SUMMARY PROJECT REPORT FOR THE PROPOSED CONCRETE DAM IN UMOJA MBUYU VILLAGE, LESHAU PONDO WARD, NDARAGWA SUB-COUNTY, NYANDARUA COUNTY.

LATITUDE 0.05890° NORTH AND LONGITUDE 36.55636° EAST

PROPONENT:

CHIEF OFFICER,

DEPARTMENT OF AGRICULTURE, LIVESTOCK AND FISHERIES,

COUNTY GOVERNMENT OF NYANDARUA

KENYA CLIMATE SMART AGRICULTURE PROJECT
P.O. BOX 701-20303
OLKALOU

KINGSLINK VENTURES KENYA LTD

Tel: 0721172827/0727374859

NEMA Reg. No. 9329

P.O. BOX 13288-00100, NAIROBI.

CERTIFICATION

I/We, the undersigned certify that to the best of my/our knowledge and belief, this report is correct and true reflection of the findings on the anticipated environmental and social impacts of the proposed Water Pan Project in Ndaragwa, Nyandarua County.

For and on behalf of Kingslink Ventures,

Samuel Kirugu Mucheru (Lead Expert)

NEMA License No: 6634

Signature…… Date……

For and on behalf of Client

I, certify that I have read this report for and on behalf of and that it is to the best of my knowledge and belief correct and true.

Name: John Wachira

Designation: Project coordinator Nyandarua County

Telephone 0722654423

Signature…… Date……

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

COVID 19	Corona Virus Disease 2019
CPP	Consultation and Public Participation
EMCA	Environmental Management and Co-ordination Act
EMCA	Environmental Management and Co-Ordination Act
ESMonP	Environmental and Social Monitoring Plan
ESMP	Environmental and Social Management Plan
ESMP	Environmental and Social Management Plan
GBV	Gender Based Violence
HIV	Human Immunodeficiency Virus
KCSAP	Kenya climate Smart Agriculture Project
KES	Kenya Shilling
NEMA	National Environment Management Authority
PMC	Project Management Committee
PPE	Personal Protective Equipment
SEA	Sexual exploitation and Abuse
SEA	Sexual Exploitation and Abuse
SPR	Summary Project Report

EXECUTIVE SUMMARY

Umoja Mbuyu is an area in semi-arid part of Leshau Pondo Ward, Ndaragwa Sub-county, Nyandarua County. Water scarcity is a major issue in the area that is attributed to; unreliable rainfall, increase in water demand, increased settlement and inadequate water sources. To address these issues, Umoja Mbuyu community presented a proposal to Kenya Climate Smart Agriculture Project (KCSAP) to construct a dam across a natural seasonal waterway. A section waterway runs through public utility land belonging to the community. The dam will impound water for domestic, livestock and small-scale irrigation. This will build resilience of the beneficiary community to impacts of climate change. The proposed dam site is located at approximate latitude **0.05890° N** and Longitude **36.55636° E** in Umoja Mbuyu area of Ndaragwa Sub County in Nyandarua County.

The project was identified through participatory integrated community development (PICD). It is a priority project in the County Integrated Development Plan- 2 (CIDP2). The Project funding is from World Bank through KCSAP and Community. The proposed Umoja Mbuyu dam project is a one of the sub-projects funded by KCSAP Nyandarua. The project will benefit 315 community members (126 males, 189 females). It is estimated to cost **KES 28,590,000.**

This SPR has been undertaken to fulfil the legal requirements in the Environmental Management (amendment) Act (EMCA) 2015, in Legal notice No. 31 and 32 of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 (hereafter referred to as the Legal Notice) and World Bank Environmental and Social Safeguards framework.

The approach and methodology used to carry out the SPR included screening, scoping, visiting the proposed site, physical observation, field data collection, public consultation, literature review and desk review. Public participation for this proposed project was accomplished through holding a public meeting within the proposed project site grounds, where public views were obtained by the use of public participation questionnaires. The exercise was carried out during a season where public gatherings were restricted following the prevailing COVID-19 pandemic. During the exercise, all COVID-19 proposed prevention measures were adhered to. The investigation examined the potential impacts of the project on the immediate surroundings with due regard to construction and operation phases.

The positive impacts associated with the project will include improved income to local community, market for construction materials, enhanced access to water, environment conservation, increase in land value, improved food security, transfer of skills and promotion of social cohesion.

Some of the negative impacts anticipated include: increased solid waste generation, increased disease transmission, occupational health and safety related issues and increased social related conflicts. Mitigation measures to these adverse impacts will include: proper solid waste management and disposal, immediate medical attention to any ailments, proper wearing of relevant protective clothing and adherence to COVID 19 prevention/ containment measures.

The positive impacts of this project out do the anticipated negative impacts. Mitigation measures for the identified negative impacts have been proposed. On overall, there is no adverse environmental/ social impact foreseen that cannot be mitigated. Project implementation will be done with due attention to the mitigation and management measures outlined.

The tentative budget allocated for the proposed project is **KES. 28,590,000** and an ESMP cost of **KES. 608,000**. It is the responsibility of the project Proponent to allocate this budget to facilitate diligent implementation of the mitigation measures and minimize potential negative impacts at construction and operational phases of the project. This CPR recommend that for effective implementation of the mitigation measures for the project; all mitigation measures need to be specified in tender and contract documents, and must be included in the Specifications and Bills of Quantities. The contractor is to develop a C-ESMP to ensure compliance with the requirements in this document. The recommendation of this assessment is that the proposed project be allowed to proceed on strict condition that the environmental and social management plan is implemented and follow-up is made to ensure compliance as may be further directed by NEMA.

1.0 INTRODUCTION

1.1 Project Background

Umoja Mbuyu is an area in semi-arid part of Leshau Pondo Ward, Ndaragwa Sub-county, Nyandarua County. Water scarcity is a major issue in the area that is attributed to; unreliable rainfall, increase in water demand, increased settlement and inadequate water sources. To address these issues, Umoja Mbuyu community presented a proposal to Kenya Climate Smart Agriculture Project (KCSAP) to construct a dam across a natural seasonal waterway. A section waterway runs through public utility land belonging to the community. The dam will impound water for domestic, livestock and small-scale irrigation. This will build resilience of the beneficiary community to impacts of climate change.

The proposed dam site is located at approximate latitude **0.05890° N** and Longitude **36.55636° E** in Umoja Mbuyu area of Ndaragwa Sub County in Nyandarua County. The dam will be constructed within a public utility land **LR. No Nyandarua/Mbuyi /15/ 46 (See Appendix 2)**.

The project was identified through participatory integrated community development (PICD). It is a priority project in the County Integrated Development Plan- 2 (CIDP2). The Project funding is from World Bank through KCSAP and Community. The proposed Umoja Mbuyu dam project is a one of the sub-projects funded by KCSAP Nyandarua. The project will benefit 315 community members (126 males, 189 females). It is estimated to cost **KES 28,590,000.**

This SPR has been undertaken to fulfil the legal requirements in the Environmental Management (amendment) Act (EMCA) 2015, in Legal notice No. 31 and 32 of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 (hereafter referred to as the Legal Notice) and World Bank Environmental and Social Safeguards framework.

1.2 Justification of the proposed project

The challenges facing the residents of Umoja Mbuyu community informed by the need to construct a dam to enhance community coping mechanisms to climate change and improve food security. Umoja Mbuyu residents' main livelihood strategies are small-scale farming and small-scale livestock keeping e.g. cattle, sheep, goats and poultry. This has led the community to experience low household incomes because of climate change. With the proposed integrated project in the locality, food production will immensely improve because of diversified agriculture. It is therefore against this background that the proponent is proposing to implement the proposed project.

1.3 Justification of conducting the SPR

A team constituting of Nyandarua County Environmental and Social Safeguards Compliance Officer (CESSCO), Director Environment and Project Management Committee (PMC), screened the project. The screening results indicate it's a low impact project hence a Summary Project Report (SPR) was recommended in line with provisions in the Legal Notice.

1.4 objectives of the SPR

The objectives of this SPR project are:

- ✓ To discuss the nature of the project
- ✓ To predict and assess the probable environmental and social impacts
- ✓ To propose the appropriate mitigation measures
- ✓ To engage the public to present their views on the project
- ✓ To prepare an environmental and social management/monitoring plan
- ✓ To present the report for informed decision making by NEMA

1.5 SPR Approach and Methodology

This SPR was undertaken using the following approaches and methods:

a) Screening

A team of experts visited the project site, observed and engaged the project PMC to completing the screening checklist. The checklist assisted the team to assess environmental and social issues relating to the project. The issues identified include; project location, land use, site characterictics, social parameters and potential impacts. Finding documented in the checklist guided the team in determining the level of assessment required. The project has low risks hence this SPR.

b) Scoping

The scoping exercise was undertaken to identify potential environmental and social impacts of the project and proposed mitigation measures.

c) Desk Review

Relevant literature was reviewed to get a better understanding of the projects. Documents reviewed include among others; project designs, similar project reports, governments policies, laws, regulations and plans.

d) Field Data Collection

Data for the project was collected through site visit, observations, photography and consultation with the project beneficiaries in public baraza and key stakeholders.

1.6 Report outline

This SPR is organized into the following chapters: Introduction, Nature of the project, Location of the project, Public Participation and Stakeholders consultation, Potential project impacts, Mitigation measures to adverse impacts, ESMP, ESMonP, Conclusion and Recommendations, Photo Gallery, References and Appendices.

2.0 NATURE OF THE PROJECT

2.1 Introduction

In this chapter are the details of the project in terms of design, activities, material and equipment and project cost.

2.2 Project design

The project design took into consideration aspects of the project site. The project site has a bedrock with gentle sloping sides that forms a valley. The valley is a natural waterway making it suitable for a weir.

A reinforced concrete weir with an embankment length of 113 metres, base width of 3 metres, height of 5 metres and crest width of 1 metre, will be constructed. Reservoir area will be approximately 3 acres with a capacity of 27000 cubic metres (**See attached Design- Appendix 1)**

Table 1: Design details

Description	**Specification**
Embankment	
Embankment type	**Reinforced concrete**
Embankment volume	**600 m^3**
Embankment crest width	**1m**
Embankment height from deepest level to crest	**5m**
Embankment slope upstream	**0:1 vertical**
Embankment slope downstream	**1:5**
Embankment length	**113 m**
Embankment freeboard	**0 m**
Reservoir	
Active storage	**27,000m^3**
Full reservoir area	**3 Acres**
Design yield	**80 m^3 per day**
Dead Storage	**3,500 m^3**

2.3 Project activities

The following are the project activities;

- ✓ Bush clearing: The proposed dam site has few vegetation that will have to be cleared before construction begins.
- ✓ Delineation of the site
- ✓ Mobilization of machinery and equipment
- ✓ Procurement and delivery of building material
- ✓ Construction of formwork
- ✓ Steel works- will involve cutting, bending and fitting of steel bars in the formwork
- ✓ Casting of concrete into the formwork
- ✓ Fencing of the reservoir area to prevent loss of life and livestock.
- ✓ Construction of the distribution pipeline covering 4km square to household
- ✓ Construction of 8m high steel water tower
- ✓ Installation of storage tanks
- ✓ Installation of solar powered pump
- ✓ Construction of sanitation facility
- ✓ Construction of cattle troughs

2.4 Site Layout

The proposed site organized as per the attached layout **(See Appendix 3**)

2.7 Project cost and schedule

The project will directly benefit 315 households and estimated to cost **KES 28,590,000.00** which will be funded from KCSAP while the Umoja Mbuyu Community will provide in kind during the project implementation.

The project constructions works will commence once NEMA and other statutory approvals are received as well as the World Bank guidelines are met.

3.0 LOCATION OF THE PROJECT

3.1 Location of the proposed site

The proposed dam site is located at approximate latitude 00.05890° North and Longitude 36.55636° East in Umoja Mbuyu area of Ndaragwa Sub County in Nyandarua County. The land is currently bare - with no active activities going on apart from a seasonal stream running across it.

Figure 1: View of the proposed site

Figure 2: Site map

3.3 Land ownership and lease agreement

The land project land is a designated for public utility. The land is a freehold (see appendix 3).

3.4 Environmental Sensitive area

The proposed site is within an area not in proximity to an existing environmentally sensitive area.

3.5 Project infrastructure

Energy Access

Nyandarua County has a 10.5% electricity cover that is mainly found in urban centres. The main source of cooking energy is firewood. Most households' in Umoja Mbuyu use wood fuel for cooking. Some parts of the project area are connected to the national electricity grid while others use solar energy.

Settlements

Internally displaced persons settled the project area in the year 2012 from various tribal clash areas in the country.

Access road

The project site is accessible through an earthen road, which connects to the Gwa-Kungu – Nanyuki main road.

Land size and Use

The size of plots are 2 acres each. The lands is predominantly for subsistence crop and livestock farming.

Water reticulation system

There is no existing water reticulation system in the project areas.

3.6 Conformity and zonation

The project is not out of place with the general land use. The site is on a conservation area surrounded by agricultural land.

4.0 PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATION

4.1 Overview

Public participation is a constitutional requirement. Consultation was done with observation of the COVID 19 protocols. Consultation for the project was done through, key stakeholder engagement, baraza, focused group discussion, and filling of questionnaires.

4.2 Objectives of the consultations

The overall goal of the consultation process is to disseminate project information and to incorporate the views of the stakeholders with interest or influence in the Project, and Project Affected Persons (PAPs), in the design of the mitigation measures and an ESMMP.

The specific objectives of the public consultations are to:

- ✓ Inform the public about the proposed project;
- ✓ Provide an opportunity to the public to air their views, concerns and recommendations for the improvement of project design, and thereby minimize conflicts and delays in implementation;
- ✓ To identify perceived environment and socio-economic impacts by the community and their preferred mitigation measures for adverse impacts, and enhancement measures of the positive impacts; and
- ✓ To enhance project acceptability, long-term ownership and sustainability.

4.3 Categorization of participants and stakeholders

Key informants were from national and county government entities namely Local administration, social, agriculture, water and ward administration. Participants at the event were 25 males and 28 females**.**

4.4 Stakeholder Engagement and CPP Methodology

Public participation for this proposed project was accomplished through holding a public meeting held on 10th December 2020 within the proposed project site grounds, where public views were obtained by the use of public participation questionnaires. The exercise was carried out during a season where public gatherings were restricted following the prevailing COVID-19 pandemic. During the meeting, in-depth consultations were held with the key informants, the public and the interested parties from the project area. (**See annexed minutes of the meeting, list of attendance and filled questionnaires- Appendix 3, 4, & 5).**

Figure 3: Photos of Public participation

4.5 Summary of issues raised

The following issues were raised by the community members during public consultation

Anticipated benefits

- ✓ Farmers' economic self-improvement through income generated from the sale of irrigated horticultural crops;
- ✓ Employment creation at the farm level, transport sector and marketing of produce;
- ✓ Boosting horticultural sector through irrigation during dry seasons;
- ✓ Optimal use of land for horticultural production;
- ✓ Environmental benefits from increased tree cover once trees are planted;
- ✓ Improved food and nutrition security; and
- ✓ Increased farm incomes.

Negative Concerns

- ✓ Non-employment of local youth in the project construction phase;
- ✓ Exhaust fumes generated by transport trucks and concrete mixers and vibrators;
- ✓ Noise and vibration from construction trucks/machineries/equipment's;
- ✓ Accidents and hazards during construction that may affect workers and passers-by;
- ✓ Solid wastes such as, containers, wrapping materials;
- ✓ Increased incidences of water-borne diseases such as malaria
- ✓ Siltation of the reservoir from neighbouring farming

Suggested measures

- ✓ Give first priority to local community in employment during project implementation;
- ✓ Undertake intensive tree planting at the site to rehabilitate it
- ✓ Control soil erosion;
- ✓ Fencing of the site to prevent accidental drowning of residents and livestock.
- ✓ Provide mosquito nets to people living just next to the proposed reservoir.
- ✓ Stock the reservoir with fish that would feed on mosquito larvae.

4.6 Project acceptability

The community fully supports the project.

5.0 ANTICIPATED IMPACTS AND MITIGATION MEASURES

5.1 Overview

This chapter identifies positive and negative environmental and social impacts associated with the proposed project. The impacts are presented in relation to **project phases** namely: planning, construction, operation and decommissioning.

5.2 Planning Phase

5.2.1 Positive impacts during planning phase

i) Income generation

Different professional will be involved in this phase that will be a source of income.

ii) Compliance to legal requirements

The project requires approvals from relevant authorities among others NEMA, WRA. This will enhance compliance and ease monitoring.

iii) Community Engagement

The community will be engaged in project site identification; discussion on project details and approaches for implementation.

5.3 Anticipated Environmental and Social Impacts during construction

5.3.1 Positive impacts during construction phase

i) **Employment Creation**; Skilled and unskilled personnel will be employed in the project;

ii) **Improved income to local community**; income from employment, sale of building materials, sale of excess produce, accommodation and supply of food to construction workers.

iii) **Market for construction materials**; the project will be a ready market for locally available materials such as quarry dust, coarse aggregate and hard-core for the construction of the concrete dam and other structures including water troughs, latrine etc.

iv) **Harvesting of overland flow**; the proposed dam will store water for use during water scarce period.

v) **Enhanced access to water**; the locals will access to more water for domestic, livestock and irrigation.

vi) **Environment Conservation**; a lot of runoff water goes to waste during rainy seasons. The dam will store the water for use by the community. Water friendly vegetation will be planted around the dam enhancing environmental conservation

vii) **Increased land value in the project area**; availability of water will result in increased land value and productivity.

viii) **Improved food security**; beneficiaries will diversify agricultural products which will enhance food security.

ix) **Transfer of skills;** beneficiaries will gain new skills during project implementation

x) **Promotion of social cohesion;** project will enhance social cohesion as the residents in this area will be engaged in communal activities such as environmental and soil conservation.

5.4 Negative Impacts during construction phase

5.4.1 Noise and Vibration

The cumulative impact of the construction activities occurring simultaneously may increase the noise and vibration levels in the area significantly. This is temporary and the following measures will be implemented.

Mitigation measures

- Limit construction activities to daytime between 0800hrs to 1800hrs.
- Switch off engines and machinery when not in use.
- Conduct routine maintenance of construction equipment and machinery.
- Mount a well-marked billboard and warning signs.
- Avoid unnecessary hooting.
- Provide and monitor use of PPEs by workers.

5.4.2 Impact on local Air Quality (Dust and Fumes)

Construction works, vehicles, equipment and machineries emit fumes and dust which may cause air pollution. Pollution affects, neighbours and may cause respiratory problems in extreme situations

Mitigation measures

- Contractor to sprinkle water on surfaces.
- Provide and monitor use of PPEs by workers.
- Proper Maintenance of equipment and machinery.
- Minimize engines idling time.
- Use of alternative energy for construction equipment where feasible.

5.4.3 Solid waste generation and disposal

Construction activities will generate spoil materials and debris such broken woods, packing papers, plastics, cuttings and trimmings. Dumping around the site will interfere with the aesthetic status and has a direct effect on the surrounding community. Uncontrolled offsite disposal of wastes can be a menace.

Mitigation measures

- Engage a licenced waste handler.
- Segregate, separate and where possible recycle material.
- Procure necessary material to reduce wastage.
- Provide makeshift latrine.

5.4.4 Loss of Biodiversity

Construction of the dam will involve site clearance and casting of a concrete wall. This will lead to loss of vegetation cover.

Mitigation

- Properly demarcate the project area.

- Restrict construction vehicles to designated access routes.
- Proponent to plant trees and other vegetation to compensate the loss of biodiversity

5.4.5 Soil erosion

The construction activities may have short-term negative impacts on soil. Heavy machinery accessing the site may lead to soil compaction and erosion.

Mitigation Measures:

- Restrict clearance to the delineated area.
- Install appropriate drainage systems to direct water away from slopes.
- Designate a main access route for heavy machinery.
- Avoid preparing sites during strong winds.
- Train beneficiaries on soil and water conservation

5.4.6 Occupational Safety and Health/Public Safety

Use of heavy machinery during construction presents safety hazards to the construction workers and passerby. Vehicles and machinery can cause accidents resulting in injuries or death.

Mitigation Measures:

- Employ qualified drivers and machine operators.
- Provide workers with appropriate PPE and monitor use.
- Erect warning signs at strategic places.
- Develop and clearly display health & safety policy.
- Ensure proper maintenance of machinery and equipment.
- Provide a first aid kit and a trained first aider.
- Train workers on emergency preparedness and response.
- Use machines/equipment for the intended purpose.
- Ensure no worker under influence of alcohol or illegal substances is at site.
- Display an abstract of the Occupational Safety & Health Act 2007
- Schedule working hours appropriately.
- Provide adequate and safe drinking water.
- Provide adequate, gendered sanitary facilities.

5.4.7 HIV /AIDS and Sexually Transmitted Diseases

Influx of workers and traders may result to increased transmission of HIV/AIDS and STD

Mitigation measures

- Sensitization of workers on HIV /AIDS and STDs.
- Provide condoms;

- Control access to site by the general public
- Display warnings/ information materials using local language

5.4.7 Gender Based violence

Gender based violence may result from; gender inclusivity in hiring, failure to protect human rights of vulnerable groups, and interference with participation rights and labour Rights.

Mitigation Measures

- Develop and implement a clear human resources policy.
- Integrate provisions against gender-based violence in employees Code of Conduct (COC).
- Contractor to ensure all personnel sign and comply provisions of COC.
- Sensitization on gender-equitable approaches to compensation and employment.
- Ensure a functional Grievance Redress mechanism is in place.

5.4.8 Sexual Harassment

Sexual harassment may occur between various cadres of employees and workers. This may result from insufficient sensitization, absence of reporting procedures and disciplinary measures.

Mitigation Measures

- Integrate provisions against sexual harassment in employees Code of Conduct (COC).
- Develop and implement a clear human resources policy.
- Contractor to ensure all personnel sign and comply provisions of COC.

5.4.9 Child Protection

Children in or around a construction site may be vulnerable to child labour, sexual abuse, teenage pregnancies and exposure to communicable diseases such as HIV/AIDS.

Mitigation Measures

- Contractor to develop and implement a Children Protection Strategy.
- All personnel must sign &adhere to Child Protection Policy.

5.4.10 Sexual Exploitation and Abuse (SEA)

Incidences of sexual exploitation and abuse against women and men may also occur.

Mitigation Measures

- Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP.
- Create a Grievance Redress mechanism desk for community engagement.
- Regular community sensitization on social risks.
- Train and institutionalize disciplinary procedures and actions.

5.4.11 Social tensions and conflicts

These may emerge mainly due to acts of omission by project proponent or contractor. Some of the issues include among others delay in honouring agreements, employment opportunities and misunderstanding amongst stakeholders.

Mitigation Measures

- Address complaints and act immediately
- All corrective actions will be implemented within specified time;
- Manage all incidents or complaints on environmental or social issues within the legal framework;
- Record and address all incidents and complaints
- Sensitize workforce on sensitive cultural issues

5.5 Anticipated Environmental and Social Impacts during operation

5.5.1 Positive Impacts during Operation Phase

Water Supply

Completion of the project will improve access, supply, coverage and agricultural productivity for the beneficiaries. This will build their resilience against impacts of climate change.

Enhancement

- Distribution of water from the dam should cover as many beneficiaries as possible.

Biodiversity conservation and enhancement

Landscaping and planting of trees in the dam area will enhance the aesthetics and enhance biodiversity of the area.

Improved health status

Once the dam is complete and water distributed to the households, the drudgery of fetching water especially by women and girls will be reduced. This will save labour and time that can be put into other productive activities resulting to improved food security and health of their households.

Enhancement

- Sensitize the beneficiary on efficient water use.

Food and Nutritional Security

Small-scale irrigation will enable beneficiaries to diversify their crops to include high value crops such vegetables and fruits to boost their household nutrition and incomes.

Crop and Livestock Farming

Availability of water will have direct impact, as beneficiaries will improve on crop and livestock production.

Land Value

Reliable water source as a factor for settlement will lead to the land value increasing leading to development.

5.5.2 Negative Impacts during operation

5.5.2.1 Risk of drowning

Drowning in dams is a major risk to people and livestock if left unfenced.

Mitigation measures

- Fence off the reservoir area
- Erect warning signs
- Provide water troughs for livestock
- Sensitize community members on risks & interventions of drowning

5.5.2.2 Spread of Water Borne Disease

Contaminated water can cause water borne diseases.

Mitigation measures

- Fence off the reservoir from human and animal access.
- Provide troughs for watering livestock.
- Provide water points for human use.
- Construct gender sensitive sanitation facilities
- Train and sensitize the community on water treatment.

5.5.2.3 Water Use Conflict

The area being a water scarce and conflicts may arise over access and use of the resource especially during dry periods.

Mitigation measures

- Establishment of communication channels between the representatives of the community (PMC) and the responsible organization or administration at the County level.
- Water users' association to guide on water usage and conflicts resolution.
- Formulate and implement of bylaws in regard to distribution of the water resource and conflict resolution;
- Establish and operationalize grievance redress mechanism.

5.5.3.4 Flooding

Overflow of the dam can easily cause flooding of the nearby areas if proper measures are not in place.

Mitigation

- Construct the embankment according to the approved design and standards.
- Monitor dam and address any defects

5.5.2.5 Soil erosion

Soil erosion may occur with poorly designed inflow channels and embankment failure.

Mitigation

- Sensitize beneficiaries on water and soil conservation measures.
- Plant and nature indigenous species around the reservoir.
- Proper lining of the outflow channel with gabions or pitched stones

5.6 Anticipated Impacts during Decommissioning Phase

A project may be decommissioned because of change of policy, technology, and viability. The proponent may require demolishing structure and removing all materials from the site. Impacts during this phase include includes:

- Site degradation
- Solid wastes
- Soil erosion and
- Public safety.

Mitigation measures

- Engage a licensed waste handler to dispose the waste.
- Salvage and reuse recyclable materials.
- Develop a rehabilitation plan and submit to NEMA for approval.
- Fence and erect warning signs until site stabilize naturally.

7.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

7.1 Introduction

An Environmental and Social Management Plan (ESMP) is developed to ensure that social and environmental impacts and risks identified during the SPR process are managed effectively throughout the project cycle. The ESMP specifies the mitigation measures to be undertaken, assigns responsibility and cost of mitigating the impacts.

An Environmental and Social Monitoring Plan (ESMonP) specifies the mitigations, their indicators, their measure, frequency of monitoring and the monitoring costs. Its acts as a guiding tool during the project monitoring.

7.2 Environmental and Social Management Plan

Table 2: Environmental and Social Management Plan

Impacts	Mitigation Measures	Timeframe	Responsible	Cost (KES)
Noise and Vibration	• Limit construction activities to daytime between 0800hrs to 1800hrs. • Switch off engines and machinery when not in use. • Conduct routine maintenance of construction equipment and machinery. • Mount a well-marked billboard and warning signs. • Avoid unnecessary hooting. • Provide and monitor use of PPEs by workers.	During Construction	Contractor/ Proponent	10,000
Air Quality(dust & fumes)	• Contractor to sprinkle water on surfaces. • Provide and monitor use of PPEs by workers. • Proper Maintenance of equipment and machinery. • Minimize engines idling time. • Use of alternative energy for construction equipment where feasible.	During Construction	Contractor/ Proponent	10,000
Solid waste generation and Disposal	• Engage a licenced waste handler. • Segregate, separate and where possible recycle material. • Procure necessary material to reduce wastage. • Provide makeshift latrine.	During Construction	County Environment Committee (CEC)/Proponent & Contractor	15,000
Loss of biodiversity	• Properly demarcate the project area. • Restrict construction vehicles to designated access routes. • Proponent to plant trees and other vegetation to compensate the	During Construction	CEC/Proponent & Contractor	10,000

Impacts	Mitigation Measures	Timeframe	Responsible	Cost (KES)
	loss of biodiversity			
Soil erosion	• Restrict clearance to the delineated area. • Install appropriate drainage systems to direct water away from slopes. • Designate a main access route for heavy machinery. • Avoid preparing sites during strong winds. • Train beneficiaries on soil and water conservation	During Construction	CEC/Proponent & Contractor	20,000
Occupational Safety and Health/Public Safety	• Employ qualified drivers and machine operators. • Provide workers with appropriate PPE and monitor use. • Erect warning signs at strategic places. • Develop and clearly display health & safety policy. • Ensure proper maintenance of machinery and equipment. • Provide a first aid kit and a trained first aider. • Train workers on emergency preparedness and response. • Use machines/equipment for the intended purpose. • Ensure no worker under influence of alcohol or illegal substances is at site. • Display an abstract of the Occupational Safety & Health Act 2007 • Schedule working hours appropriately. • Provide adequate and safe drinking water. • Provide adequate, gendered sanitary facilities.	During Construction	Proponent & Contractor	45,000
Gender	• Develop and implement a clear human resources policy.	During	Proponent	15,000

Impacts	Mitigation Measures	Timeframe	Responsible	Cost (KES)
based violence	• Integrate provisions against gender-based violence in employees in the COC. • Contractor to ensure all personnel sign and comply with provisions in the COC. • Sensitization on gender-equitable approaches to compensation and employment. • Ensure that a functional Grievance Redress mechanism is in place.	Construction	& Contractor	
Sexual harassment	• Integrate provisions against sexual harassment in employees in the COC. • Develop and implement a clear human resource policy. • Contractor to ensure all personnel sign and comply with provisions in the COC.	During Construction	Proponent & Contractor	8,000
Child protection	• Contractor to develop and implement Children Protection guidelines. • All personnel must sign and adhere to Children Protection guidelines.	During Construction	Proponent & Contractor	10,000
Sexual Exploitation and Abuse	• Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. • Create a Grievance Redress mechanism desk for community engagement. • Regular community sensitization on social risks. • Train and institutionalize disciplinary procedures and actions.	During Construction	Proponent & Contractor	15,000
Social	• Address complaints and act immediately	During	Local	10,000

Impacts	Mitigation Measures	Timeframe	Responsible	Cost (KES)
Tension & Conflicts	• All corrective actions will be implemented within specified time; • Manage all incidents or complaints on environmental or social issues within the legal framework; • Record and address all incidents and complaints • Sensitize workforce on sensitive cultural issues	Construction	Administration, Proponent & Contractor	
Risk of drowning	• Fence off the reservoir area • Erect warning signs • Provide water troughs for livestock • Sensitize community members on risks & interventions of drowning	During operation	Project Management Committee(PMC)	250,000
Spread of water borne disease	• Fence off the reservoir from human and animal access. • Provide troughs for watering livestock. • Provide water points for human use. • Construct gender sensitive sanitation facilities • Train and sensitize the community on water treatment.	During operation	Project Management Committee(PMC)	150,000
Water use conflict	• Establishment of communication channels between the representatives of the community (PMC) and the responsible organization or administration at the County level. • Water users' association to guide on water usage and conflicts resolution. • Formulate and implement of bylaws in regard to distribution of the water resource and conflict resolution; • Establish and operationalize grievance redress mechanism.	During operation	Project Management Committee(PMC) and local Administration	10,000

Impacts	Mitigation Measures	Timeframe	Responsible	Cost (KES)
Flooding	• Construct the embankment according to the approved design and standards. • Monitor dam and address any defects	During operation	Project Management Committee(PMC)	10,000
Soil erosion	• Sensitize beneficiaries on water and soil conservation measures. • Plant and nature indigenous species around the reservoir. • Proper lining of the outflow channel with gabions or pitched stones	During operation	Project Management Committee(PMC)	10,000
Impacts during decommissioning	• Engage a licensed waste handler to dispose the waste. • Salvage and reuse recyclable materials. • Develop a rehabilitation plan and submit to NEMA for approval. • Fence and erect warning signs until site stabilize naturally.	During Decommissioning	Contractor & proponent	Decommissioning budget

7.2 Environmental and Social Monitoring Plan

Table 3: Environmental and Social Monitoring Plan

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
Noise and Vibration	• Limit construction activities to daytime between 0800hrs to 1800hrs.	-Noise level -No of machines emitting noise &	-Noise level records -Records of	Weekly (at the peak of activities)	Proponent/ NEMA/CPCU	10,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
	• Switch off engines and machinery when not in use. • Conduct routine maintenance of construction equipment and machinery. • Mount a well-marked billboard and warning signs. • Avoid unnecessary hooting. • Provide and monitor use of PPEs by workers.	vibrations -No of complaints received	work schedule -GRM records			
Air Quality(dust & fumes)	• Contractor to sprinkle water on surfaces. • Provide and monitor use of PPEs by workers. • Proper Maintenance of equipment and machinery. • Minimize engines idling time. • Use of alternative energy for construction equipment where feasible.	-Dust accumulation at site -No of dust related complaints	-Site photos -Inspection reports -GRM records -work schedules	Continuous during construction phase	Proponent/ CEC/Contractor/NEMA/CPCU	5,000
Solid waste generation and Disposal	• Engage a licenced waste handler. • Segregate, separate and where possible recycle material. • Procure necessary material to reduce wastage.	-Amount of waste generated - Availability & use of segregation bins -Availability of a	-Waste disposal records -Waste Management	Weekly	Proponent//CPCU/Contractor / (CEC)	5,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
	• Provide makeshift latrine.	Waste management plan - No. of latrines	plan -Waste bins -latrine structure			
Loss of biodiversity	• Properly demarcate the project area. • Restrict construction vehicles to designated access routes. • Proponent to plant trees and other vegetation to compensate the loss of biodiversity	-Area cleared - area replanted	-Inspection reports - photos -inventory of surviving plants	Continuous during construction phase	CPCU, Proponent & Contractor	5,000
Soil erosion	• Restrict clearance to the delineated area. • Install appropriate drainage systems to direct water away from slopes. • Designate a main access route for heavy machinery. • Avoid preparing sites during strong winds. • Train beneficiaries on soil and water conservation	-Area vegetation have been cleared -Amount of carried soil at site -No of Drainage system installed -Site work schedule -Site layout	-Inspection reports - -Design of drainage system Records of work schedule	Monthly	CPCU, Proponent & Contractor	10,000
Occupational Safety	• Employ qualified drivers and machine operators. • Provide workers with appropriate PPE	-No. of PPEs provided and in use -No. of persons	-Attendance list -Photos	Weekly	Proponent/ Public Health/ CPCU/DOSH	15,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
and Health/Public Safety	and monitor use. • Erect warning signs at strategic places. • Develop and clearly display health & safety policy. • Ensure proper maintenance of machinery and equipment. • Provide a first aid kit and a trained first aider. • Train workers on emergency preparedness and response. • Use machines/equipment for the intended purpose. • Ensure no worker under influence of alcohol or illegal substances is at site. • Display an abstract of the Occupational Safety & Health Act 2007 • Schedule working hours appropriately. • Provide adequate and safe drinking water. • Provide adequate, gendered sanitary facilities.	trained on health and safety -No. of incidents & incidences reported -No. of persons treated for injuries & work related ailments -No. of trainings on hygiene and sanitation -No. of workers Insured	-PPEs inventory and in use -Incidence record book -Insurance cover			
Gender	• Develop and implement a clear human	-No. cases of GBV	-Records of	Weekly	CESSCO,	20,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
based violence	resources policy. • Integrate provisions against gender-based violence in employees in the COC. • Contractor to ensure all personnel sign and comply with provisions in the COC. • Sensitization on gender-equitable approaches to compensation and employment. • Ensure that a functional Grievance Redress mechanism is in place.	reported -No. of sensitizations No. of persons sensitized on GBV	GBV reported -Sensitization reports of GBV.		Gender &Social Officer,	
Sexual harassment	• Integrate provisions against sexual harassment in employees in the COC. • Develop and implement a clear human resource policy. • Contractor to ensure all personnel sign and comply with provisions in the COC.	-No. cases of SH reported -No. of sensitizations of SH done -No. of persons sensitized on SH	-Records of SH reported and filed. -Sensitization reports of SH.	Weekly	Gender &Social Officer, PMC, CESSCO	30,000
Child protection	• Contractor to develop and implement Children Protection guidelines. • All personnel must sign and adhere to Children Protection guidelines.	-Incidences of Early pregnancies associated with the project -Incidence of school	-Complaints records on child abuse -Monitoring records	Weekly	Gender &Social Officer, PMC, CESSCO, Children	20,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
		dropouts	-Records from children department		Department	
Sexual Exploitation and Abuse	• Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. • Create a Grievance Redress mechanism desk for community engagement. • Regular community sensitization on social risks. • Train and institutionalize disciplinary procedures and actions.	-No. cases of SEA reported -No. of sensitizations of SEA done -No. of persons sensitized on SEA	-Records of SEA reported and filed. -Sensitization reports of SEA.	Weekly	Gender &Social Officer, PMC, CESSCO	30,000
Social Tension & Conflicts	• Address complaints and act immediately • All corrective actions will be implemented within specified time; • Manage all incidents or complaints on environmental or social issues within the legal framework; • Record and address all incidents and complaints	-No of conflict/incidents reported -Behavioral change Project delay -No. of training conducted	-Complaints reports -GRM	Weekly	Gender &Social Officer, PMC, CESSCO	30,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
	• Sensitize workforce on sensitive cultural issues					
Risk of drowning	• Fence off the reservoir area • Erect warning signs • Provide water troughs for livestock • Sensitize community members on risks & interventions of drowning	-No. of warnings displayed - water troughs -Fence in place	-Inventory of warning signages -Photos -Attendance list	Once after construction	CPCU, PMC	15,000
Spread of water borne disease	• Fence off the reservoir from human and animal access. • Provide troughs for watering livestock • Provide water points for human use. • Construct gender sensitive sanitation facilities • Train and sensitize the community on water treatment.	No .of persons in the community trained on health and safety No. of incidents reported No. of persons treated for named diseases No. of mosquito nets provided Length of fence at the water pan No. of toilet facilities at site	List of training attendants Training material and trainer Inspection report of the toilet facilities	Annual	PMC/CPCU	30,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
Water use conflict	• Establishment of communication channels between the representatives of the community (PMC) and the responsible organization or administration at the County level. • Water users' association to guide on water usage and conflicts resolution. • Formulate and implement of bylaws in regard to distribution of the water resource and conflict resolution; • Establish and operationalize grievance redress mechanism.	-No of conflict/incidents reported from families -No. of training conducted - By laws	-Complaints reports -GRM records Communication	During operation	Gender &Social Officer, PMC, CESSCO	10,000
Flooding	• Construct the embankment according to the approved design and standards. • Monitor dam and address any defects	-Engineer inspection schedule - Defects signs	-Embankment designs - construction inspection reports	Throughout the project	PMC/CPCU	10,000
Soil erosion	• Sensitize beneficiaries on water and soil conservation measures. • Plant and nature indigenous species around the reservoir. • Proper lining of the outflow channel with	-Soil conservation plan -Vegetation planted	-Site inspection reports	During operation	PMC/CPCU	10,000

Impacts	Mitigation Measures	Monitoring indicator	Means of verification	Frequency of monitoring	Responsibility	Cost (KES)
	gabions or pitched stones					
Impacts during decommissioning	• Engage a licensed waste handler to dispose the waste. • Salvage and reuse recyclable materials. • Develop a rehabilitation plan and submit to NEMA for approval. • Fence and erect warning signs until site stabilize naturally.	-Amount of waste generated - Availability & use of segregation bins -Availability of a Waste management plan -site hoarding	-Waste disposal records -Waste Management plan	During decommissioning period	Proponent/Contractor/NEMA	Decommissioning budget

8.0 CONCLUSION AND RECOMMENDATIONS

9.1 Overview

This chapter outlines the findings of the report. It also states the experts' recommendation in regard to the proposed project.

9.2 Conclusions.

The SPR findings outline both positive and negative impacts. The primary objective of the proposed project is to provide the beneficiary community with water for domestic and small-scale irrigation use that will enhance their resilience on impacts of climate change. The proposed dam will help enhance community coping mechanisms to climate change and improve food security.

The project is an environmentally medium risk project and thus poses no significant threat to the environmental aspects within the proposed project area. The positive impacts that will arise as a result of the implementation of this project will include among others improved income to local community, market for construction materials, enhanced access to water, environment Conservation, increased land value in the project area, improved food security, transfer of skills and promotion of social cohesion.

The SPR revealed that the proposed project has got both socio-economic and environmental benefits and costs. It emerged that the benefits exceed the costs. Also, all the identified environmental and social impacts can be mitigated to a level of minimum or no significance throughout the project cycle. Further, none of the potential impacts would result to permanent irreversible damage on the ecosystem components.

9.3 Recommendations.

The tentative budget allocated for the proposed project is **KES. 28,590,000** and an ESMP cost of **KES. 608,000**. It is the responsibility of the project Proponent to allocate this budget to facilitate diligent implementation of the mitigation measures and minimize potential negative impacts at construction and operational phases of the project. This CPR recommend that for effective implementation of the mitigation measures for the project; all mitigation measures need to be specified in tender and contract documents, and must be included in the Specifications and Bills of Quantities. The contractor is to develop a C-ESMP to ensure compliance with the requirements in this document. The recommendation of this assessment is that the proposed project be allowed to proceed on strict condition that the environmental and social management plan is implemented and follow-up is made to ensure compliance as may be further directed by NEMA.

REFERENCES

The Occupational Safety and Health Act, 2007, Government Printers, Nairobi

FAO, 2010: Analysis of Climate Change and Variability Risks in the Smallholder Sector.

Government of Kenya (GOK), (2013-2017). Nyandarua County Integrated Development Plan.

Government of Kenya (GOK), (2009). The 2009 Population & Housing Census, Volume 1, Nairobi, Kenya National Bureau of Statistics; 2009.

Kenya Gazette Supplement Acts, 2000, Environmental Management and Coordination Act Number 8 of 1999. Government Printer, Nairobi

Kenya Gazette Supplement Number 56. Environmental Impact Assessment and Audit Regulations 2003, Government Printers, Nairobi

Kenya Gazette Supplement Number 137. Environmental (Impact Assessment and Audit) (Amendments) Regulations 2016, Government Printers, Nairobi

Kenya Gazette Supplement Number 57, Environmental Management and Coordination (Controlled Substances) Regulations, 2007, Government Printer, Nairobi

Kenya Gazette Supplement Number 68, Environmental Management and Coordination (Water Quality) Regulations, 2006, Government Printer, Nairobi

Kenya Gazette Supplement Number 69, Environmental Management and Coordination (Waste Management) Regulations, 2006, Government Printer, Nairobi

Kenya Gazette Supplement Acts Land Planning Act (Cap. 303) Government Printer, Nairobi

12.Kenya Gazette Supplement Acts Physical Planning Act, 1999, Government Printers, Nairobi

13.Kenya Gazette Supplement Acts Water Act, 2002, Government Printers, Nairobi

Kenya Gazette Supplement Acts Public Health Act (Cap. 242) Government Printer, Nairobi

The Noise Prevention and Control Rules, 2005, Legal Notice No. 24, Government Printers, Nairobi

The Occupational Safety and Health Act, 2007, Government Printers, Nairobi

Nyandarua County Integrated Development Plan2018-2022

World Bank Guidance Notes on Tool for Pollution Management-Environmental Impact Assessment.

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF NYANDARUA
DEPARTMENTS OF LANDS, HOUSING &
PHYSICAL PLANNING.

Telegrams; PHYSIPLAN".Nyahururu
Telephone: Nyahururu 22819
When replying please quote

COUNTY PHYSICAL PLANNING OFFICE
P.O.Box1135 - 20300
NYAHURURU.

Ref: No. PPD/NYA/2539/VOL. I/46

14th November, 2018

Umoja Mbuyu New Settlers
Community Based Organization
P.o. Box 316
NYAHURURU

RE: CONFIRMATION OF OWNERSHIP OF PUBLIC UTILITY

I refer to your unreferenced letter dated 12th November, 2018 on the above subject matter.

This is to confirm that the following two sites were reserved as public utilities within Mbuyu as a result of planning for parcels No. Nyandarua/Mbuyu 15, 715, 725, 726 & 727 way back in November, 2010;

a) Parcel ballot No. 45 set aside as a Nursery School
b) Parcel ballot No. 46 set aside as a conservation area.

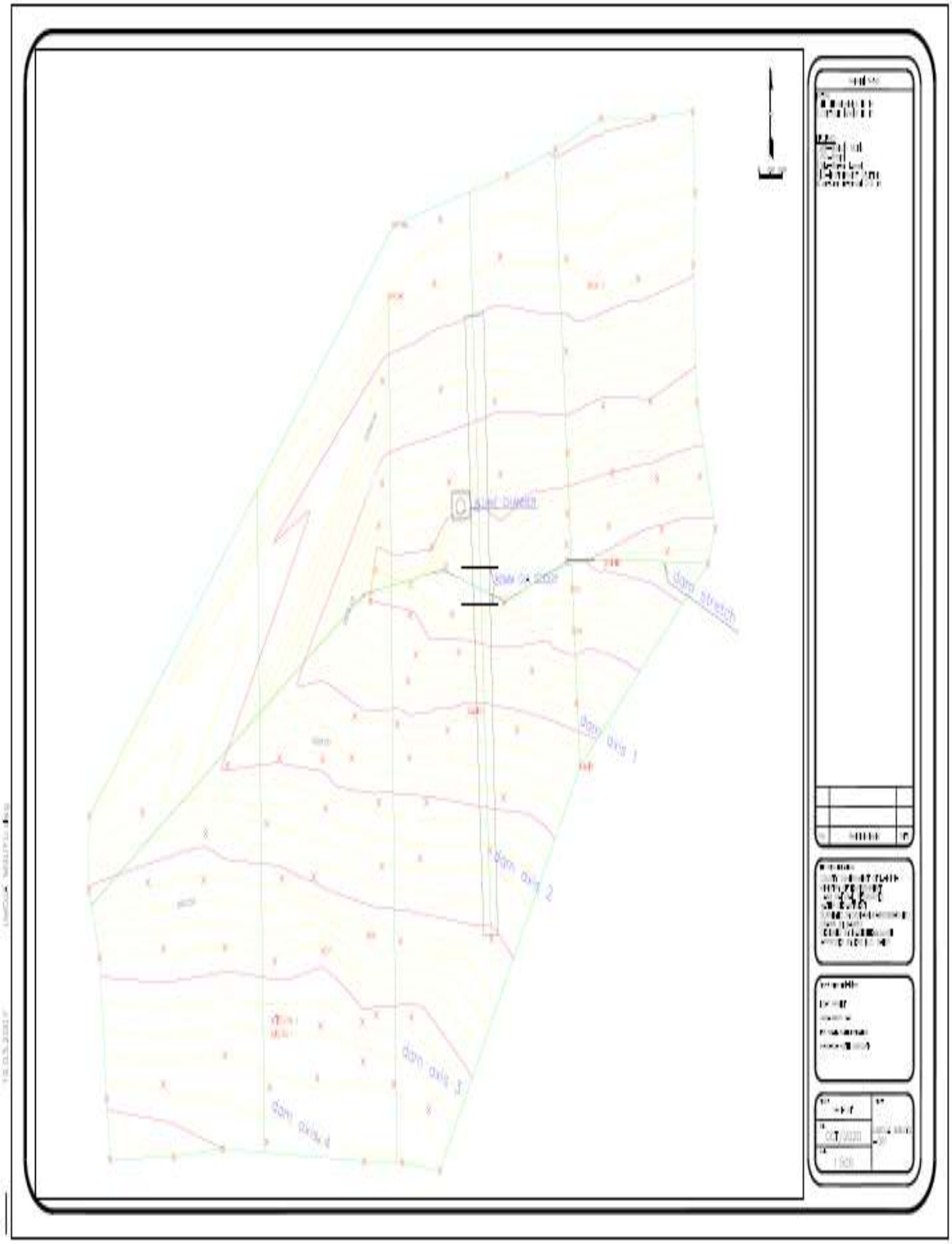
It is our hope that the information availed will be of assistance.

M.W. Muriuki
Ag; County Director Physical Planning
NYANDARUA

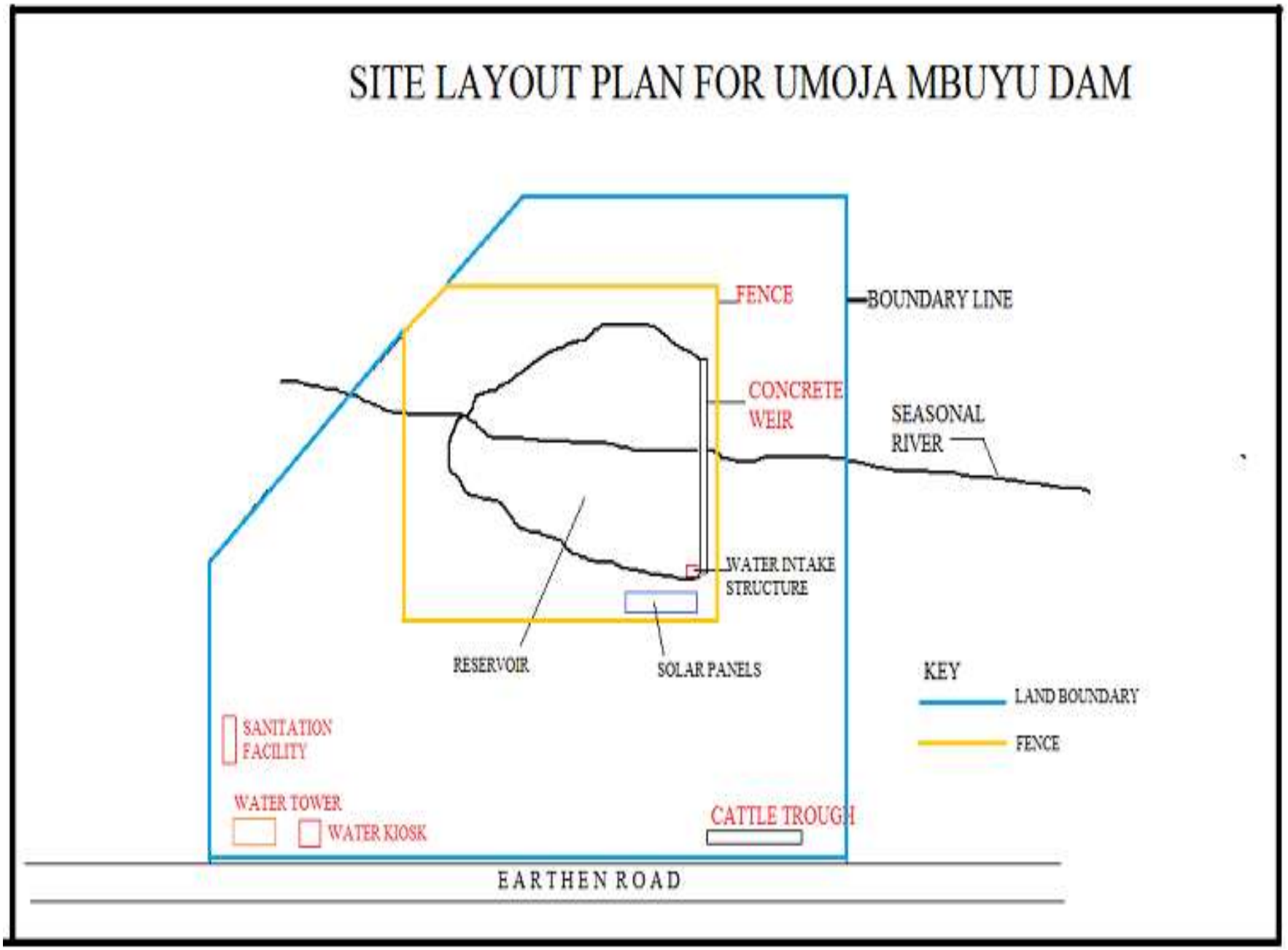
C.C Chief Officer- Lands, Housing & Physical Planning

CECM - Lands, Housing & Physical Planning

APPENDIX 2: PROJECT DESIGN & SITE LAYOUT



SITE LAYOUT PLAN FOR UMOJA MBUYU DAM



APPENDIX 3: MINUTES OF STAKEHOLDERS CONSULTED

MINUTES OF THE PUBLIC CONSULTATIVE MEETING FOR THE PROPOSED UMOJA MBUYU WATER PAN PROJECT HELD ON 20TH DECEMBER, 2020 AT THE PROJECT AREA IN LESHAU PONDO WARD, NDARAGWA SUB-COUNTY, NYANDARUA COUNTY FROM 11:30 AM TO 14:30 PM.

PRESENT

1) AS PER THE ATTACHED ATTENDANCE SCHEDULE

IN ATTENDANCE

1)	Billy King'ori	Kings-Link Ventures Kenya Ltd (EIA expert)
2)	Lavina Omondi	Kings-Link Ventures Kenya Ltd (EIA expert)
3)	Samuel Kagwi	Kings-Link Ventures Kenya Ltd (EIA expert)
4)	Kariuki Njunge	KCSAP
5)	Stephen Kiiru	Ward Administrator
6)	Nelly Kiptoo	Sociologist (CANEF)
7)	Mary Muturi	MOALF
8)	Geoffrey Ndirangu	MOALF
9)	Joseph Kuria	Ass.Chief

PRELIMINARIES

The meeting was started with a word of prayer from Pastor Maina and there after Mr. Geoffrey Ndirangu welcomed Umoja Mbuyu Community Based Organization members and gave the EIA team the technical support team from the Nyandarua County Government a chance to introduce themselves.

AGENDA

a) Project Design
b) Social Impact of the project towards the community
c) Environmental Impact
d) Questions from stakeholders
e) Filling-in of Questionnaires

A) PROJECT DESIGN

Engineer Kariuki Njunge gave a brief presentation to all participants and explained the project was design and how it will be implemented.

Stakeholders were informed that once the project was completed, there are plans to have the water piped to the respective homes for irrigation purposes. Community members agreed that they would help in digging the trenches to lay the pipes that would be used to supply the irrigation water.

The pipes would be laid along the road reserve from the project area to respective homes.

B) SOCIAL IMPACT OF THE PROJECT TOWARDS THE COMMUNITY

Mrs. Nelly Kiptoo addressed the stakeholders and sensitized them on the various social issues both positive and negative that might arise with implementation of the project as follows:

- Family setting: Parents/ guardians were urged to protect their children so as to ensure there are no cases of early pregnancies that might occur with their interaction with workers implementing the project. Parents should know where their children are at all times.
- Improved Nutrition: With availability of irrigation water, community members can practice farming which will lead to:
    - Improved Nutrition community member's will have fresh farm produce to eat
    - Improved Economic activities where they can sell their farm produce to earn a living
    - Improved Hygiene. With increased income level, families can afford to buy toiletries and clothes thus improving personal hygiene.
- Family members were urged to work together and not allow income generated from farming activities bring about conflicts.

C) ENVIRONMENTAL IMPACTS OF THE PROJECT

Miss. Lavina Omondi explained to the stakeholders the need to carry out an Environmental Impact Assessment (EIA) for projects listed in the second schedule of the Environmental Management and Coordination Act (EMCA) 1999.

Stakeholders were informed that National Environmental Management Authority (NEMA) was responsible in bringing harmony in the management of our country's environment. The EIA project report will be submitted to NEMA for review and approval.

Consultation and Public participation is a key process in the undertaking of the EIA. The consultation and participation is done with the community members who may be affected or interested in the project in order to obtain their views thus the reason consultative meeting for proposed Umoja Mbuyu Project was scheduled.

D) QUESTIONS FROM STAKEHOLDERS AND CLARIFICATION FROM THE EIA EXPERT

QUESTIONS FROM STAKEHOLDERS	CLARIFICATION AND ANSWERS
What measures will be put in place to ensure the water Pan is safe to the community?	KCSAP will put the following measures to ensure safety of the community; 1. The water pan will be fenced off to the public for their safety and their livestocks. Only authorized personnel will have access. 2. Watering troughs will be provided for watering the animals. 3. The community will have to form a Project Management Team that will be responsible in the day to day running of the water pan conducting surveys to ensure there is adequate security and members will not vandalize the fence to gain access to the

	pan. **4.** Members of the management team will be from the community who are conversant with the area and the residents who live/ operator in the project area.
How will the community benefit from the project?	The community will benefit from the project in the following ways; Water will be used for irrigation thus providing the farmers with constant supply of water for their crops and livestock all year round. This will bring the following benefits; Increased agricultural activities in the area 1. Job creation. Boda boda riders who will ferry the farm produce from the shambas to the local markets. 2. Improved health. With availability of fresh farm produce, community members will have access to nutrious foods that will boost their immunity. 3. Reduced crime rate with creation of jobs.
Water Pan might bring diseases.	The water might become a breeding ground for mosquitos, KCSAP will undertake the following measures to control the mosquitos: 1. Provide treated nets to household that live near the water pan, **2.** Introduce fish fingerlings in the Pan that will feed on the mosquito larvae thus controlling them.
What will happen to the fingerlings once they mature?	The community through the project management team will decide on how the community can harvest the fish for consumption or sale .

E) QUESTIONNAIRES

Stakeholders were issued with questionnaires to fill so as to give their opinion/ comments towards the project.

ADJOURNMENT

There being no other business the area assistant chief Mr. Joseph Kuria gave vote of thanks to all stakeholders and closed the meeting with a word of prayers.

APPENDIX 4: LIST OF STAKEHOLDERS CONSULTED

Activity: Public Participation – Umoja Mbuyu Concrete dam Date 10/12/2020.

Venue Umoja Mbuyu dam Site.

List of Attendance

No	Name	ID No/PNO	Organisation	Designation	Mobile Number	Email	Signature
1	Beatrice W Githinji	24165355	Umoja Mbuyu CBO	Committee	0723787256		
2	Ann W Mbauni	36152310	Umoja mbuyu CBO	committee	0743729120		
3	Ezekiel M Kimani	23476025	"	member	0791922788		
4	Joseph Ndwiga N	24604785	"	Member	0708567626		
5	Juliana Wanjiku W	37790821	"	Member	[illegible]	0859 985974	
6	Anna Wairimu	27960247	"	Member	0797920269		
7	Lydia Kathoni	21282080	"	member	0724979628		
8	Miriam Kihara	5961803	"	Member	0710832430		
9	Jane Wawira	21048429	"	Member	0748726750		
10	Grace Wangui	31070613	"	Member	0729769585		
11	Esther Wanjiku	12938311	"	Member	0111843902		
12	Teresia Nyaguthii	3818669	"	Member	N/A		
13	Ruth Wambui Njuguna	1039082	"	Member	0728882436		
14	Alice Wahito G	3189138	"	Committee	0729634773		
15	Beatrice Wanjiru W	25977888	"	member	0707492498		
16	Hamson Arthur M	25073907	"	Member	0724775285		
17	Pauline Wathira	10033453	"	Member	0713908351		
18	Jane Wambui	14010218	"	Member	0715640720		
19	David Njau Amendi	24995134	"	member	0728 815703		
20	Miriam Wawira N		"	Member	0729972074		

WORLD BANK GROUP
Agriculture

KCSAP
Kenya Climate Smart Agriculture Project

Republic of Kenya

Activity: Public Participation – Umoja Mbuyu Concrete dam –

Date 10/12/2020.

Venue Umoja Mbuyu dam Site.

List of Attendance

No	Name	ID No/PNO	Organisation	Designation	Mobile Number	Email	Signature
21	John Maina Wawera	25693202	Umoja Mbuyu CBO	Committee	0720304806		
22	Mary Gathoni Muraya		"	member	0795158093		
23	Tabitha Gachuki	23129651	"	Member	0728868161		
24	Alice Maina	10213966	"	Member	0724961681		
25	Rachael M Kang	4277262	"	member	0727280637		
26	Ephraim Kibaki M	1411866	"	member	0729163571		
27	Johana K Kamau	4669159	"	Committee	0724965467		
28	Peter Wawera	720713	"	Member	0717765577		
29	Peter Ndungu	28186704	"	member	0726061686		
30	David Ngigi M	12443826	"	Member	0726479876		
31	Josphat Ngari	0825165	"	Member	0729792802		
32	John Kariuki K	6710683	"	member	0722478673		
33	Francis W Kimani	1863827	"	member	0728815228		
34	Allan N Githinji	56446466	"	member	0729475187		
35	Joseph Nganga M	6990132	"	member	0713541017		
36	Wilson Kiburungu N	21861624	"	Member	0702593905		
37	Peter Ngugi K	28808492	"	member	0728932944		
38	Samuel Kariuki N	25778278	"	Member	N/A		
39	Kabuiku Gichuhy	3317505	"	member	0726876878		
40	Peter Mugo	22212842	"	Member	0714480410		

WORLD BANK GROUP
Agriculture

KCSAP
Kenya Climate Smart Agriculture Project

Republic of Kenya

Activity: Public Participation - Umoja Mbuyu Concrete dam Date 10/12/2020

Venue: Umoja Mbuyu Plansite

List of Attendance

No	Name	ID No/PNO	Organisation	Designation	Mobile Number	Email	Signature
01	Teresia Wathira Maina	13202202	Umoja Mbuyu CBO	Member	0712683465		Teresia
02	Margret Wanjiru K	23219185	"	member	0746617090		
03	Jane Njeri Ndungu	21324253	"	Member	0723342394		
04	Stephen Mbuvi Njoroge	8619174	"	member	0714383118		
05	Hannah Nyaguthi		"	member			
06	Paul M. Mathenge	27252782	"	Member	0725201903		
07	Alice Muthoni Kavaya	10044635	"	Member	0716614955		
08	Serafina Wanjiru K	7910198	"	Member	0714855100		
09	Peter Gitau	11466812	"	member	0715858029		
10	John Ndungu K	4678052	"	member	0727682233		
11	Susan Wanjiku m	9869421	"	Member	0743889685		
12	Mary Wanjiru M	7483774	"	Member	0728318685		

WORLD BANK GROUP
Agriculture

KCSAP
Kenya Climate Smart Agriculture Project

Republic of Kenya

Activity: Public participation – Umoja Mbuyu concrete dam Date.....

Venue Umoja Mbuyu Dam site

List of Attendance

No	Name	ID No/PNO	Organisation	Designation	Mobile Number	Email	Signature
53	[illegible]	[illegible]		D/C MAGW	0721335165		
54	Peter Maina Kihuga	2097787		Chairman	0720835133		
55	LOISE WANJIKU NDIRITU	23743866	Umoja Mbuyu	Secretary	0705567572	Loiswa5@gmail.com	
56	LAVINA OMONDI	30465167	Kingslink Ventures	SOCIOLOGIST	0718830702	lavina66@gmail.com	
57	BILLY KING'ORI	25770949	Kingslink Ventures	EIA EXPERT	0721172827	billyo@kingslinkventures.com	
58	Kaniaki Mwangi	20080874450	KCSAP	CESSCO	0721402006	Kaniakimwangi1@gmail.com	
59	Kilinu Stephen K.	19930010469	PA & ICT	WARDA ADM, LESHAU-NDOO	0726818586	Stepkiki2000@yahoo.com	
60	Kelly Kiptoo	20131021l	Social Services	C/A-NEF	0725115559	Kiptoonelly20@gmail.com	
61	MARY N. MUTURI	20090881444	MOALF	WLEO	0714241567	Marymuturi@gmail.com	
62	GEOFFREY N. NDIRANGU	19890682G3	MOALF	WATSCCO	0733249128	2016gendirangu@gmail.com	
63	JOSEPH K. KIVUA	13210337	O.O.P	ASST. CHIEF	0720294501	[illegible]	

APPENDIX 5: SAMPLE FILLED QUESTIONNAIRE

CONSULTATION AND PUBLIC PARTICIPATION

ENVIRONEMNTAL AND SOCIAL IMPACT ASSESSMENT PROJECT FOR THE PROPOSED UMOJA MBUY WATER PAN PROJECT IN NYANDARUA COUNTY.

World Bank in undertaking the Kenya Climate Smart Agriculture Project (KCSAP) has se aside funds to construct a water pan at Umoja Mbuyu to assist households to cope wit impacts of climate change and attain food security by increasing accessibility to wate resources.

Nyandarua County Government through the Kenya Climate Smart Agriculture Projec under the Department of Agriculture, Livestock and Fisheries has contracted Kings-lin Ventures Kenya Ltd to carry out an Environmental and Social Impact Assessment o water pan project.

The Environmental Impact assessment (EIA) regulation of 2003 require that all nev projects listed in the second schedule of the Environmental Management and Coordination Act (EMCA) 1999 must undertake an Environmental Impact Assessmen (EIA) and submit the project report to the National Environmental Managemen Authority (NEMA). Consultation and Public participation is a key process in the undertaking of the EIA. The consultation and participation is done with the community members who may be affected or interested in the project in order to obtain thei views.

As a valuable neighbor and stakeholder, we now seek your comments on the proposed Project . We therefore kindly request that you go through below questions and provide us with your comments

Thank you!

Personal /organizations details

Name ....Margaret Njeri.....

National ID.....66191774.....

Mobile Number .....0714 38 81 18.....

P.O BOX ....316 Nyahururu.....

Plot/L.R/Title Number...Umoja Mbuyu community Land.....

Approximate distance from your house to the project site.....1.5 metres.....

1. **Environmental issues**

Do you think the project will have any effect on:

a) Surrounding plants and animals? YES/ NO

If yes, please explain

.....

.....NO.....

b) Air? YES/NO

If yes, please explain

No effect

c) Water? YES/NO

If yes, please explain

No effect

d) Soil? YES/NO

If yes, please explain

Nb.

2. Healthy and Safety Issues

a) Do you think the project will cause injury or danger to you or the public?

No cause of injury or danger

3 General Concerns

a) Are there any historical or social-cultural heritage that would be affected by this project?
Yes [ ] No [ ] If yes, state them

There is no historical / social-cultural heritage

b) What benefits do you think the community will derive from the proposed project?

- Farming & irrigation - Living standards (cleaniness) & income).
- Water for the cattle (drinking) - Improved access roads.
- Improved health (food security)

c) What are the expected NEGATIVE IMPACTS of the project? (Kindly give possible mitigation measures)

- Disinfect / treat water before consumption; water borne diseases.
- Overflowing of the water in the water pan.

d) Please provide us with your comments or suggestion on enhancing environment, health and safety and wellbeing of the people around the project area.

- Construct a transitional spill way.
- In the place will be exposed to mosquitoes, supply mosquito nets to curb malaria.

Final remarks

Do you approve this project?

YES (✓) NO ( )

Signature.....

APPENDIX 6: NEMA PRACTICING LICENSE FOR FIRM OF EXPERTS.

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/13731

Application Reference No: NEMA/EIA/EL/18296

M/S **SAMUEL KIRUGU MUCHERU**
(individual or firm) of address

P.O. Box 27808-00100 Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **6634**

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

Issued Date: **1/18/2021** Expiry Date: **12/31/2021**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified

FORM 7 (r.15(2))

nema
mazingira yetu | ulai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/13729

Application Reference No: NEMA/EIA/EL/18293

M/S **KINGS-LINK VENTURES KENYA LTD**
(individual or firm) of address

P.O. Box 13288-00100,Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts**
registration number **9329**

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

Issued Date: **1/18/2021** Expiry Date: **12/31/2021**

Signature…..

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified