Taiga Maina  
Francis Gichem Maina  
Moses Nderitu Ngunji  
Samuel Maina Ngunji  
Paul Mwangi Ngunji  
Watson Gikonyo Nyaga  
Jane Nduta Makanga  
Phoebe Wangari Gichem  
George Kariki Kithinji  
Leonard Macharia Inoga  
Samuel Mwangi Muchoki  
Peter Muriuki Muriuki  
Edwin Gachugu Nyaga  
Martin Kinyua Ngunji  
Francis Maina Gikonyo  
Simon Waigwa Muriuki  
Simon Githinji Ngunji  
Joseph Maina Nyaga  
Geoffrey Ngunji Gachugu  
Ehud M. Gachugu  
Harrison Kariki Muthoni  
Jacob Rutwara Nderitu  
Josephine M. Nderitu

Emilia W. Kabuthi  
Lucia Wathay Nyaga  
Maina Gabeigo  
Wilson Gicharu Gachugu  
Regina Njiru Muchangi  
Harrison Karuti Nyaga.  
ABSENT WITH APOLOGY:  
Peter Gichoki Karuti.  
Josephat Gachugu Nyaga  
Duncan Gicharu Gikonyo.  
ABSENT WITHOUT APOLOGY WILL.



### Today's AGENDA

Preliminaries  
Reading & Confirmation of Previous Meeting.  
Welcome Esia to come and visit the sites.  
A.O.B.

### Min I/01/2020 Preliminaries

The meeting started at 11am with a word of prayer by Christine Gachugu and there after Chairlady welcomes the members to the meeting.

Min 2/11/2020 Reading and Confirmation of Previous  
The secretary read the previous minutes of the previous meeting and it was proposed by Unice M. Nyaga and seconded by Simon Githika Ngunjiri.

### Min 3/11/2020 Visiting of Esia.

Chairlady informed the stat holders that the Esia well will be visiting our intake and (office) the place to build the office. The members agreed to with Esia to come

to our project so that we can be approved. by KESAP. However, KESAP will know what to do from there.

The Esia came to the ground and checked the both sites, Intake and a place to put the effluents

All members of Lower Kakiwet Water Project will be very happy when the construction commences.

~~The~~ Min 4/11/2020 A.E.S.

There being no other business, the meeting was closed at 1.30pm with a word of prayer by Dennisia Ngina Nginjiri. Minutes was prepared by the secretary of the project confirmed by Chair lady.



**Annex 9: Previous EIA licence**



NYR/PR/2045
Application Reference No.....
Registration No.....
<b>0061568</b>
For Official Use

**NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)  
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT  
ENVIRONMENT IMPACT ASSESSMENT LICENSE**

This is to certify that the Environmental Impact Assessment Project Report received from  
**LOWER KAKURET WATER PROJECT**

.....**P.O Box 46 - Kiganjo**.....(Name of individual/firm) of.....(Address)

submitted to the National Environment Management Authority (NEMA) for consideration under the Environment Impact Assessment and Audit Regulations 2003 regarding.....

.....(title of project) whose objective is to carry on  
...**Abstraction of 42.50m<sup>3</sup> per day for domestic use of water and 1285.72 m<sup>3</sup> per day for subsistence irrigation from Nairobi River**.....

...**Mbogoni Village, Kaburama Location, Kieni East in Nyeri County**.....  
.....(briefly describe purpose) located at

.....(locality and County) has been reviewed and a license is hereby issued for implementation of the project, subject to attached conditions

Dated this 24<sup>th</sup> Day of Sept 2020

Signature.....*[Handwritten Signature]*.....

SEAL

*[Signature]*  
**Director General**  
*The National Environment Management Authority*

**CONDITIONS OF LICENSE**

1. This license is valid for a period of 24 months (time within which the project should commence) from the date hereof.
2. The Director-General shall be notified of any transfer/variation, surrender of this license.

P.T.O.



## **1. General Conditions**

- 1.1. This project is for the **Abstraction of 42.50m<sup>3</sup> for domestic use and 1285.72 m<sup>3</sup> per day for Subsistence irrigation from Nairobi River in Lower Kakuret** as shown in the EIA report NEMA/NYR/PR/5/2/2645
- 1.2. The licence shall be valid for 24 months from the date of issue
- 1.3. Without prejudice to the other conditions of this license, the proponent shall implement and maintain an environmental management system, organizational structure and allocate resources that are sufficient to achieve compliance with the requirements and conditions of this license.
- 1.4. The Authority shall take appropriate action against the proponent in the event of breach of any of the conditions stated herein or any contravention to the Environmental Management and Co-ordination Act, 2015 and regulations there under.
- 1.5. This license shall not be taken as statutory defense against charges of pollution in respect of any manner of pollution not specified herein.
- 1.6. The proponent shall ensure that records on conditions of licenses/approval and project monitoring and evaluation shall be kept on the project site for inspection by NEMA's Environmental Inspectors.
- 1.7. The proponent shall submit an Environmental Audit Report in the first year of occupation/operation/commissioning to confirm the efficacy and adequacy of the Environmental Management Plan.
- 1.8. The proponent shall comply with NEMA's improvement orders throughout the project cycle
- 1.9. The proponent shall provide the final project accounts (final project costs) on completion of construction phase. This should be done prior to project commissioning/operation/occupation

## **2. Abstraction Conditions**

- 2.1 In the event the project borders a river or stream, pursuant to regulation 6 (c) water quality Regulations, 2006, the proponent shall protect the riparian reserve by ensuring that NO development activity is undertaken within the full width of the river or stream to a minimum of six (6) metres and a maximum of 30 metres on either sides based on the highest recorded flow level.
- 2.2 The proponent shall put up a project signboard as per the Ministry of Works Standards indicating the NEMA license number among other information.
- 2.3 The proponent shall ensure that all excavated material and debris is collected, re used and where need be disposed off as per the Environmental Management and Coordination (Waste Management) Regulations 2006.
- 2.4 The proponent shall ensure strict adherence to the provisions of Environmental Management and Coordination (Noise and Excessive Vibrations Pollution Control) Regulations 2009.
- 2.5 The proponent shall ensure strict adherence to the Occupational Safety and Health Act (OSHA), 2007.
- 2.6 The proponent shall ensure that drilling activities are undertaken during the day (and not at night) - between 08.00 hrs and 17.00 hrs; and that transportation of materials to and from site are undertaken during weekdays (and not weekends) off peak hours.
- 2.7 The proponent shall ensure strict adherence to the Environmental Management Plan developed throughout the project cycle.
- 2.8 The proponent shall ensure that the development adheres to zoning specifications issued for development of such a project within the jurisdiction of Nyeri County Government, Water Resources Authority, Kenya Forest Services with emphasis on approved land use for the area.
- 2.9 The proponent shall ensure that adequate and appropriate sanitary facilities, personal Protective equipments as well as adequate training are provided for the workers during drilling phase and the proper decommissioning of the facilities is carried out once project is complete.

### **3. Operational Conditions**

- 3.1. The proponent shall ensure that rain water harvesting facilities are provided to supplement surface and ground water
- 3.2. The proponent shall ensure that all waste water is disposed as per the standards set out in the Environmental Management and Coordination (Water Quality) Regulations 2006.
- 3.3. The proponent shall ensure that all drainage facilities are fitted with adequate functional Oil Water Separators and silt traps
- 3.4. The proponent shall ensure that appropriate and functional efficient Air Pollution Control mechanisms are installed in the facility to control all air emissions.
- 3.5. The proponent shall ensure that all equipment used are well maintained in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations 2009.
- 3.6. The proponent shall ensure that all solid waste, soil and silt is handled in accordance with the Environmental Management and Coordination (Waste Management) Regulations 2006.
- 3.7. The proponent shall ensure that all workers are well protected trained as per the OSHA, 2007
- 3.8. The proponent shall comply with the relevant principal laws, by-laws and guidelines issued for development of such a project within the jurisdiction of Ministry of Public Health and Sanitation, Directorate of Occupational Safety and Health Services, Kenya Forest Services, Water Resources Authority Nyeri County Government, and other relevant Authorities
- 3.9. The proponent shall ensure that environmental protection facilities or measures to prevent pollution and ecological deterioration such as solid waste management, landscaping mechanism.

### **4. Notification Conditions**

- 4.1. The proponent shall seek written approval from the Authority for any operational changes under this license
- 4.2. The proponent shall ensure that the Authority is notified of any malfunction of any system within 12 hrs on the NEMA hotline 020 606041 and mitigation measures put in place
- 4.3. The proponent shall keep records of all pollution incidences & notify the Authority within 24 hrs.
- 4.4. The proponent shall notify the Authority of its intent to decommission three months in advance in writing.

### **5. Decommissioning Conditions**

- 5.1. The proponent shall ensure that a decommissioning plan is submitted to the Authority for approval at least three (3) months prior to decommissioning
- 5.2. The proponent shall ensure that all pollutants and polluted material is contained and adequate mitigation measures provided during the phase.
- 5.3. The proponent shall take necessary measures to rehabilitate, re-vegetate and landscape all disturbed areas by planting Bamboo or suitable tree species buffer around affected areas.

The above conditions will ensure environmentally sustainable development and must be complied with.

**The Proponent shall be fully responsible in ensuring adherence to all standards and relevant laws in Kenya.**



**Annex 10: Google Earth Map**



Imagery ©2021 CNES / Airbus, Landsat / Copernicus, Maxar Technologies, Map data ©2021 2 km

Annex 11: Public Participation filled questionnaires

**COMMUNITY PARTICIPATION BLANK QUESTIONNAIRES**

PROPOSED WATER TANK CONSTRUCTION PROJECT..... AT LOWER KAKURET WATER PROJECT

Pursuant to the provisions of the Environmental Management and Coordination Act Cap 387, Environmental Impacts Assessment (EIA) and Audit (EA) Regulations 2003, Public Health Act and Legal Supplement 2003, a social site assessment for EIA is being conducted on the Proposed Site.

**RESPONDENT**

Name BENSON KIBUKH NJACAP

County NIJERI

Sub-County KIENI EAST

Ward THEGU

Mobile Number 0721 350507

(Please note that these details are required for the purposes of authenticity in relation to the proposed project)

1. Are you a resident of this area?  Yes Or  NO
2. Are you aware of the proposed Drilling of Community Water Project in Lower Kakuret area, for use by the above named community?
3. Do you support the proposed project in the area?  Yes  NO
4. Do you think this project is suitable and compatible with the surrounding developments  Yes  NO
5. Within this area, are there similar projects.  Yes  NO
6. What are some of the positive impacts you can attach to this project  
.....  
.....  
.....
7. What are some of the negative impacts you can attach to this project

**C COMMUNITY PARTICIPATION BLANK QUESTIONNAIRES**

PROPOSED WATER TANK CONSTRUCTION PROJECT..... AT LOWER KAKURET W. PROJECT

Pursuant to the provisions of the Environmental Management and Coordination Act Cap 387, Environmental Impacts Assessment (EIA) and Audit (EA) Regulations 2003, Public Health Act and Legal Supplement 2003, a social site assessment for EIA is being conducted on the Proposed Site.

**RESPONDENT**

Name Dominica Ngima Ngunjiri  
County NYERI  
Sub-County KIENI EAST  
Ward THIGU  
Mobile Number 0711470183

(Please note that these details are required for the purposes of authenticity in relation to the proposed project)

1. Are you a resident of this area?  Yes  NO
2. Are you aware of the proposed Drilling of Community Water Project in Lower Kakuret area, for use by the above named community? YES
3. Do you support the proposed project in the area?  Yes  NO
4. Do you think this project is suitable and compatible with the surrounding developments  Yes  NO
5. Within this area, are there similar projects  Yes  NO
6. What are some of the positive impacts you can attach to this project  
I.e. CONTRIBUTION FISH PONDS

7. What are some of the negative impacts you can attach to this project

10. Any other comments/Suggestions you would like to make in relation to this proposed project

FREE PLANTING

Signature *DBL*

Date 5-1-2021

THANKYOU FOR YOUR RESPONSE

6. Are there any sensitive ecosystems within the area (e.g. swamps, water body, forest, etc.)?

Yes  No

If yes please specify .....

7. Do you think the proposed project will have any impacts on the following if implemented?

• Water Supply NO

• Roads/Traffic NO

• Security NO

• Vegetation NO

8. What are some of the challenges that you experience in this area (please tick)

- Garbage collection
- Insecurity
- Noise
- Traffic

• Any other .....

9. Which are some of the infrastructural facilities that you would like to see developed in the area

① CATTLE DIP

.....  
.....  
.....  
10. Any other comments/Suggestions you would like to make in relation to this proposed project  
.....  
.....  
.....

Signature                     *[Handwritten Signature]*                     Date                     5/1/2021                    

THANKYOU FOR YOUR RESPONSE

.....  
.....  
.....  
6. Are there any sensitive ecosystems within the area (e.g. swamps, water body, forest, etc.)?

Yes  NO

If yes please specify .....

7. Do you think the proposed project will have any impacts on the following if implemented?

- Water Supply ND  
.....  
.....
- Roads/Traffic NO  
.....  
.....
- Security ND  
.....  
.....
- Vegetation ND  
.....  
.....

8. What are some of the challenges that you experience in this area (please tick)

- Garbage collection
- Insecurity
- Noise
- Traffic

• Any other ND.....

9. Which are some of the infrastructural facilities that you would like to see developed in the area

10. Any other comments/Suggestions you would like to make in relation to this proposed project

project will be important for food security

Signature CHEGE Date 5/1/2021

THANKYOU FOR YOUR RESPONSE

8. Are there any sensitive ecosystems within the area (e.g. swamps, water body, forest, etc.)?

Yes  NO

If yes please specify

7. Do you think the proposed project will have any impacts on the following if implemented?

• Water Supply

.....  
.....

• Roads/Traffic

.....  
.....

• Security

.....  
.....

• Vegetation

SOIL EROSION  
.....  
.....

8. What are some of the challenges that you experience in this area (please tick)

- Garbage collection
- Insecurity
- Noise
- Traffic

• Any other .....

9. Which are some of the infrastructural facilities that you would like to see developed in the area

- MARAMUR ROADS  
- ELECTRICITY

**COMMUNITY PARTICIPATION BLANK QUESTIONNAIRES**

PROPOSED WATER TANK CONSTRUCTION PROJECT AT LOWER KAKURETI WATER PROJECT

Pursuant to the provisions of the Environmental Management and Coordination Act Cap 387, Environmental Impacts Assessment (EIA) and Audit (EA) Regulations 2003, Public Health Act and Legal Supplement 2003, a social site assessment for EIA is being conducted on the Proposed Site.

**RESPONDENT**

Name JULIUS CHEGE MWANGI  
County NVERI  
Sub-County KIENI EAST  
Ward THEGU RIVER WARD  
Mobile Number 0726087431

(Please note that these details are required for the purposes of authenticity in relation to the proposed project)

1. Are you a resident of this area?  Yes or  NO
2. Are you aware of the proposed Drilling of Community Water Project in Lower Kakuret area, for use by the above named community?

3. Do you support the proposed project in the area?  Yes  NO

4. Do you think this project is suitable and compatible with the surrounding developments  Yes  NO

5. Within this area, are there similar projects  Yes  NO

6. What are some of the positive impacts you can attach to this project  
STAKE TREE NURSARY  
FISH POND

7. What are some of the negative impacts you can attach to this project

10. Any other comments/Suggestions you would like to make in relation to this proposed project

PROVIDE WATER FOR COMMUNITY

Signature  Date 5/1/2021

THANKYOU FOR YOUR RESPONSE

.....  
.....  
.....  
6. Are there any sensitive ecosystems within the area (e.g. swamps, water body, forest, etc.)?

Yes  NO

If yes please specify .....

7. Do you think the proposed project will have any impacts on the following if implemented?

• Water Supply NO

• Roads/Traffic NO

• Security NO

• Vegetation NO

8. What are some of the challenges that you experience in this area (please tick)

- Garbage collection
- Insecurity
- Noise
- Traffic

• Any other .....

9. Which are some of the infrastructural facilities that you would like to see developed in the area

ELECTRICITY CONNECTIONS

**C COMMUNITY PARTICIPATION BLANK QUESTIONNAIRES**

PROPOSED WATER TANK CONSTRUCTION PROJECT..... AT LOWER KAKURET WATER PROJECT

Pursuant to the provisions of the Environmental Management and Coordination Act Cap 387, Environmental Impacts Assessment (EIA) and Audit (EA) Regulations 2003, Public Health Act and Legal Supplement 2003, a social site assessment for EIA is being conducted on the Proposed Site.

**RESPONDENT**

Name ROSE NYAMARA MAINA  
County NYERI  
Sub-County KIEN LEA  
Ward THEOU  
Mobile Number 0723832113

(Please note that these details are required for the purposes of authenticity in relation to the proposed project)

1. Are you a resident of this area?  Yes Or  NO
2. Are you aware of the proposed Drilling of Community Water Project in Lower Kakuret area, for use by the above named community?
3. Do you support the proposed project in the area?  Yes  NO
4. Do you think this project is suitable and compatible with the surrounding developments  Yes  NO
5. Within this area, are there similar projects  Yes  NO
6. What are some of the positive impacts you can attach to this project  
FRUIT TREE NURSERY  
.....  
.....

7. What are some of the negative impacts you can attach to this project

## **Annex 12: Chance find procedure**

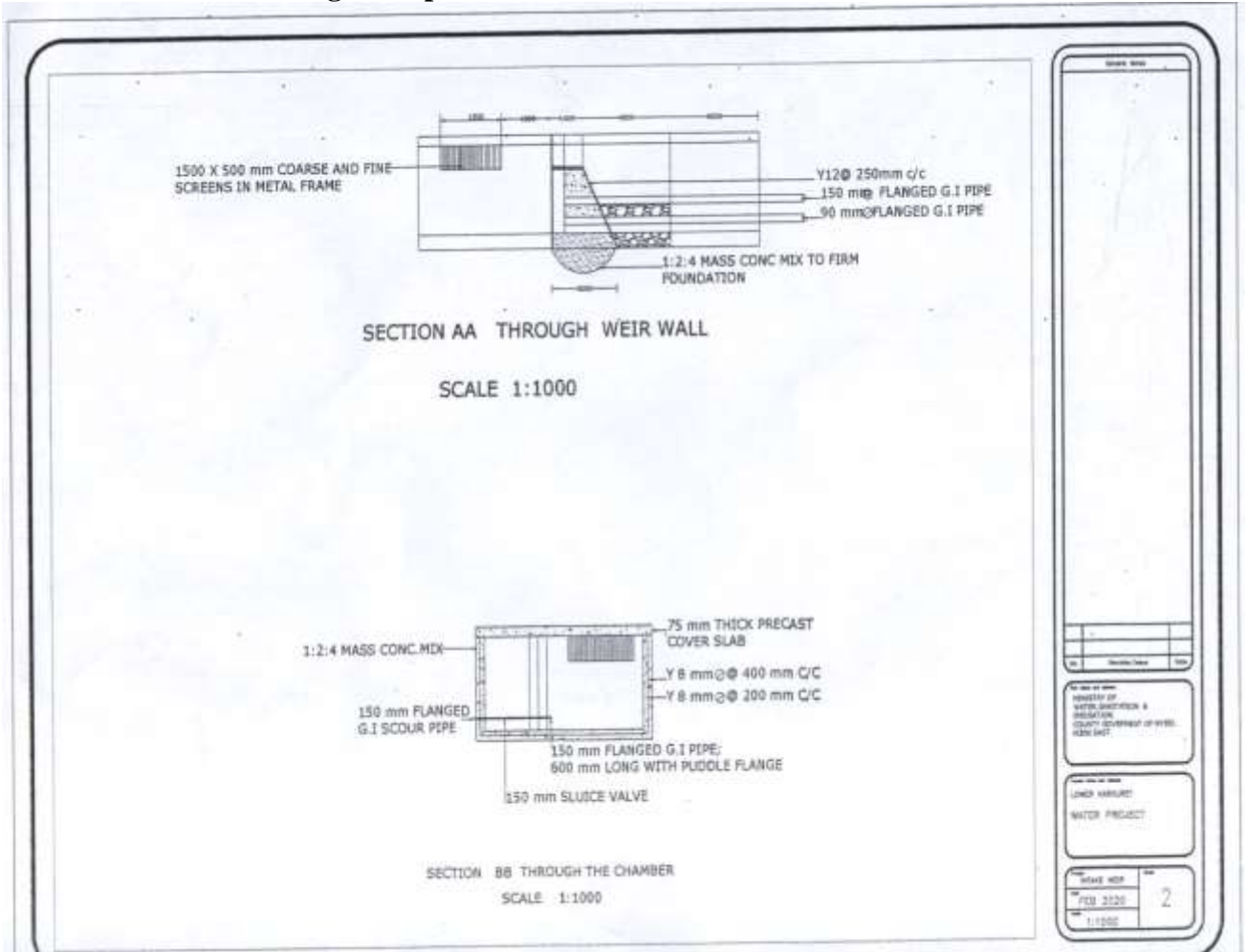
**The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation.**

### **1. Chance find procedures will be used as follows:**

**If the contractor for the proposed Lower Kakuret project discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery, tomb and/or individual graves during laying of pipework, excavation or construction, the contractor shall:**

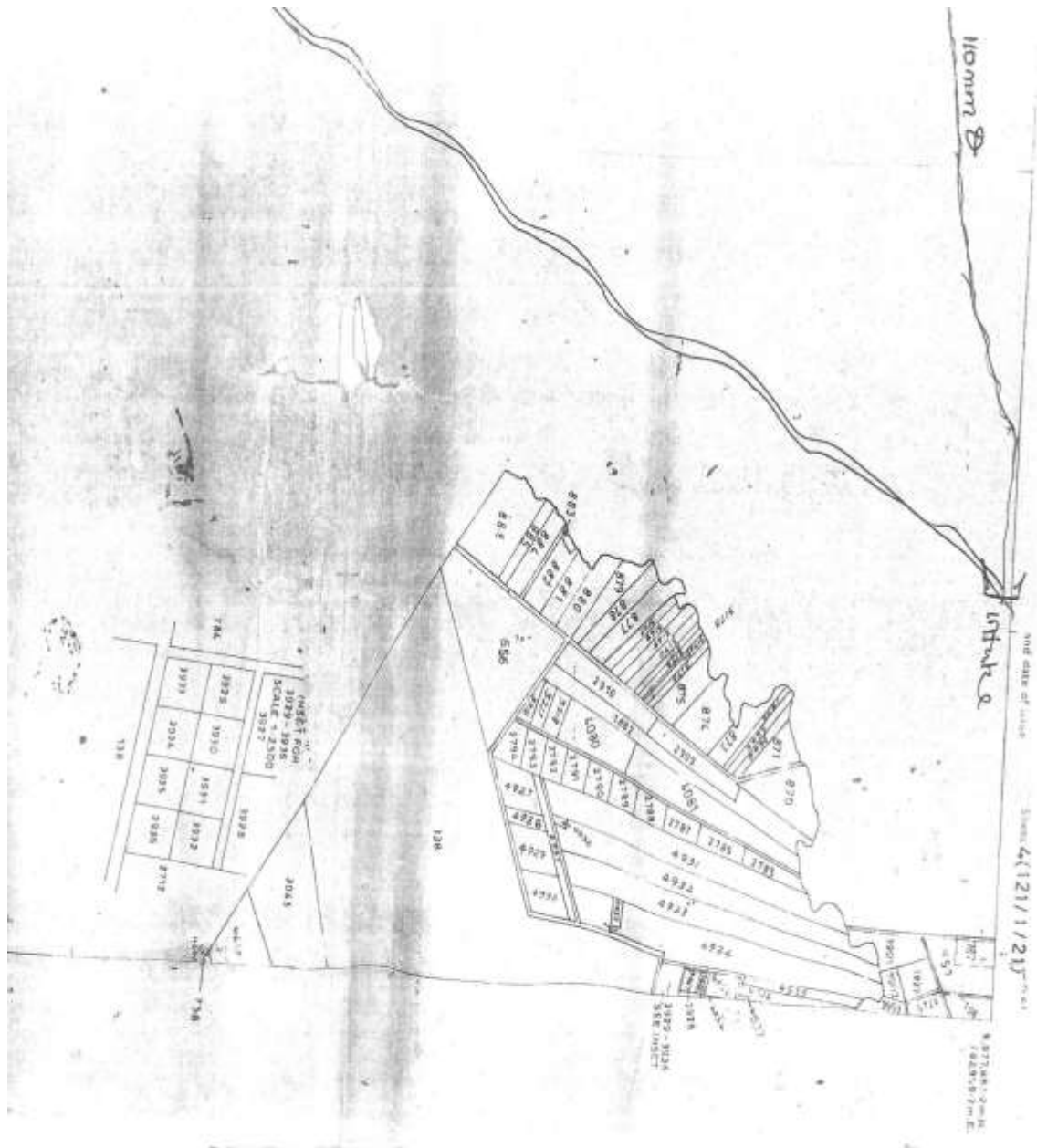
- **Stop the excavation and construction activities in the area or route of the chance find. Delineate the discovered site or area.**
- **Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the ministry of sports, culture and the arts take over.**
- **Notify the supervisory engineer who in turn will notify the responsible local authorities and the ministry of sports, culture and the arts immediately (less than 24 hours).**
- **Contact the responsible local authorities and the ministry of sports, culture and the arts who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the relevant ministry of sports, culture and the arts (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values.**
- **Ensure that decisions on how to handle the finding be taken by the responsible authorities and the ministry of sports, culture and the arts. This could include changes in the layout (such as when the finding is an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage.**
- **Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the ministry of sports, culture and the arts concerning the safeguard of the heritage and authorization for construction work to resume.**

**Annex 13: Construction design and plan**









**Annex 15:** Satellite map of the intake site



Annex 16: List of beneficiaries

LOWER KAKURET WATER PROJECT MEMBERS LIST

S.	NAME	ID NUMBER	TELEPHONE
1	HELLA M MAHINDA	10242955	0725262436
2	ANA Wanyungu	2771047	0721345050
3	PERIS (Mkingi)	20329047	0726122552
4	ROSEMARY MUGENDA	11515308	0722907502
5	SAMMY MURAGE	3027813	
6	MILKA KAMU	3777813	0711741140
7	ELIANCE N. NJOSGE	22384877	0727151287
8	JULIUS CHIGE		0726087431
9	MATHIAS KANYASIA		0727348297
10	JAMES W. NGUTHI	3230023	0726187174
11	FRANKIE GITHINI	11774425	0714130771
12	ALICE MUGENI	1195177	0717390712
13	DAVID MACHIA	24310195	0746058137
14	MURUGA SIMON	13235467	0726098780
15	LINET KANGI NGATHI	13355750	0710572756
16	JAMES KAMUKU	12774116	0705744105
17	ELIANCE NGATHI	25569709	0714787283
18	JOHN KAMANI	3720755	0728233844
19	MARY NGATHI	20418699	0727001024
20	ELIANCE WANDIA	27918036	072738587
21	JOHN MUKI	21359175	0711772196
22	ALICE CHANJA	23533141	0729060286
23	ELIANCE WAMBUI	24997083	0727925760
24	GRACE WANDIA	21854717	0710710608
25	BOSS MUTHONI	17772181	0704302421
26	ESTHER MUEL MANDA		070379943
27	LILIAN NYAMBA	99681014	
28	LEONARD MACHARIA		0723951089
29	ELIZABETH KINYARITSI	11411799	0722675577
30	ELIZABETH W. GITHINI		0715813709
31	SALOME NYAMBURA		0727910128
32	SARAH WAMBUI	26826557	0726003370
33	ADAMICHA NGIMA	3230083	0711430183
34	AGNES NGIMA	27035237	0723842782
35	PERIS WAMBUI	8648254	0716747670
36	SAMUEL MWANGI		0725563049
37	ESTHER KIMANI	26794753	0710350903
38	JOHN WAMANE		0718948106
39	MERCY WAMBUI NGARI		0721260054
40	ELIZABETH WANDIA	5563729	0703127876
41	MARY WAMBUI NYAMBA		0720885414

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME	ID NUMBER	TELEPHONE
42	IRENE KANYENJE		079181731
43	ESTHER NGANYA		0729333570
44	BEATRICE WAMUKU		071446803
45	RACHEL WANDIRA		070747675
46	Isaiace Mucetu	32530151	0711717989
47	Alice Wamuku	25034741	0722333335
48	Caroline wandira	22916036	0718328582
49	Lucy Kanja	11515048	0722380009
50	Lydia Githani	24481071	0721996077
51	VERINICA WALCU	295581466	0714228863
52	SUSAN Mutuiki	13125949	0720424470
53	Martha GATHIGA	14219075	0728856070
54	Theritha WANTECI	12774848	0717272424
55	Glady's Njeri	27879609	071475860
56	EVA Nyawira		
57	OSCAR Maina		
58	SEEA WACHUKA GATHIYA	13604794	
59	SAMUEL KINUTHIA		
60	NICOLA KARUKU		
61	CAROLINE WANGICI		
62	FUNASE Mumbi	13537746	072233703
63	Tom Wambere		
64	Seice Wamuku	24599524	0703808543
65	Paulen Naithe	10717287	075668707
66	Tahitha Wamsiru	25339160	0720797789
67	Patrick Wahiame		0711851982
68	Jane Njira Matiga Matanga		0722772507
69	Samuel Klagwi	23743325	0727908269
70	Antony Koga	0160236	072768827
71	David Nyirika	11565478	0726042844
72	Francis Maina	3219162	11565478
73	Joseph Kaniuki	1389997	0723150997
74	Francis Mwaniki	0351571	072270984
75	Gichuki Kaniuki	201610272	0726629143
76	Stephen Kamau	3214535	0707557083
77	David Wanjahi	1872044	0722952716
78	Peter Nyaga	1206549	0714205759
79	James Wanjahi	3464749	0722588157
80	David Macharia	1716269	0711470181
81	Kibui Wanjau	3227464	0725117087
82	Samuel Mwangi	061198	0700476528

Attachment 1 - Group membership list

No	Name	ID No	Gender M/F	Age	Contact	Signature <sup>2</sup>
481	PAUL MENJA	11411898	M	50	071392884	
482	DENINAH WANGU	3230522	F	60	0920393894	
483	MICHAEL WAIHENYA	5712647	M	71	0720688717	
484	JOHN BEE KARIUKI	6833104	M	64	0711482695	
485	MICHAEL R. KINGORI	0811665	M	80	0708315538	
486	Edoardo Wani	20639619	M	43	0704019444	
487	Evace Nyarui	5401229	F	64	0724863293	
488	CHARLES MURILIKI	3214054	M	75	0721152125	
489	JOHN SONDEL	5499217	M	67	074265165	
490	Rachael Wamuyu	6879137	F	61	0713582059	
491	Cyrus Maina Njoroge	3214191	M	69	0711810070	
492	ALICE WANGENI GITHUA	1355745	M	45	0722651086	
493	Samuel Maina Githui	5753063	M	54	0741756377	
494	GEORGE MURILIKI MURILIKI	11252266	M	50	0721932812	
495	PAUL M MUGI	10119267	M	50	0722746591	
496	SAMMY JAYNE WERU	13015672	M	45	0720360797	
497	PAUL GITUTO	5759092	M	55	0721599045	
498	PETER MACHARIA	6844123	M	62	0720726913	
499	NIXSON MWAJ	3375708	M	60	0721789392	
500	PETER NDIATY	8207178	M	50	0727221592	
501	GICHUKI KARIUKI	3214691	M	87	0704302881	
502	Francis Njoroge	32334	M	72	0711773169	
503	JAMES WANJOHI	3464747	M	73	0722565151	
504	CHARLES M. NOIRANGU	10844679	M	50	0720810884	
505	SAMUEL KARIUKI	3211721	M	85	0713016701	
506	KINYUA KIBURU	3216103	M	87	072305728	
507	Benson Weru	21609467	M	50	071112103	
508	Thomas Mathenge	10595759	M	55	0722906964	
509	Peter Chenge	32122837	M	40	071574981	
510	Charles Kawonga	9068599	M	45	0712386324	
511	Rose Wachako	3712280	F	60	0928366736	
512	Charles Maina	12775894	M	45	0723922595	
513	Esther Mwangi	22440169	F	38	0723126028	
514	ZACHARY T. NTHUNJA	1827234	M	55	0722650633	
515	Esther Wambui	5545889	F	53	0729465870	
516	RACHEL KARIUKI	12777196	F	46	0710453662	
517	IMMACULATE WANJA	3218718	F	72	07212966488	
518	PROSPER SAUTHON	36975339	F	32	0757001587	
519	ZAKARIAH KOMUNDIRA	9227517	M	86	0710964407	
520	Kiobodo Mwiru	36636650	M	52	07115951024	

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME	ID NUMBER	TELEPHONE
124	Josphat Gachugu Nyaga	20121934	0719 615 6
125	Ann Muthoni Nyaga		
126	James Gicheru Kariuki		
127	Josephine M. Ndaathi	6421074	0722 803 06
128	Funice W. Kabutti	1825946	0723 217 32
129	James Kabiru		
130	Samuel Maina Ngunjiri	<del>27306499</del>	
131	Paul Mwangi Ngunjiri	1343131	
132	Geoffrey Rigathi Gachagua		
133	Rose Njiri Kamuyu	3215309	
134	Josphat Mwaniki Mwangi	3220694	
135	Michael Mwangi Kwambata	12780465	
136	Joseph Kinuthia Mwangi	4345335	
137	Kuka Karuki	10595371	
138	Wachira Kuaru	3730761	
139	Joseph Kinyagui Mwangi	3231356	
140	Asa Ferman	552844	
141	James Klambugu	2925330	
142	James Kibama	10137047	
143	Peter Kingori Kurambata	9143069	
144	Simon Ndegwa Maina	11508566	
145	Kluson Gateo Kurambata	17452176	
146	Charles Gathoo Kurambata	5547209	
147	Mattha Wangui Kurambata	11179614	
148	Simon Ndegwa Kurambata	13453178	
149	Kenneth Kingori	3227000	
150	Victor Kinyua	7823574	
151	Lucy Kianjiku Kimmo	21598687	
152	Imma Ngairi Kianjiku		
153	Myantai Nyaga		
154	Laise Kianjiku Macharia		
155	Rhoda Kingori		
156	Rose Wachera		
157	Klamuyu Gikonyo Nyaga		
158	Pauline Klamuyu		
159	Present Maina		
160	Prince Gikonyo		
161	Bernard Nyaga		
162	Moses Mwangi		
163	Hellen Wangui		
164	Alice Klamuyu	25734741	

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME	ID NUMBER	TELEPHONE
165	Geoffrey Agathi Gachagua		
166	Robert Gitonga	2210984	
167	Keith Ngunjiri		
168	Kyam Maina		
169	Kytha Nyamira		
170	Lydia Gitthori		
171	Bonventure Mwangi		
172	Sergius Maina		
173	Isidorus Kalgi		
174	Naomi Klamuyu		
175	Leah Kiangiki		
176	Nama Wangari		
177	Fulcio Wangechi	20592184	
178	Kalen Muthoni	36807901	
179	Christine Nyambura	3230843	
180	Edaine Murene		
181	Kesia Klamuyu		
182	Pauline Kiangiki		
183	James Mwangi		
184	Nancy Nyambura		
185	Max Gachagua		
186	Basilin Kiambui	249973000	
187	Ann Muthoni		
188	Paul Gachagua		
189	Zipporah Wangari		
190	Winnie Muthoni		
191	Bosvine Wangiri		
192	Valentine Wairimu		
193	Magret Nyambura	771037	
194	Susan Muya	30195471	
195	Susan Ngima		
196	Nancy Kiangiki		
197	Peter Kariuki		
198	Paul Mwangi	13453131	
199	Josephine Mumbi		
200	Mark Mungai		
201	Joyce Nyambura		
202	Caroline Kiangiki		
203	Christopher Nduti		
204	Michael Kibuchi		
205	Keneth Nyaga		

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME		ID NUMBER	TELEPHONE
206	Rose	Kaimuu Kiamu		
207	Ruth	Kiamuya		
208	Jane	Njeri		
209	Bernard	Gicheru		
210	Julius	Klangai		
211	John	Nyaga		
212	Martha	Kambui		
213	Magdaline	Mumbi		
214	Tabitha	Kanjiri		
215	Joseph	Gicheru		
216	Michael	Nyaga		
217	Simon	MURAGE		
218	Simon	MURAGE		
219	Patrick	Muchang'u		
220	David	Gicheru		
221	Antony	Kariuki		
222	Moses	Nderitu	25164980	
223	Harrison	Kariuki	0984714.	
224	Jackson	Machira	11253686	
225	Isaac	Kimica	11253708	
226	David	Machira	10845926	
227	John	Gicheru	<del>20070659</del>	
228	Alex	Gicheru		
229	James	Chachugu		
230	Peterson	Kariuki		
231	Samuel	Maina		
232	Johnson	Kariuki	21970468	
233	David	Maina	25191771	
234	Josephat	Gachugu	20121934	
235	James	Gicheru		
236	Josephine	Mumbi	6421074	
237	Vine	Kambui	1825946	
238	James	Kaburu		
239	Hastine	Ngunjiri		
240	Moses	MURAGE		
241	Bonface	Ngunjiri		
242	Kymari	Muruki		
243	Full	Gospel Church		
244	Kids	aline (53 Josephat's home)		
245	Elena	Kambui	25690952	
246	Gian	Kithini		

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME	ID NUMBER	TELEPHONE
247	Timothy Mvirigi		
248	Tack Muriithi		
249	Fester Muthoni		
250	Benjamin Ngatia		
251	Iselle Kamini		
252	Klachira Ngogi		
253	Uria Mugo		
254	Fredrick Mwangi		
255	Jennifer Nyeri		
256	Catherine Lungu		
257	Magiri Mwangi		
258	James Kithingi		
259	Paul Macharia		
260	Mumbi Mugo		
261	Wachira Mugo		
262	Lungu Mugo		
263	Kithame Mugo		
264	Jane Nyamira		
265	Gordon Kaimoi Kibuki	9262355	
266	David Karuri Kibungo	21554576	
267	India Wangui Mumbi	7994422	
268	Gacuu Murage	25998075	
269	Ndirangu Kiogari	9822624	
270	Stephen Klachira Gichuki	219704423	
271	Stephen Mathenge Mathai	34696135	
272	Ira Nyamira Ndiritu		
273	Migau Nyamira Maina		
274	Asea Dima Mwangi		
275	Lucy Kiangisi Ngungiri		
276	Gacema Kanya		
277	Aan Kamau		
278	Oustin Ngunjiri		
279	Victor Kiguar		
280	James Mwai	10682910	
281	Simon Kasuku	23815428	
282	Hgnus Ngema	27075237	
283	William Maina		
284	Zipporah Wacuma	2134280	
285	Mary Wambui		
286	Kelvin Maina		
287	Jeddelah Githani	25613324	

LOWER KAKURET WATER PROJECT MEMBERS LIST

M.NO.	NAME	ID NUMBER	TELEPHONE
288	Margaret Njani		
289	Johas Kanyani	20421109	
290	Wesley Nyambura	28897381	
291	Patrick Mucheru		
292	Faith Nyambura		
293	Charles Ndianangu		
294	Charles Kamaya		
295	Florence Wanjai	28856098	
296	Richard Mungai	32114158	072234279
297	Gladys Mungai	32802216	
298	Euphemia Maina	5564225	
299	Joseph Mudiini	7979284	072163172
300	Peter Njatia	34874158	0722901420
301	Kenneth Kogua	0350418	0723989810
302	David Wadina	1316269	0711470183
303	Daniel Wanyoni	4344588	0724710197
304	Wahome Kiundu	3506696	0722989710
305	George Mwaia	1875642	0722810791
306	Coella Wanjai	3221639	
307	Grace Karubi	7999107	073528749
308	James M. Tabui	0436298	
309	Francis Mwan	2211187	
310	Hyub Kanyaga	828567 (Passport)	
311	Charles Kadunga	8813252	
312	Charles Gatoni	3217667	
313	Ndianangu Wathaka	0832276	
314	Salomon Kanyoti	7260955	
315	Moses Gathuru		
316	Joseph Mwangi	1182129	
317	Samuel Wambui	3280495	
318	David Kinyua	3371372	
319	Penety Muriu	10378818	
320	James Kaguthi	3712994	
321	Gladys Wangu	24033297	
322	Johas Wachira	3218122	
323	Josephat Muriu	558653	072042236
324	Atieno Gitonyo	22882624	072357204
325	Jedali Muthoni	28977549	075095694
326	Lorenda Gitiriga	0228060	0710344631
327	Joseph Wambui	11774859	0729205469
328	Anne Muriu	1127141 10316753	0724674569

8/5/2014

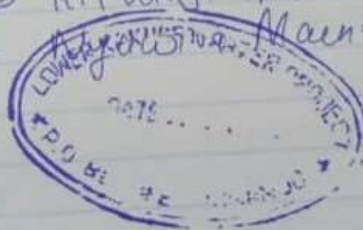
SALE AGREEMENT OF PLOT NYERI/NAROMORU  
 356 BETWEEN SIMON NDEGWA MAINA IDIISOSEK  
 OF BOX 177 NAROMORU hereinafter to as the  
 1<sup>st</sup> Party whose expression where the Context admit  
 shall include the heirs and personal representative  
 of the one part and Lower Kakuret water  
 project represented by Dominio Ngema (Chairperson)  
 Jacob Kithuni Marete (Secretary) and Rose Nyawira  
 (Treasurer, hereinafter to as the 2<sup>nd</sup> party which  
 Expression where the Context admit shall  
 include its assigns and Successors of the other party  
 whereas out of his share, the 1<sup>st</sup> party  
 has agreed to have a parcel of land  
 measuring 0.05 hectares to be excised and  
 transferred to the 2<sup>nd</sup> party.

Whereas the 1<sup>st</sup> party is entitled to  
 a parcel of Land out of L.R. NYERI/NAROMORU  
 356 which parcel of Land is Registered  
 in the name of Hiram Maena Ngatia (Deceased).

The 2<sup>nd</sup> party have agreed to buy  
 that parcel of Land at a cost of Three  
 hundred thousand (300,000) from the first party.

The 2<sup>nd</sup> party have cleared the  
 whole amount (300,000) to the first party  
 awaiting Title Deed.

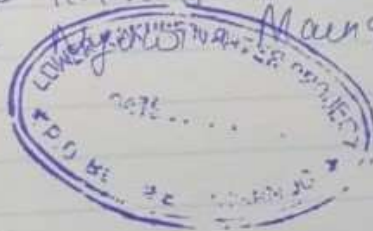
Chairperson - Dominio Ngema NGUMIA  
 Secretary - Jacob Kithuni Marete  
 Treasurer - Rose Maena



22/12/2020

SALE AGREEMENT OF PLOT NYERI/NAROMORU  
354 BETWEEN Bernard Ngũthi Maina ID 10379361  
OF BOX 177 NAROMORU hereinafter to as the  
1<sup>st</sup> Party whose expression where the Contract admit  
shall include the heirs and personal representative  
of the one part and Lower Kakuet water  
project represented by Dominick Ngũgũ (Chairperson)  
Jacob Kithuni Marete (Secretary) and Rose Nyũgũ (Treasurer)  
hereinafter to as the 2<sup>nd</sup> party which  
Expression where the Contract admit shall  
include its assigns and Successors of the other party  
whereas out of his share the 1<sup>st</sup> party  
has agreed to have a parcel of land  
measuring 0.05 hectares to be gifted and  
transferred to the 2<sup>nd</sup> party.  
Whereas the 1<sup>st</sup> party is entitled to  
a parcel of land out of L.R. NYERI/NAROMORU  
356 which parcel of land is Registered  
in the name of Hiram Maina Nyũgũ (Deceased).  
The 2<sup>nd</sup> party have agreed to buy  
that parcel of land at a cost of Three  
hundred thousand (300,000) from the first party.  
The 2<sup>nd</sup> party have cleared the  
whole amount (300,000) to the first party  
awaiting Title Deed.

Chairperson - Dominick Ngũgũ Ngũthi  
Secretary - Jacob Kithuni Marete  
Treasurer - Rose Nyũgũ





**Plate 2: Members showing the site**



**Plate 3: Public participation meeting**

NAME	PROJECT	MOBILE NUMBER	DATE	SIGN.
JOHN N. KARIMUSTATI	Manager Lusori / Set up project	07220753160	11/3/2021	[Signature]
PAUL K. MANNYVIDA	CHIEF NAOMOKU etc	07220879611	"	[Signature]
ETHANIM AMWESIO GETHI	CHIEF KIRIKURU W. PROJECT	0722094783	11/3/2021	[Signature]
KUCOOL M. NEERANAN	CHIEF GARIKURU KIRIKURU	0722810288	11/3/2021	[Signature]
Joseph Keayi	NAIROBI NAIRIBARINER WALTER	0716658061	11/3/2021	[Signature]
Pit Shadock mints	EG (CL) RESOURCES USERS REGISTRATION P.O. BOX 48 KIRIANDU	0721450532	11/3/2021	[Signature]
ROV SHILO GITHA RONG	POST MANAGER - RAMSEY	0727833190	11/3/2021	[Signature]
REV. SAMUKA MUKUNA NY	GOSPEL AWAKENING CHURCH	07205349074	11/3/2021	[Signature]
JABSON NUNYA	GARUBA KAUUNU W. M. PROJECT	0721652994	11/3/2021	[Signature]
BENSON KIBURU	LOUVER KAKURU W. PROJECT	0721350507	11/3/2021	[Signature]
STEAR KITHOI MAREE	LOUVER KAKURU W. PROJECT	0705879369	11/3/2021	[Signature]
ROSE NYAIWIRA	LOUVER KAKURU W. PROJECT	0723832113	11/3/2021	[Signature]
YULIUS CHESTEMANI	LOUVER KAKURU W. PROJECT	0726087481	11/3/2021	[Signature]
BERNARD KINYI	KARUKURU	0727986998	11/3/2021	[Signature]
Theodore Mwangi	KARUKURU	0702448787	11/3/2021	[Signature]
NANJAE NUNYA	KARUKURU	0722916021	11/3/2021	[Signature]
LORE MACHINGA	KARUKURU	0716058137	11/3/2021	[Signature]
JOHN MATHENGE	LUSORI DAM	0727645479	11/3/2021	[Signature]
GOODFREY NISOGU	KIRIKA WATER PROJECT	0721656770	11/3/2021	[Signature]