



**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENTS SUMMARY PROJECT  
REPORT FOR THE PROPOSED REHABILITATION OF MUNORU DAM ON PLOT L.R  
NO. NYANDARUA/TURASHA/276, RIRICHUA VILLAGE, GITHIORO WARD,  
KIPIPIRI SUB-COUNTY, NYANDARUA COUNTY.**



**LATITUDE -0.522530 AND LONGITUDE 36.447131**

**PROPONENT:**

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## CERTIFICATION

### 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 Rehabilitation of Munoru Dam on Lr No Nyandarua /Turasha/ 276, Ririchua Village, Githioro Ward, Kipipiri Sub-County, Nyandarua County.

#### Lead EIA/EA Expert

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Signature



Date 14/10/21

#### 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: Natali Mwambete Mbugua

Designation: Chairman - Munoru Dam Telephone: 0722381248

Signature: Natali Mwambete Date: 14<sup>th</sup> October 2021

## ACKNOWLEDGEMENT

I take this chance to convey my sincere appreciation to the farmers of Munoru and leaders of Bara Ithano for availing themselves and participating actively in the public engagement exercise conducted over this project. Special thanks go to the technical staff from the Department of Agriculture, Livestock & Fisheries and Social Services for guiding the process of public participation and participating in ESS screening of the project.

Successful preparation of this SPR would not have been possible without the support of NEMA, the County Project Coordinating Unit, and the Department of Water and Environment. Your technical ideas, positive criticism and participation in ESS screening played a big role in the compilation of this document.

I remain indebted to Ms. Miriam Ngotho for taking her time to review this SPR and her input in improving its quality standard to a level that is acceptable by the World Bank.

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## ABBREVIATIONS

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

## EXECUTIVE SUMMARY

Munoru Community Dam Project, Community Based Organization (CBO) in Ririchua area (Proponent) is proposing rehabilitation of Munoru Dam for domestic, livestock and small-scale irrigation. The project objective is to improve the livelihoods and build resilience of smallholder farmers to effects of climate change through provision of water. This is in line with KCSAP PDO that is to 'increase agricultural productivity and build resilience to climate change risks in the targeted smallholder farmers.' Upon completion of the rehabilitation works, the dam shall be used to harvest and conserve run off water for use in the Ririchua area.

The proposed rehabilitation of Munoru Dam Project for small-scale irrigation is to be implemented on **Lr No Nyandarua /Turasha/ 276, Ririchua Village, Githioro Ward, Kipipiri Sub-County, Nyandarua County** Ririchua Village Githioro Ward, Kipiriri Sub-county, Nyandarua County. The dam's GPS Co-ordinate is latitude **-0.5232630** and Longitudes **36.4416948**. Bara Ithano Shopping Centre is approximately 587 metres west of the proposed site. To the east of the site about 200 metres is solar powered borehole that is not operational.

This SPR was undertaken to fulfil the legal requirements in the Environmental Management (amendment) Act (EMCA) 2015, 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, literature review, desk review, scoping, site visit, physical observation, field data collection and public consultation.

Public participation for this proposed project was accomplished through holding a public meeting held on 22<sup>nd</sup> April 2021 within the proposed project site where public views were obtained by the use of questionnaires. Twenty two (22) community members attended the meeting as the exercise was carried out during a season where public gatherings were restricted following the prevailing COVID-19 pandemic. From the meeting positive impacts of the project were identified which included availability of water for domestic, livestock and irrigation; fisheries development once the rehabilitation is complete; improved food security; employment opportunities; establishment of tree and fruit nurseries and tourist attraction. Issues that were of concern from the meeting were non-employment of local youth, increased incidences of water-borne diseases such as malaria, drowning of human and livestock and water contamination from carwash and cloth washing. The issues raised will be addressed through giving first priority to local community in employment during project implementation, fencing of the site to prevent accidental drowning of residents and livestock, provision of mosquito nets to people living just next to the proposed reservoir and creation of a car wash area.

The positive impacts associated with the project will include among others: employment opportunities, enhanced access to water, environment conservation, land value increase, improved food security and transfer of skills. Anticipated negative impacts include among others: 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 among others: proper solid waste management and disposal, immediate medical attention to any ailments, provision and enforcement of proper use of PPEs and adherence to COVID 19 prevention/containment measures.

Tentative budget allocated for the proposed project is **KES. 29,000,000** and an ESMP cost of **KES. 785,000**. This SPR recommend that for effective implementation of the mitigation measures for the project; all mitigation measures need to be specified in the tender and contract documents, and cost must be included in the Specifications and Bills of Quantities. The contractor is to develop a C-ESMMP to ensure compliance with the requirements in this document.

The recommendation of this assessment is that the proposed project proceeds on strict condition that the ESMMP is implemented and complies with NEMA approvals.

Review of this SPR is undertaken during the Coronavirus Disease (COVID-19) pandemic outbreak. Preparation of the SPR including the relevant consultations have been undertaken in strict compliance with guidelines for infection prevention and control in the country. Additionally, specific mitigation measures have been introduced to prevent the spread of the pandemic during the construction period

## 1.0 INTRODUCTION

### 1.1 Project Background

Munoru Community Dam Project, Community Based Organization (CBO) in Ririchua area (Proponent) (**Appendix 1: Certificate of registration**) is proposing rehabilitation of Munoru Dam for domestic, livestock and small-scale irrigation. The project objective is to improve the livelihoods and build resilience of smallholder farmers to effects of climate change through provision of water. This is in line with KCSAP PDO that is to ‘increase agricultural productivity and build resilience to climate change risks in the targeted smallholder farmers.’ Upon completion of the rehabilitation works, the dam shall be used to harvest and conserve run off water for use in the Ririchua area.

The proposed rehabilitation of Munoru Dam Project for small-scale irrigation is to be implemented on **Lr No Nyandarua /Turasha/ 276, Ririchua Village, Githioro Ward, Kipipiri Sub-County, Nyandarua County** Ririchua Village Githioro Ward, Kipipiri Sub-county, Nyandarua County (**Appendix 2: Confirmation letter**). The dam’s GPS Co-ordinate is latitude **-0.5232630** and Longitudes **36.4416948**. Bara Ithano Shopping Centre is approximately 587 metres west of the proposed site. To the east of the site about 200 metres is solar powered borehole that is not operational.

The project was identified through participatory integrated community development (PICD). The Project funding is from World Bank through KCSAP. The project will benefit 285 household community members (126 males, 159 females). It is estimated to cost **KES 29,000,000**.

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

Ririchua area in Turasha ward experiences dry periods due to it being in the reward side of the Aberdares. Ririchua are main livelihood strategies are small-scale farming and small-scale livestock keeping which are affected by the dry conditions. 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), NEMA officer 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 31.

### **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 (**Appendix 3**). The checklist assisted the team to assess environmental and social issues relating to the project. 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 focus on the potentially significant impacts. During scoping, discussions were primarily held with the project proponent and stakeholders, and involved clarification of the proposed project and environmental aspects that need to be considered during project implementation.

#### **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) Public Consultation**

The EIA experts, in consultation with KSCAP, Nyandarua sought the views of persons likely to be affected by the proposed project by holding a public consultation forum. A public meeting was undertaken at the proposed site and the project area on 22<sup>nd</sup> April 2021. Twenty Two (22) community

members attended the public participation meeting. Stakeholders who attended the public participation and who gave their views included area Ward administrator, Social Officer, ward livestock development Officer, Ward Agricultural officer, Water Officer, Environment officer, and National Government Administration Officer (Area Chief) (**Minutes of the meeting, List of Attendance and Sample questionnaire- Appendix 5,6, & 7**).

### **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, 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 Activities

The project activities will include

- **Rehabilitation of the dam-** this will involve clearing encroaching vegetation caused by siltation. The works will also entail increasing the height of the embankment to increase the dam volume, construction of the spillway and reinforcing of breached section of the embankment.
- **Fencing-** the site is not currently fenced thus creating uncontrolled access to human and livestock to the reservoir area. The site will be fenced-off to keep off unauthorized persons and animals from the reservoir and to protect it. It was noted that some of the locals were washing motorbikes at the reservoir.
- **Construction of steel water tower and installation of storage tanks** - to serve the area well, elevated plastic tanks, on steel tower, will be installed to increase flow rate of water to beneficiaries including those far off from the source.
- **Solar pump installation-** a solar powered water pump will be installed to pump water to elevated tanks. This will enable gravitational water flow to the homesteads within the project area. The use of solar as source of energy is a climate smart intervention that reduces operational costs and enhances project sustainability.
- **Water reticulation-** the project intends to convey water from the dam to beneficiary community along the wayleaves of main roads in the area to avoid conflicts.
- **Construction of a cattle trough-** a cattle trough for watering livestock will be constructed within the project land but outside the fenced reservoir area to avoid direct entry of animal to the water pan
- **Establishment of tree nursery** – currently there ia tree nursery at the site but it's not well maintained. With the project, a more efficient and expansive tree nursery will be established.

### 2.3 Design and Site Layout

The proposed site organized as per the attached layout (**Appendix 4**).

#### **2.4 Project cost and schedule**

The project will directly benefit 285 households and estimated to cost **KES 29,000,000.00** funded from KCSAP while the Munoru 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.

#### **2.5 Land Ownership**

The proposed project site is a public utility facility that has been earmarked for dam purpose. (See **attached Confirmation Letter from in Appendix 2**).



### 3.0 LOCATION OF THE PROJECT

#### 3.1 Location of the proposed site

The proposed dam site is located at approximate latitude **-0.5232630** and Longitudes **36.4416948** in Ririchua area, Githioro Ward, Kipipiri Sub County in Nyandarua County. The land is a dam that was done during colonial time and is located across a natural water channel.

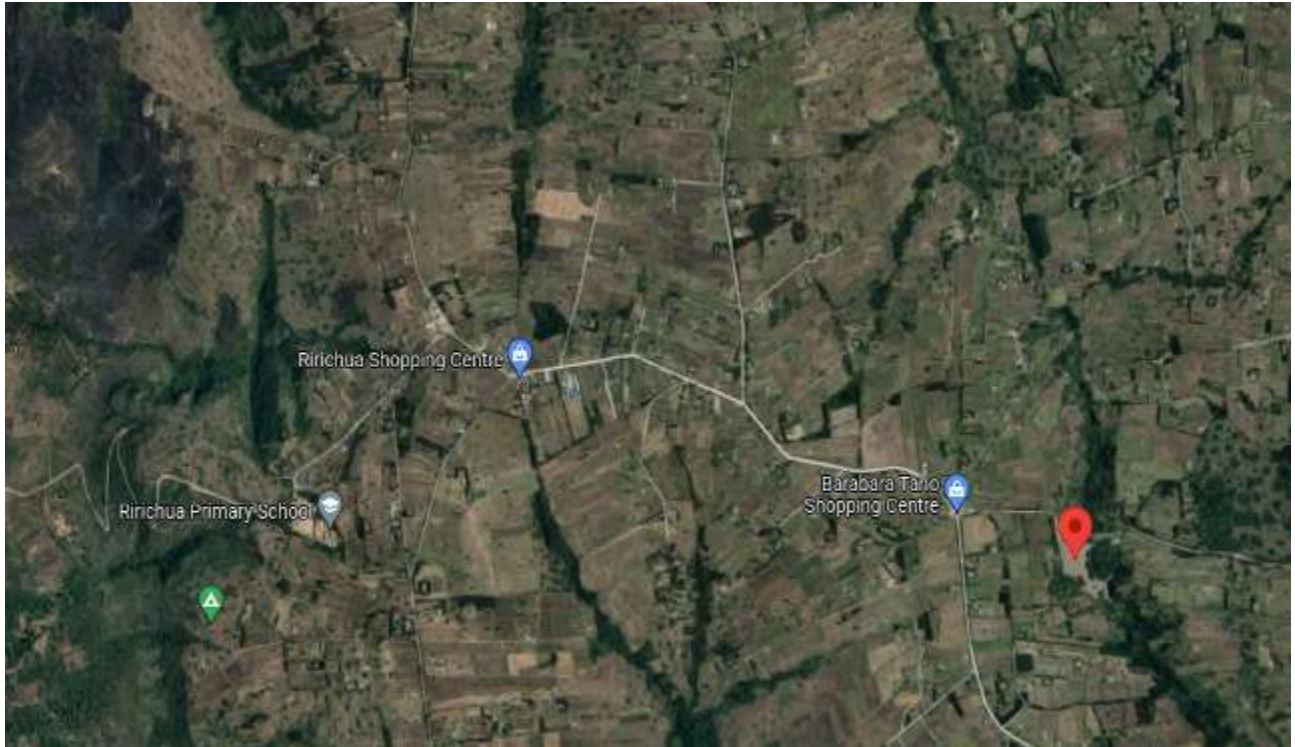


Figure 1: Site Map

#### 3.2 Land ownership and lease agreement

The proposed project site is a public utility facility that has been earmarked for dam purpose.

#### 3.3 Environmental Sensitive area

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

#### 3.4 Project infrastructure

##### Energy Access

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

##### Access road

The project site is accessible through an earthen road, which connects to the Murungaru – Turasha road.

##### Land size and Use

The average size of plots per farm family is 2 acres each. The land is predominantly for subsistence crop and livestock farming.

### **Water reticulation system**

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

### **3.5 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.

### 4.1 Introduction

This chapter describes the process of the public consultation and participation followed to identify the key issues and impacts of the proposed project. Views from the public who in one way or another would be affected or interested in the proposed project were sought through public meetings as stipulated in the Environment Management and Coordination Act, 1999.

### 4.2 Objectives of the public consultation

- 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 department and water and environment department.

### 4.4 Stakeholder Engagement and CPP Methodology

Public participation for this proposed project was accomplished through holding a public meeting held on 22<sup>nd</sup> April 2021 within the proposed project site where public views were obtained by the use of questionnaires. Twenty two (22) community members attended the meeting as 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 5, 6, & 7**).



Figure 2: Community meeting photos

#### **4.5 Summary of issues raised**

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

##### Anticipated benefits

- Water for domestic, livestock and irrigation will be available
- Fisheries development once the rehabilitation is complete
- Improved food security
- Employment opportunities
- Establishment of tree and fruit nurseries
- Will be a tourist attraction

##### Negative Concerns

- Non-employment of local youth in the project construction phase;
- Increased incidences of water-borne diseases such as malaria
- Drowning of human and livestock
- Water contamination from carwash and cloth washing

##### Suggested measures

- Give first priority to local community in employment during project implementation;
- Fencing of the site to prevent accidental drowning of residents and livestock.
- Provide mosquito nets to people living just next to the proposed reservoir.
- Create a car wash area away from the dam

#### **4.6 Project acceptability**

The community fully supports the project.

## **5.0 ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES**

### **5.1 Introduction**

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: construction, operation and decommissioning.

### **5.2 Positive Impacts during construction**

#### **Employment**

The construction activities of the dam and associated infrastructures offer various job creation opportunities in the project area.

#### **Transfer of skills**

During the implementation of the project, the local community who will be involved in the project implementation will gain new skills from the construction workers like masonry and plumbing skills

#### **Enhancement**

- Ensure that the local community get opportunities to work at the site

#### **Improving the Aesthetic Value**

Rehabilitation of the dam will clear the overgrown vegetation at the reservoir hence improving the aesthetic value of the area.

### **5.3 Negative Environmental and Social Impacts during construction**

#### **5.3.1 Air pollution (Dust generation)**

Construction activities often result in increased dust and gas emission. Pollutants emanate from movement of construction machinery and trucks as well as dust generated during construction.

#### **Mitigation Measures**

- Contractor to sprinkle water on surfaces;
- Provide and monitor use of PPEs/ dust masks by workers;
- Establish green spaces in the dam area

#### **5.3.2 Air pollution (Generation of exhaust emission)**

The following measures have recommended to mitigate impact of air pollution associated with exhaust emissions;

#### **Mitigation measures**

- Proper Maintenance of equipment and machinery;
- Keep vehicle idling time to the very minimum.
- Use alternative energy for construction equipment such as solar energy where feasible.

### **5.3.3 Water quality**

The activities involved in this phase of the development may cause a major negative long-term impact on the surface and ground water quality within the area. There will be deterioration in water quality downstream. During construction, waste in form of rubble and other forms may cause pollution to water quality that can affect downstream users. Potential sources of water pollution include site runoff and drainage from construction activities in the camps, effluent from general construction activities and sewage effluent from the construction workforce. Though the project magnitude is not that big, care and caution has to be taken to ensure no spills take place at the site.

#### **Mitigation Measures**

- Provide and monitor use of gendered sanitary facility at site
- Plan and manage storage of construction material on site.
- Stockpile waste in a designated area and dispose off appropriately
- Create an elaborate drainage system for waste water management at site
- Designate a servicing area for vehicles and machinery to control oil spillage

### **5.3.4 Soils and Geology disturbance**

Construction phase will involve excavations, soil disturbance and the proponent will put in place mitigation measures.

#### **Mitigation measures**

- Limit excavation to only the necessary areas.
- Compact any disturbed / loose area and restore these through tree planting
- Encourage beneficiary farmers to practice soil and water conservation on their farms

### **5.3.5 Noise & vibration**

Site preparation and excavation may cause ambient noise and vibration. Simultaneous construction activities may result to cumulative impact that may increase the noise and vibration levels.

#### **Mitigation**

- 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.

### **5.3.6 Solid and liquid waste**

The proposed project will generate liquid and solid waste during construction. The solid waste generated will be unusable excavated soil, packaging materials, used oil & grease containers, oil & fuel filters, used machine parts, left over foods, water bottles, worn out PPE, used masks and gloves among others. Liquid waste will come from washrooms at the site and spilt oils and fuel. Although this impact is short term, the disposal mechanism of the wastes can have long-term consequences.

#### **Mitigation measures**

- Engage a licensed waste handler.
- Segregate, separate and where possible recycle material.
- Procure necessary material to reduce wastage.
- Provide waste bins to hold wastes at the site
- Provide makeshift latrine during construction period

### **5.3.7 Biodiversity and vegetation loss**

The project will have a direct impact to the existing biodiversity in the project site since the rehabilitation works of the dam will involve removal of the vegetation cover to pave way for embankment extension. However, this development will have minimal impact to the biodiversity because the area to be cleared is small.

#### **Mitigation**

- Plant site specific species to compensate for the loss of biodiversity
- Beneficiaries to be encouraged to plant trees on their farms

### **5.3.7 Health and safety Impacts**

Occupational hazards and risks include among others respiratory infections, injuries and accidents in the workplace. The health of the site workers may be compromised by the food supplied by unlicensed food handlers.

#### **Mitigation measures**

- Sensitize workers on occupation health and safety at the site
- Provided and enforce use of PPEs.
- Erect suitable warning signages.
- Develop and clearly display safety policy on the site.
- Service and maintain machines and equipment regularly.
- Provide and maintain a well-equipped First Aid Kit and assign a trained first aider.
- Provide and maintain firefighting equipment.
- Train workers on emergency preparedness and response
- Restrict access to site for intoxicated persons.
- Acquire and display abstract of the Occupational Safety & Health Act 2007 at the site.

- Schedule works in shifts to avoid overworking
- Provide adequate and clean drinking water
- Provide and maintain gendered sanitary conveniences within the site

### **5.3.8 HIV /AIDS**

The project is likely to bring in a significant population of workers from outside the project area. These workers/traders may relate sexually with the locals leading to increased transmission of HIV/AIDS and STI

#### **Mitigation measures**

- HIV-AIDS awareness methods used in campaign to increase understanding about the disease;
- Raising awareness about HIV/AIDS;
- Sensitize workers on the benefits of abstinence /avoidance of illicit sexual engagements;
- Have condom dispenser at strategic places;
- Encourage workers to go for HIV voluntary counseling, testing and referral services;

### **5.3.9 Gender Based Violence (GBV)**

This impact is triggered during project construction phase when the Contractor fails to comply with gender inclusivity requirements in hiring of workers; failure to protect human risk areas associated with, disadvantaged groups, interfering with participation rights, and interfering with labour rights.

#### **Mitigation Measures**

- Sensitize workers on gender based violence
- Develop and implement human resources policy against GBV
- Appoint personnel to manage reports of GBV according to policy
- Include GBV issues in the COC
- Ensure that all personnel to individually sign and adhere to the COC.
- Engage and consult with the community on genders issues
- Develop and operationalize GBV referral mechanisms

### **5.3.10 Sexual Harassment**

Sexual harassment can occur between workers when there is insufficient sensitization of workers against prohibitions for sexual harassment, as well as the absence of reporting and disciplinary measures.

#### **Mitigation Measure to Protect against Sexual Harassment in the Workplace**

- Sensitize workers on sexual harassment
- Implement human resource policy on sexual harassment
- Integrate provisions on sexual harassment in the employee COC



- Appoint & assign a personnel to manage reports of sexual harassment

### **5.3.11 Labour Influx Effects**

Construction activities attract workers from diverse social and cultural backgrounds often resulting to a strain of resources complain from local community, sexual exploitation & abuse, and behavioral change.

#### **Mitigation Measures**

- Develop and manage a labour Management Plan (LMP).
- Develop and operationalize a grievance redress mechanism on matters related to labour
- Develop and adhere to contractual obligations to mitigate related risks.
- Engage the community through the PMC on labour hiring.
- Keep proper records on labour force
- Comply to provisions of Workplace Injuries and Benefits Act (WIBA) 2007
- Develop and implement Children Protection Strategy.

### **5.3.12 Sexual Exploitation and Abuse (SEA)**

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

#### **Mitigation measures.**

- Ensure clear human resources policy against sexual harassment that is aligned with national law
- Integrate provisions related to sexual harassment in the employee COC
- Ensure appointed personnel to manage reports of sexual harassment according to policy

### **5.3.13 Child Protection**

Children within project area will be exposed to risks associated with interaction between them and Project Workers. This includes child labour and sexual abuse which coherently leads to teenage pregnancies and exposure to communicable diseases such as HIV/AIDS. The contractor will undertake the following mitigation measures.

#### **Mitigation Measures to Child Protection**

- Ensure workers have valid identification documents to ascertain age
- Contractor to develop and implement a Children Protection Strategy.
- All personnel must sign & adhere to Child Protection Policy.

### **5.3.14 Health Impact – Spread of COVID-19 amongst construction workers**

Construction activities will take place during COVID-19 season. The potential for the spread of any infectious disease like COVID-19 by projects is high. There is also the risk that the project may experience large numbers of its workforce becoming ill and will need to consider how they will receive treatment, and whether this will affect local healthcare services including the project host community. Recognizing the potent risk this may present, it is difficult to clearly outline exhaustive mitigation measures under the mitigation impacts. As such, there is need for the client and the contractor to develop and adopt COVID-19 Standard Operating Procedure (SOPs) in line with the World Bank guidance, Ministry of Health Directives, and site-specific project conditions.

#### **Mitigation Measures**

- Customize SOPs and share with all workers at site
- Mandatory provision and use of appropriate PPEs for all project personnel
- Avoid concentration of more than 15 workers at one location
- Maintain social distancing of at least 2 meters
- Subject all site workers and visitors to rapid Covid-19 screening which may include temperature check and other vital signs
- Install handwashing facilities with adequate running water and soap
- Ensure routine sanitization of shared social facilities and other communal places.

### **5.3.15 Spread of COVID-19 amongst community members**

The activities of the project will lead to close interaction between the contractor/proponent and the community members leading to a high risk of spreading COVID–19 amongst community members during the consultation process.

To minimize the social risk, measures will be required to ensure social distancing and appropriate communication measures.

#### **Mitigation measures**

- Encourage electronic means of consulting stakeholders and holding meetings whenever feasible.
- No concentrating of more than 15 community members at one location.
- Maintain social distancing of at least 1.5 meters;
- Provided appropriate PPE for those engage the community and also for number of people they intend to meet;

### **5.3.16 Social tensions and conflicts**

Acts of omission and commission by the proponent/contractor that may result from delay in honouring agreements, employment opportunities and misunderstanding amongst stakeholders, may trigger social conflicts

#### **Mitigation Measures**

- Immediate address of complaints after receipt
- Timely completion of Investigations on received complaints;
- Management of complaints in accordance to the existing procedure in line with the legal framework;
- Record all incidents and complaints in the contractor's incident reporting system
- Sensitize workers on environmental incidents or complaints procedures to be followed
- Sensitize workforce on cultural sensitivities

## **5.4 Positive Environmental and Social Impacts during Operation phase**

### **5.4.1 Water Supply**

Indeed, the major long-term effect on water supply is positive as it will benefit the community in terms of improved efficiency of supply, increased coverage, and will boost sustainable agricultural development thus improving the economy to the area and the county at large.

#### **Enhancement**

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

### **5.4.2 Biodiversity conservation and enhancement**

Landscaping and planting of trees in the dam area will enhance the aesthetics and enhance biodiversity of the area. The group nursery will enhance access to seedlings to the community contributing to environmental conservation and reduction of Greenhouse Gas emissions.

#### **Enhancement**

- The proponent will ensure that the group managing the tree nursery is trained on nursery management for better results

### **5.4.3 Improved health status**

Once the dam is complete and water piped to the households, the struggle of fetching water especially by women and girls will be eliminated. The saved labour and time will enable them engage in other productive activities resulting to improved food security and health of their households.

#### **Enhancement**

- Educate the beneficiaries on crop management
- Sensitize the beneficiary on efficient water use.

#### **5.4.4 Food and Nutritional Security**

With the introduction of small-scale irrigation at household level, farmers will be able to diversify their crops to include irrigated and high value crops such vegetables and fruits to boost their household need and sell the surplus to earn incomes. This will contribute to improved food supply and nutrition at household level as well as incomes.

#### **5.4.5 Crop and Livestock Farming**

With water from the dam, the beneficiaries will improve crop production through small-scale irrigation and livestock farming.

#### **5.4.6 Land Value**

With the rehabilitation of the dam, the area will be assured of a water source for a longer period unlike before. Reliable water source as a factor for settlement will lead to the land value increasing leading to development.

#### **5.4.7 Income Generation Opportunities**

Operation of the project will create job opportunities in irrigated agricultures thus generating income from sale of the farm produces.

### **5.5 Negative Environmental and Social Impacts during Operation**

#### **5.5.1 Water quality & pollution**

The dam's water quality in the long run will be threatened by land use activities in the upstream area. More agricultural activities will provide substantial additional sources of polluted runoff substantially degraded water quality in the project area.

#### **Mitigation Measures**

- Ensure no discharges of wastewater or storm water into the dam
- Maintenance of the dam fence to restrict direct access of the dam human and livestock
- Minimizing alteration to catchment hydrology, including localized drainage patterns
- Sensitize the beneficiaries on environmental conservations

#### **5.5.2 Sedimentation**

Sediment loads, which are dependent on the catchment characteristics, are likely to be the major challenges to the lifespan of the proposed dam. The slope of the area is estimated at be less than 3% and the flow of run-off is physically sluggish, a situation that indicates a higher retention and storage capacity ability compared to the transportation speed (no measurements were carried out in this regard). In addition, the sediment load accumulation will lead to gradual reduction of storage capacity of the dam

#### **Mitigation**

- Provide check dams upstream of the dam.
- Encourage the local community to adopt sustainable land management practices to include planting of cover crops and trees in their farms

- Establish a tree nursery in the area
- Restore areas cleared of vegetation by planting trees
- Train beneficiaries on soil and water conservation

### **5.5.3 Health and safety concerns**

The proposed dam will have some negative implications on health and safety of the local community, which include among others; breeding ground for mosquitos increasing incidences of malaria and contamination of water leading to waterborne diseases like typhoid, cholera and diarrhea. The dam will also be a safety risk to children and animals.

#### **Mitigation measures**

- Sensitize the community on the potential health and safety risks
- Sensitize the community neighboring the dam on the need to use mosquito nets
- Stocking the dam with fish which eat the mosquito larvae
- Maintain the dam fences to ensure safety

### **5.6 Negative Impacts during Decommissioning**

The project can be decommissioned when the design period ends or due to: failure of the dam, drying of the dam and dilapidation of infrastructures overtime. Under these circumstances, the proponent will demolish all the structures including pump house, pipe works; remove the salvage materials and restore the sections affected to the original state.

#### **5.6.1 Soil Erosion**

This will occur because of opening up previously firm ground to remove buried pipelines.

#### **Mitigation measure**

- Soil conservation works should be maintained until the site stabilizes

#### **5.6.2 Visual impacts**

The impacts are anticipated because of draining the water pan and demolition of other concrete installations.

#### **Mitigation measure**

- Landscaping should be done to rehabilitate the open trenches

#### **5.6.3 Generation of waste material**

Waste will be generated during demolition of structures

#### **Mitigation measure**

- Contract a NEMA licensed waste handler

#### **5.6.4 Risk of accidents**

Once the project is decommissioned, open trenches and holes might be create which will be risky causing accidents

#### **Mitigation Measures**

- Fence off all unsafe and potentially dangerous areas

## **6.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN**

### **6.1 Introduction**

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

## 6.2 Environmental and Social Management and Monitoring Plan

Table 1: Environmental and Social Management and Monitoring Plan

| Impacts  | Mitigation Measures   | Monitorable Indicator  | Means of verification   | Frequency | Responsible | Cost (KES) |
|--|---|--|---|-----------|-------------|------------|
| <b>Environmental Impacts during Construction Phase</b> |   |  |   |           |             |            |
| Air pollution (Dust generation)                        | <ul style="list-style-type: none"> <li>Contractor to sprinkle water on surfaces;</li> <li>Provide and monitor use of PPEs/ dust masks by workers;</li> <li>Establish green spaces in the dam area</li> </ul>  | No of tree planted<br>Wet site<br>No. of workers with PPEs   | Inventory of tree planted<br>Photos<br>Records of PPEs  | Monthly   | Contractor  | 35,000     |
| Air pollution (Generation of exhaust emission)         | <ul style="list-style-type: none"> <li>Proper Maintenance of equipment and machinery;</li> <li>Keep vehicle idling time to the very minimum.</li> <li>Use alternative energy for construction equipment where feasible.</li> </ul>  | Dust accumulation at site<br>No of dust related complaints   | Site photos<br>Inspection reports<br>GRM records<br>work schedules  | Quarterly | Contractor  | 25,000     |
| Water Quality  | <ul style="list-style-type: none"> <li>Provide and monitor use of gendered sanitary facility at site</li> <li>Plan and manage storage of construction material on site.</li> <li>Stockpile waste in a designated area and dispose off appropriately</li> <li>Create an elaborate drainage system for waste water management at site</li> <li>Designate a servicing area for vehicles and machinery to control oil spillage</li> </ul> | No. of toilets at site<br>Number of waste bins/ skips provided<br>Environmental management policy at site<br>Number of workers and | Records of toilet construction at site<br>Waste management records<br>Environmental management policy plant<br>Water quality analysis records | Monthly   |             | 30,000     |



| Impacts                    | Mitigation Measures  | Monitorable Indicator   | Means of verification   | Frequency                          | Responsible | Cost (KES) |
|----------------------------|--|---|---|------------------------------------|-------------|------------|
|                            |  | beneficiaries sensitized on waste management  |   |                                    |             |            |
| Soil & Geology disturbance | <ul style="list-style-type: none"> <li>• Limit excavation to only the necessary areas.</li> <li>• Compact any disturbed / loose area and restore these through tree planting</li> <li>• Encourage beneficiary farmers to practice soil and water conservation on their farms</li> </ul>  | No. of beneficiaries trained of soil conservation<br>No. of tree planted            | Tree inventory List of beneficiaries<br>Training minutes          | Monthly                            | Contractor  | 40,000     |
| Noise & vibration          | <ul style="list-style-type: none"> <li>• Limit construction activities to daytime between 0800hrs to 1800hrs.</li> <li>• Switch off engines and machinery when not in use.</li> <li>• Conduct routine maintenance of construction equipment and machinery.</li> <li>• Mount a well-marked billboard and warning signs.</li> <li>• Avoid unnecessary hooting.</li> <li>• Provide and monitor use of PPEs by workers.</li> </ul> | -Noise level of machines emitting noise & vibrations<br>-No. of complaints received | -Noise level records<br>-Records of work schedule<br>-GRM records | Weekly (at the peak of activities) | Contractor  | 30,000     |
| Solid & liquid waste       | <ul style="list-style-type: none"> <li>• Engage a licensed waste handler.</li> <li>• Segregate, separate and where possible recycle material.</li> </ul>   | Amount of waste<br>No. of segregation   | Waste disposal records<br>Waste Management plan                   | Monthly                            | Contractor  | 55,000     |

| Impacts                                  | Mitigation Measures   | Monitorable Indicator   | Means of verification   | Frequency      | Responsible | Cost (KES) |
|--|---|---|---|----------------|-------------|------------|
|  | <ul style="list-style-type: none"> <li>Procure necessary material to reduce wastage.</li> <li>Provide waste bins to hold wastes at the site</li> <li>Provide makeshift latrine during construction period</li> </ul>  | bins<br>-Availability of Waste management plan<br>No. of latrines   | Waste bins<br>Latrine structure   |                |             |            |
| Biodiversity & vegetation loss           | <ul style="list-style-type: none"> <li>Plant site specific species to compensate for the loss of biodiversity</li> <li>Beneficiaries to be encouraged to plant trees on their farms</li> </ul>  | Area cleared<br>Area replanted  | Inspection reports<br>Photos<br>Inventory of plants   | After 3 months | Contractor  | 35,000     |
| Social Impacts during Construction Phase |   |   |   |                |             |            |
| Health & safety impacts                  | <ul style="list-style-type: none"> <li>Sensitize workers on occupation health and safety at the site</li> <li>Provided and enforce use of PPEs.</li> <li>Erect suitable warning signages.</li> <li>Develop and clearly display safety policy on the site.</li> <li>Service and maintain machines and equipment regularly.</li> <li>Provide and maintain a well-equipped First Aid Kit and assign a trained first aider.</li> <li>Provide and maintain firefighting equipment.</li> <li>Train workers on emergency preparedness</li> </ul> | No. of PPEs provided and in use<br>No. of first aid kits<br>No. of trained first aider<br>No. of persons trained on health and safety<br>No. of incidents & | Attendance list<br>Photos<br>PPEs inventory and in use<br>Incidence record book<br>Records of first aid kits<br>Training certificates of first aiders<br>Budget details for sanitary facilities | Monthly        | Proponent   | 100,000    |

| Impacts               | Mitigation Measures  | Monitorable Indicator   | Means of verification  | Frequency | Responsible                      | Cost (KES) |
|-----------------------|--|---|--|-----------|----------------------------------|------------|
|                       | <p>and response</p> <ul style="list-style-type: none"> <li>Restrict access to site for intoxicated persons.</li> <li>Acquire and display abstract of the Occupational Safety &amp; Health Act 2007 at the site.</li> <li>Schedule works in shifts to avoid overworking</li> <li>Provide adequate and clean drinking water</li> <li>Provide and maintain gendered sanitary conveniences within the site</li> </ul>                          | <p>incidences</p> <p>No. of Abstract in Display</p> <p>No. of sanitary facilities</p> <p>No. of signages</p>                    | <p>Records for the signages</p>  |           |                                  |            |
| HIV/AIDS              | <ul style="list-style-type: none"> <li>HIV-AIDS awareness methods used in campaign to increase understanding about the disease;</li> <li>Raising awareness about HIV/AIDS;</li> <li>Sensitize workers on the benefits of abstinence /avoidance of illicit sexual engagements;</li> <li>Have condom dispenser at strategic places;</li> <li>Encourage workers to go for HIV voluntary counseling, testing and referral services;</li> </ul> | <p>No. of local recruited for the project</p> <p>No. of Trainings on records on No. of condom dispensers</p> <p>Site fenced</p> | <p>Recruitment process reports</p> <p>Training records and manuals</p> <p>Records on condoms dispensed</p> <p>-Site inspection reports</p> | Monthly   | Contractor                       | 30,000     |
| Gender Based Violence | <ul style="list-style-type: none"> <li>Sensitize workers on gender based violence</li> <li>Develop and implement human resources policy against GBV</li> <li>Appoint personnel to manage reports of GBV according to policy</li> </ul>   | <p>-No. cases of GBV reported</p> <p>-No. of sensitizations</p>   | <p>-Records of GBV reported - Sensitization reports of GBV.</p>  | Weekly    | CESSCO, Gender & Social Officer, | 40,000     |

| Impacts           | Mitigation Measures   | Monitorable Indicator   | Means of verification  | Frequency | Responsible | Cost (KES) |
|-------------------|---|---|--|-----------|-------------|------------|
|                   | <ul style="list-style-type: none"> <li>• Include GBV issues in the COC</li> <li>• All personnel to individually sign and adhere to the COC.</li> <li>• Engage and consult with the community on genders issues</li> <li>• Develop and operationalize GBV referral mechanisms</li> </ul>   | No. of persons sensitized on GBV  |  |           |             |            |
| Sexual Harassment | <ul style="list-style-type: none"> <li>• Sensitize workers on sexual harassment</li> <li>• Implement human resource policy on sexual harassment</li> <li>• Integrate provisions on sexual harassment in the employee COC</li> <li>• Appoint &amp; assign personnel to manage reports of sexual harassment</li> </ul>  | No. cases of SH reported<br>No. of sensitizations of SH done<br>No. of persons sensitized on SH | Records of SH reported and filed.<br>Sensitization reports of SH.                              | Monthly   | Contractor  | 50,000     |
| Labour Influx     | <ul style="list-style-type: none"> <li>• Develop and manage a labour Management Plan (LMP).</li> <li>• Develop and operationalize a grievance redress mechanism on matters related to labour</li> <li>• Develop and adhere to contractual obligations to mitigate related risks.</li> <li>• Engage the community through the PMC on labour hiring.</li> </ul> | No. of labour related cases reported<br>No. of sensitization on labour matter                   | Records of labour related cases reported and filed.<br>Sensitization reports of labour matters | Monthly   | Contractor  | 40,000     |

| Impacts                     | Mitigation Measures   | Monitorable Indicator   | Means of verification   | Frequency | Responsible | Cost (KES) |
|-----------------------------|---|---|---|-----------|-------------|------------|
|                             | <ul style="list-style-type: none"> <li>Keep proper records on labour force</li> <li>Comply to provisions of Workplace Injuries and Benefits Act (WIBA) 2007</li> <li>Develop and implement Children Protection Strategy.</li> </ul>   |   |   |           |             |            |
| Sexual Exploitation & Abuse | <ul style="list-style-type: none"> <li>Ensure clear human resources policy against sexual harassment that is aligned with national law</li> <li>Integrate provisions related to sexual harassment in the employee COC</li> <li>Ensure appointed personnel to manage reports of sexual harassment according to policy</li> </ul> | <ul style="list-style-type: none"> <li>-No. cases of SEA reported</li> <li>-No. of sensitizations of SEA done</li> <li>-No. of persons sensitized on SEA</li> </ul>   | <ul style="list-style-type: none"> <li>-Records of SEA reported and filed.</li> <li>-Sensitization reports of SEA.</li> </ul>                         | Monthly   | Contractor  | 30,000     |
| Children protection         | <ul style="list-style-type: none"> <li>Ensure workers have valid identification documents to ascertain age</li> <li>Contractor to develop and implement a Children Protection Strategy.</li> <li>All personnel must sign &amp; adhere to Child Protection Policy.</li> </ul>  | <ul style="list-style-type: none"> <li>No. of workers at site</li> <li>Incidences of Ages of site workers</li> <li>No. of complaint on children protection</li> </ul> | <ul style="list-style-type: none"> <li>Complaints records on child abuse</li> <li>Workforce data</li> <li>Records from children department</li> </ul> | Weekly    | Contractor  | 30,000     |
| Health Impact –             | <ul style="list-style-type: none"> <li>Customize SOPs and share with all workers at site</li> </ul>   | -No. of PPEs provided   | -Records of incidents   | Daily     | Contractor  | 20,000     |

| Impacts   | Mitigation Measures   | Monitorable Indicator   | Means of verification  | Frequency                       | Responsible          | Cost (KES) |
|---|---|---|--|---------------------------------|----------------------|------------|
| Spread of COVID-19 amongst construction workers | <ul style="list-style-type: none"> <li>• Mandatory provision and use of appropriate PPEs for all project personnel</li> <li>• Avoid concentration of more than 15 workers at one location</li> <li>• Maintain social distancing of at least 2 meters</li> <li>• Subject all site workers and visitors 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> <li>• Ensure routine sanitization of shared social facilities and other communal places.</li> </ul> | <ul style="list-style-type: none"> <li>-No. of test done</li> <li>-No. of workers at the site</li> <li>-Distance between workers</li> </ul> | <ul style="list-style-type: none"> <li>reported.</li> <li>-Reports of training</li> <li>-Record on PPEs</li> <li>-Temperature checks records, Records of hand wash points</li> </ul> |                                 |                      |            |
| Spread of COVID-19 amongst community members    | <ul style="list-style-type: none"> <li>• Encourage electronic means of consulting stakeholders and holding meetings whenever feasible.</li> <li>• No concentrating of more than 15 community members at one location.</li> <li>• Maintain social distancing of at least 1.5 meters;</li> <li>• Provided appropriate PPE for those engage the community and also for number of people they intend to meet;</li> </ul>  | <ul style="list-style-type: none"> <li>No. of PPEs provided</li> <li>No. of Hand wash points</li> <li>No. of sensitization done.</li> </ul> | <ul style="list-style-type: none"> <li>Records of PPEs</li> <li>Site register</li> <li>Inventory on hand wash points provided</li> </ul>   | During the public participation | Proponent/Contractor | 40,000     |
| Social  | <ul style="list-style-type: none"> <li>• Immediate address of complaints after receipt</li> </ul>   | No of   | Complaints   | Monthly                         | Contractor           | 50,000     |

| Impacts   | Mitigation Measures   | Monitorable Indicator   | Means of verification   | Frequency        | Responsible | Cost (KES) |
|---|---|---|---|------------------|-------------|------------|
| tensions & conflicts                                | <ul style="list-style-type: none"> <li>• Timely completion of Investigations on received complaints;</li> <li>• Management of complaints in accordance to the existing procedure in line with the legal framework;</li> <li>• Record all incidents and complaints in the contractor's incident reporting system</li> <li>• Sensitize workers on environmental incidents or complaints procedures to be followed</li> <li>• Sensitize workforce on cultural sensitivities</li> </ul> | <p>conflict/incidents reported from families</p> <p>Behavioral change</p> <p>Project delay</p> <p>No. of training conducted</p> | <p>reports</p> <p>Incidence recording mechanism in place</p> <p>Communication</p>               |                  |             |            |
| <b>Environmental Impacts During Operation Phase</b> |   |   |   |                  |             |            |
| Water quality & pollution                           | <ul style="list-style-type: none"> <li>• Ensure no discharges of wastewater or storm water into the dam</li> <li>• Maintenance of the dam fence to restrict direct access of the dam human and livestock</li> <li>• Minimizing alteration to catchment hydrology, including localized drainage patterns</li> <li>• Sensitize the beneficiaries on environmental conservations</li> </ul>  | <p>Length of Fence at the water pan</p> <p>Number of Storm water control systems installed</p>                                  | <p>Inspection report of the check dam</p> <p>Fence</p> <p>Monitoring records of waste water</p> | After six months | Proponent   | 25,000     |
| Sedimentation                                       | <ul style="list-style-type: none"> <li>• Provide check dams upstream of the dam.</li> <li>• Encourage the local community to adopt sustainable land management practices to include planting of cover crops and trees in</li> </ul>   | <p>No of check dams constructed</p> <p>No. of trees</p>   | <p>Check dam inspection report</p> <p>Inspection report on trees planted</p>                    | Annual           | Proponent   | 50,000     |

| Impacts                                      | Mitigation Measures  | Monitored Indicator   | Means of verification  | Frequency | Responsible | Cost (KES) |
|--|--|---|--|-----------|-------------|------------|
|  | their farms <ul style="list-style-type: none"> <li>• Establish a tree nursery in the area</li> <li>• Restore areas cleared of vegetation by planting trees</li> <li>• Train beneficiaries on soil and water conservation</li> </ul>  | planted by the community members<br>Proportion of beneficiaries practicing soil and water conservation  | List of attendants for trainings   |           |             |            |
| <b>Social Impacts During Operation Phase</b> |  |   |  |           |             |            |
| Health & safety Concerns                     | <ul style="list-style-type: none"> <li>• Sensitize the community on the potential health and safety risks</li> <li>• Sensitize the community neighboring the dam on the need to use mosquito nets</li> <li>• Stocking the dam with fish which eat the mosquito larvae</li> <li>• Maintain the dam fences to ensure safety</li> </ul> | No. of persons trained<br>No. of incidents reported<br>No. of persons treated for waterborne diseases<br>No. household using of mosquito nets<br>Length of fence at the water pan | List of training attendants<br>Fence maintenance records<br>Records of fish stocks | Annual    | Proponent   | 30,000     |



| Impacts   | Mitigation Measures  | Monitorable Indicator   | Means of verification                                      | Frequency                     | Responsible | Cost (KES)             |
|---|--|---|--|-------------------------------|-------------|------------------------|
|   |  | Length of the fence   |  |                               |             |                        |
| <b>Environmental Impacts During Decommissioning Phase</b> |  |   |  |                               |             |                        |
| Soil erosion  | <ul style="list-style-type: none"> <li>• Soil conservation works should be maintained until the site stabilizes</li> </ul> | No. of Soil conservation plan<br>No. of Vegetation planted    | Site inspection reports<br>Inventory of vegetation planted | During decommissioning period | Contractor  | Decommissioning budget |
| Visual impacts  | <ul style="list-style-type: none"> <li>• Landscaping should be done to rehabilitate the open trenches</li> </ul>           | Trenches & open holes<br>Grass & vegetation planted           | Site inspection reports<br>Inventory of vegetation planted | During decommissioning period | Contractor  | Decommissioning budget |
| Generation of waste                                       | <ul style="list-style-type: none"> <li>• Contract a NEMA licensed waste handler</li> </ul>                                 | Disposal license at site                                      | Waste disposal records<br>Contracts for waste disposal     | During decommissioning period | Contractor  | Decommissioning budget |
| <b>Social Impacts During Decommissioning Phase</b>        |  |   |  |                               |             |                        |
| Risk of accidents   | <ul style="list-style-type: none"> <li>• Fence off all unsafe and potentially dangerous areas</li> </ul>                   | Length opens trenches<br>Area in metres of dangerous openings | Site inspection reports                                    | During decommissioning period | Contractor  | Decommissioning budget |

## **7.0 CONCLUSION AND RECOMMENDATIONS**

### **7.1 Overview**

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

### **7.2 Conclusion and Recommendations**

The negative environmental and social impacts on the implementation of this project are minimal and will be addressed through implementation of the environmental and social impacts management plans. These measures are part of the project component and will bring no added cost in the implementation process. The advantages of implementing the project are enormous and it will minimize a chronic water shortage that has affected the community for a long time. Water borne diseases may occur to include malaria, bilharzias and typhoid as the pan may act as breeding site for mosquitoes and other bacteria. These will be addressed through creation of awareness to the public on prevention and control of the diseases. In summary the potential negative impacts of the project are low and easy to mitigate, therefore they should not prevent the project from proceeding. The positive impacts and the benefits to the community are immense and welcome.

Thus, on behalf of the team, I recommend that NEMA should consider issuing approval for the implementation of the project. The report also recommend that the ESMMP forms part of the tender document to be given to the contractor.

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- 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 Plan 2018-2022
- World Bank Guidance Notes on Tool for Pollution Management-Environmental Impact Assessment.



Republic of Kenya

Certificate No. 44103

MINISTRY OF THE EAST AFRICA COMMUNITY, LABOUR AND SOCIAL PROTECTION  
DEPARTMENT OF SOCIAL DEVELOPMENT

**Certificate of Registration of Community Based Organization (CBO)**

*This is to Certify that*

MUMORU DAM COMMUNITY PROJECT  
Group Name / Project

TYASI/S/C-4103/21  
Registration No.

KIPPIRI  
Division

8TH FEBRUARY 2021  
Date of Registration

MUMORU  
Sub-location / Ward

KIPPIRI  
Constituency

KIPPIRI  
Sub County

MIRASHA  
Location

**is registered with the Department of Social  
Development Office as a Community  
Based Organization (CBO)**

County

Name **NAOMI W. KABACHO**  
County / Sub County Social Development Officer

Signature

8TH FEB. 2021/HEN:8TH FEB. 2022  
Date of Issue



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



**Certificate Date :** 18/10/2021

**Personal Identification Number**

P052061794B

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

**Taxpayer Information**

|                      |                              |
|----------------------|------------------------------|
| <b>Taxpayer Name</b> | MUNORU DAM COMMUNITY PROJECT |
| <b>Email Address</b> | MUNORUDAMCOMMUNITY@GMAIL.COM |

**Registered Address**

|                                 |                                     |
|---------------------------------|-------------------------------------|
| <b>L.R. Number :</b>            | <b>Building :</b> PREMA PLAZA       |
| <b>Street/Road :</b> MOI AVENUE | <b>City/Town :</b> NAIVASHA         |
| <b>County :</b> Nakuru          | <b>District :</b> Naivasha District |
| <b>Tax Area :</b> Naivasha      | <b>Station :</b> NAIVASHA           |
| <b>P. O. Box :</b> 800          | <b>Postal Code :</b> 20117          |

**Tax Obligation(s) Registration Details**

| Sc. No. | Tax Obligation(s)    | Effective From Date | Effective Till Date | Status |
|---------|----------------------|---------------------|---------------------|--------|
| 1       | Income Tax - Company | 18/10/2021          | N.A.                | Active |

The above PIN must appear on all your tax invoices and correspondences with Revenue Authority. Your accounting end month is December 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.

I Certify this as a true copy  
 of the original  
**GIKIMA WAINAINA**  
 ADVOCATE  
 Date: 12/11/2021



REPUBLIC OF KENYA

|                                 |                               |                  |
|---------------------------------|-------------------------------|------------------|
| DATE PRESENTED FOR REGISTRATION | PRESENTATION<br>Book No. .... | REGISTRATION FEE |
|---------------------------------|-------------------------------|------------------|

This form of instrument has been adopted for use pursuant to Section 128 of the Land Registration Act, 2012 to conform with the Land Act, 2012 and Land Registration Act, 2012

THE LAND ACT (No. 6 of 2012)  
THE LAND REGISTRATION (NO. 3 OF 2012)  
AND  
THE REGISTERED LAND ACT, CAP 300 (REPEALED)

**TRANSFER OF LAND IN SETTLEMENT SCHEME**

**TITLE NO: NYANDARUA NORTH/TURASHA/276**

THE LAND SETTLEMENT FUND BOARD OF TRUSTEES of Post Office Box 30450, Nairobi, Kenya, a body corporate established under section 167 of the Agriculture Act (Cap. 318) (hereinafter called "the Trustees") "Transferor" in consideration of the sum of shillings **KES FORTY EIGHT THOUSAND, FOUR HUNDRED AND SEVENTY SIX AND SEVENTY TWO CENT ONLY. (Ksh.48,476.72/=)** the receipt of which is hereby acknowledged do HEREBY TRANSFER to **MUNORU COMMUNITY DAM PROJECT REG. NO. NYASL/S/C-4103/21** of **TURASHA** hereinafter called "the Transferee" the land comprised in the above-mentioned title EXCEPTING the things and such rights as set out in the Schedule hereto.

1. FOR THE BENEFIT of the Trustees as the owners of all the land remaining in the Settlement Scheme of which said land forms part the Transferee hereby agrees with the trustees as follows-
  - a. That he will not use the said land for any purpose other than agriculture;
  - b. That he will not allow any fence, hedge or other feature marking the boundaries of the said land to be missing or fall into disrepair.
2. THERE IS RESERVED to the Trustees as the owners of the remainder of the land in the said settlement scheme such rights over the land in this title as are specified in the schedule hereto.

Dated this 21<sup>st</sup> day of JAN 2022

*[Signature]*  
 PURITY W. M. ANBI  
 ASSISTANT DIRECTOR  
 LAND, ADJ. & SETT.  
 DATE: 21/01/22

MINISTRY OF LANDS AND PHYSICAL PLANNING

Telegraphic Address: "LANDCON"  
Telephone: Nairobi 2718050  
When replying please quote



LAND ADJUDICATION AND  
SETTLEMENT DEPARTMENT  
P.O. Box 30297-00100  
NAIROBI

Ref. No. **DS/15/230 VOL.II/(148)**

Date: **18<sup>th</sup> November, 2021**

**MUNORU COMMUNITY DAM PROJECT**  
– REG. NO. NYASL/S/C-4103/21  
County Land Adjudication and Settlement Officer  
P. O. Box 126  
**NYAHURURU**

Dear Madam,

**SETTLEMENT PLOT – LETTER OF OFFER**


I am pleased to inform you that your application for a Settlement Plot has been successful.

The Government, through the Settlement Fund Trustees has offered you Plot No. 276 of approximately 3.9 Ha at **TURASHA SETTLEMENT SCHEME** in **NYANDARUA NORTH SUB-COUNTY**.

In pursuant thereto, please note that you are required to report to the District Land Adjudication and Settlement Officer, **NYANDARUA NORTH SUB-COUNTY** so that you are shown the plot boundaries and be issued with a letter confirming this before documentation.

This offer is valid for 90 days from the date of this letter. Within this period, you should pay the 100% deposit (**Kshs.48,480**) for the plot and be documented accordingly, failure to which will lead to cancellation of the offer without further reference to you.

Yours faithfully,

  
**KENNEDY N. G. NJENGA**  
**DIRECTOR OF LAND ADJUDICATION AND SETTLEMENT**

C.C. Principal Secretary,  
Ministry of Lands and Physical Planning  
P. O. Box 30450  
**NAIROBI**

Sub-County Commissioner,  
**NYANDARUA NORTH SUB-COUNTY**

County Land Adjudication and Settlement Officer,  
P. O. Box 129,  
**NYAHURURU**

ORIGINAL  
REPUBLIC OF KENYA

OFFICIAL RECEIPT

1657552

Station *Nairobi*

RECEIVED from *Manoru Community Dam* Date *23/11*

Shilling *forty eight thousand four hundred* only *eighty* only *20* 21  
on account of \_\_\_\_\_ cents

Vote Head *Isf*

Sub-Head *dep'ts*  
*off*

|    |                |       |
|----|----------------|-------|
| KS | <i>48,480</i>  | cents |
| AC | <i>Various</i> |       |
| No |                |       |

Signature No *Q*

Signature of OFFICER *[Signature]*

CHIEF ACCOUNTANT RECEIVING REMITTANCE  
AGRICULTURAL SETTLEMENT FUND  
P.O. Box 30297, NAIROBI

6

7146-100m Bks.-01/2018

552



# APPENDIX 3: SCREENING CHECKLIST

## ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

### Section A: Background Information

1. Name of County: Nyamira County

2. Name of CPUC: KCSAP Nyamira

3. Detail of the Sub-Project:

a) Name of Sub-Project: Manara Dam Rehabilitation Project

b) Postal Address: \_\_\_\_\_

c) Name of Contact Person: Joseph Mburu Call phone: 07950149895

4. Location of the Sub-Project:

a) Sub-County: Kipkiriri

Ward: Githungo

# GPS Coordinates: 0°31'19.601365 S ; 36°26'52.17732 N

5. Funds Allocated to the Sub-Project: KES 27,900,000

6. Number of Direct Beneficiaries: 265 Males: 117 Females: 136

7. Number of Indirect Beneficiaries: 1995 Males: 990 Females: 1005

8. Approximate size of land area available for the sub-project: \_\_\_\_\_

9. Objectives of the sub-project:

To increase volume of Manara Dam and distribute water to benefiting farmers for livestock production and Small Scale irrigation.

10. Activities to be undertaken:

- Rehabilitation of embankment and spillway of the dam.

- Fence off the reservoir area.

- Install a solar-powered Submersible pump to pump water to an overhead tank.

- Construct Auxiliary Structures such as: Sanitation facilities, cattle pens etc.

- Carry out water reticulation activities for water distribution to farmers.

11. How was the Sub-project chosen?

Through public participation.

12. Expected sub-project duration: one year

Causes any loss or degradation of any natural habitats, either directly (through project works) or indirectly?

|   |   |   |
|---|---|---|
| Affect the aesthetic quality of the landscape?  |   | ✓ |
| Reduce people's access to the pasture, water, public services or other resources that they depend on?                       |   | ✓ |
| Increase human-wildlife conflicts?  |   | ✓ |
| <b>Agrichemical use</b>   |   |   |
| Will the Sub-Project:   |   |   |
| Involve the use of pesticides or other agricultural chemicals, or increase existing use?                                    | ✓ | ✓ |
| Cause contamination of watercourses by chemicals and pesticides?  | ✓ | ✓ |
| Cause contamination of soil by agrochemicals and pesticides?  | ✓ | ✓ |
| Experience effluent and/or emissions discharge?   |   | ✓ |
| Export produce? Involve annual inspections of the producers and unannounced inspections?                                    |   | ✓ |
| Require scheduled chemical applications?  | ✓ | ✓ |
| Require chemical application even to areas distant away from the focus?   |   | ✓ |
| Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)? |   | ✓ |
| Use organic system in its implementation?   | ✓ |   |

If the answers to any of the above is 'yes', please include an IPMP with Sub-project application.

### Section E: Pesticides and Agricultural Chemicals

This questionnaire will be used with the farmers groups for purpose of implementing the IPMF

#### A) Pest Control practices:

a) Do you use any pesticides to control pests (Insects, diseases, weeds) of crops each season?

| Yes _____<br>No _____<br>If yes, | Name of pesticides | Name of pest, disease, | Number of times applied/season | When do you apply (growth stage or month)<br>Quantity purchased) |
|----------------------------------|--------------------|------------------------|--------------------------------|--|
|                                  |                    |                        |                                |  |
|                                  |                    |                        |                                |  |
|                                  |                    |                        |                                |  |
|                                  |                    |                        |                                |  |

If No, WHY?

b) If you use any of the above pesticide types, do you keep records of the:

Application location: Yes \_\_\_\_\_ No \_\_\_\_\_

Date of application: Yes \_\_\_\_\_ No \_\_\_\_\_

Pesticide product trade name: Yes \_\_\_\_\_ No \_\_\_\_\_

Crop use name: Yes \_\_\_\_\_ No \_\_\_\_\_

If No, WHY?

c) How do you decide when to use the pesticides (tick all that apply)?

- (1) \_\_\_\_\_  
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PLWD)

|   |   |  |
|---|---|--|
| Members of these VMGs in the area who could benefit from the project?                                       |   |  |
| VMGs in the area to be affected by the Sub-project?   | ✓ |  |
| If the answer to any of the above is 'yes', please consult the ESMF that has been prepared for the project. | ✓ |  |

Very important and important

Section G: Land Acquisition and Access to Resources

| Will the Sub-project   | Yes | No |
|--|-----|----|
| Require that land (public or private) be acquired (temporarily or permanently) for its implementation?   |     | ✓  |
| Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pastures, fishing locations, forests)? |     | ✓  |
| Displace individuals, families or businesses?  |     | ✓  |
| Result in temporary or permanent loss of crops, fruit trees and pasture land?  |     | ✓  |
| Adversely affect small communal cultural properties such as funeral and burial sites, or sacred groves?  |     | ✓  |
| Result in involuntary restriction of access by people to legally designated parks and protected areas?   |     | ✓  |
| Be an monoculture cropping?  |     | ✓  |

If the answer to any of the above is 'yes', please consult the mitigation measures in the ESMF, and if needed prepare a Resettlement Action Plan (RAP)

Section H: Proposed action

|   |   |
|---|---|
| (i) Summarize the above:  | (ii) Guidance:  |
| <input type="checkbox"/> All the above answers are 'No'<br><input type="checkbox"/> There is at least one 'Yes' | <ul style="list-style-type: none"> <li>If all the above answers are 'No', there is no need for further action.</li> <li>If there is at least one 'Yes', please describe your recommended course of action (see below).</li> </ul> |

Prepare a Summary Project Report for the Sub-Project.

(iii) Recommended Course of Action

If there is at least one 'Yes', which course of action do you recommend?

CPCU and County Director of Environment (CDE) will provide detailed guidance on mitigation measures as outlined in the ESMF; and

Specific advice is required from CDE and CPCU regarding Sub-project specific (SIA) and also in

# Munozu Dam

- All Sub-project applications/proposals MUST include a completed ESMP checklist. The RCNAP, CPGU and CDE will review the Sub-project applications/proposals and the CDEs will sign off.
- The proposals will then be submitted to CPCU for clearance for implementation by group members of the proposed Sub-projects.

Completed by: ESS Team Members and a member of the Sub-project:

1. Name: Karuki Nyaga Department ALF - KCSAP  
Designation CESSO Signature [Signature] Date 22/04/2021
2. Name: Miriam Matheni Nyathi Department Environment  
Designation Deputy Director Env Signature [Signature] Date 22/04/2021
3. Name: Ephraim Maina Gichu Department Water  
Designation Sub-County Water Signature [Signature] Date 22-04-21
4. Name of Sub-Project Contact Person: Joseph Mwangi Githau  
Designation Chair Signature [Signature] Date 22/04/2021

Field Appraisal Officer (CDE) Name [Signature]

Signature: [Signature]

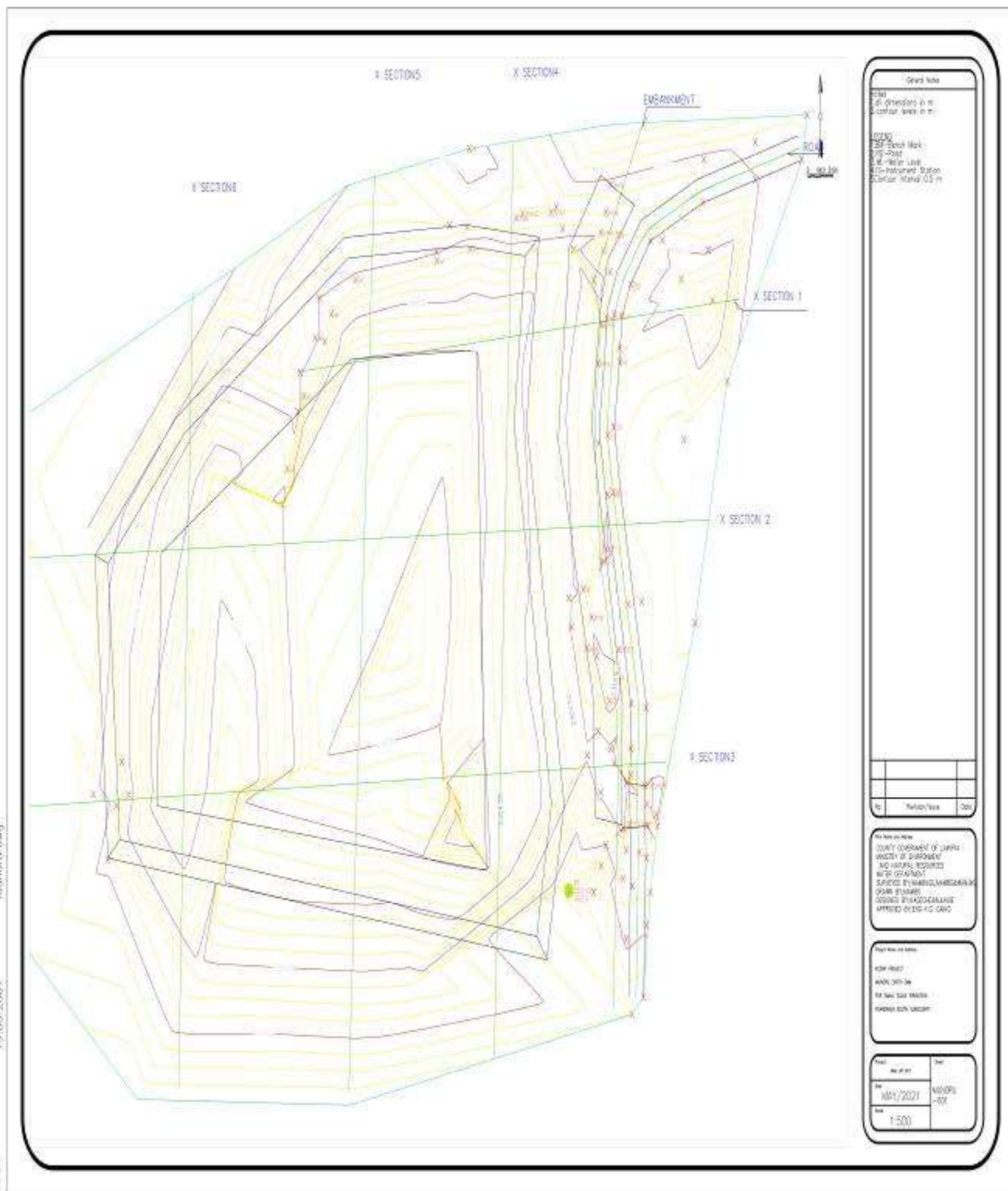
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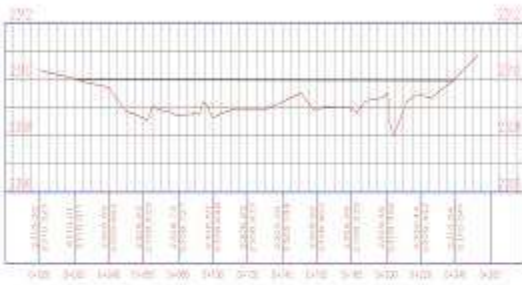


N.B. Submit Summary Report Report  
in accordance with legal notice  
No. 31 and 32 of 2012.

# APPENDIX 4: DAM DESIGNS AND SITE LAYOUT

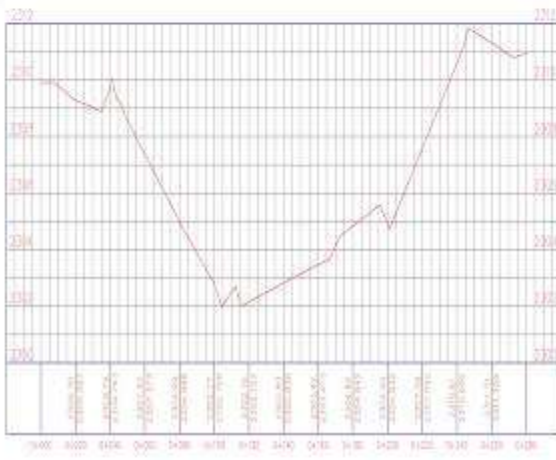


Alignment - Road PROFILE

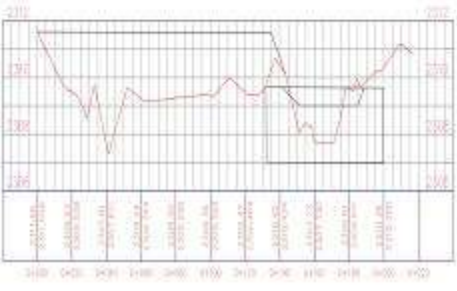


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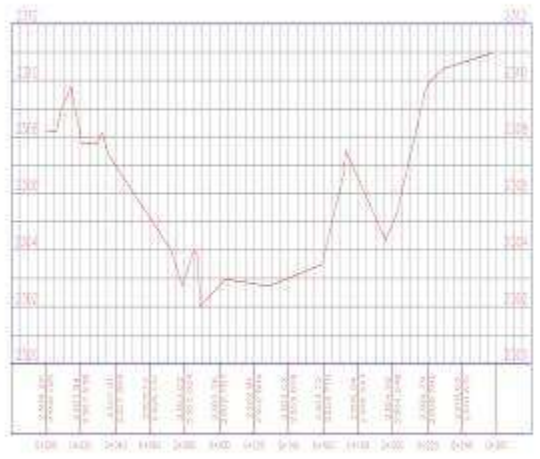
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Alignment - embankment PROFILE



Alignment - cross section 1 PROFILE

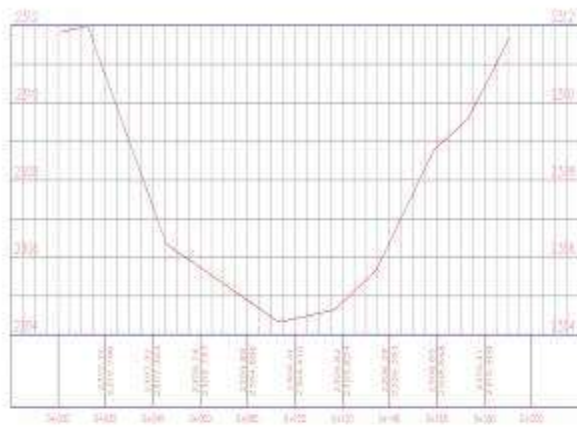


FOR THIS DRAWING  
 COUNTY: GOVERNMENT OF LARIBA  
 MINISTRY OF SUPPLY AND  
 MATERIAL RESOURCES  
 AND OPERATIONS  
 DIVISION OF ROAD DEVELOPMENT  
 FROM ISLAMABAD  
 SECTION: CHAKRAHAT  
 APPROVED BY: M. A. QURESHI

Scale: 1:1000  
 Date: MAY/2007  
 Drawn by: M. A. QURESHI

Sheet: 1 of 1  
 Date: MAY/2007  
 Scale: 1:1000

Alignment - cross section 5 PROFILE

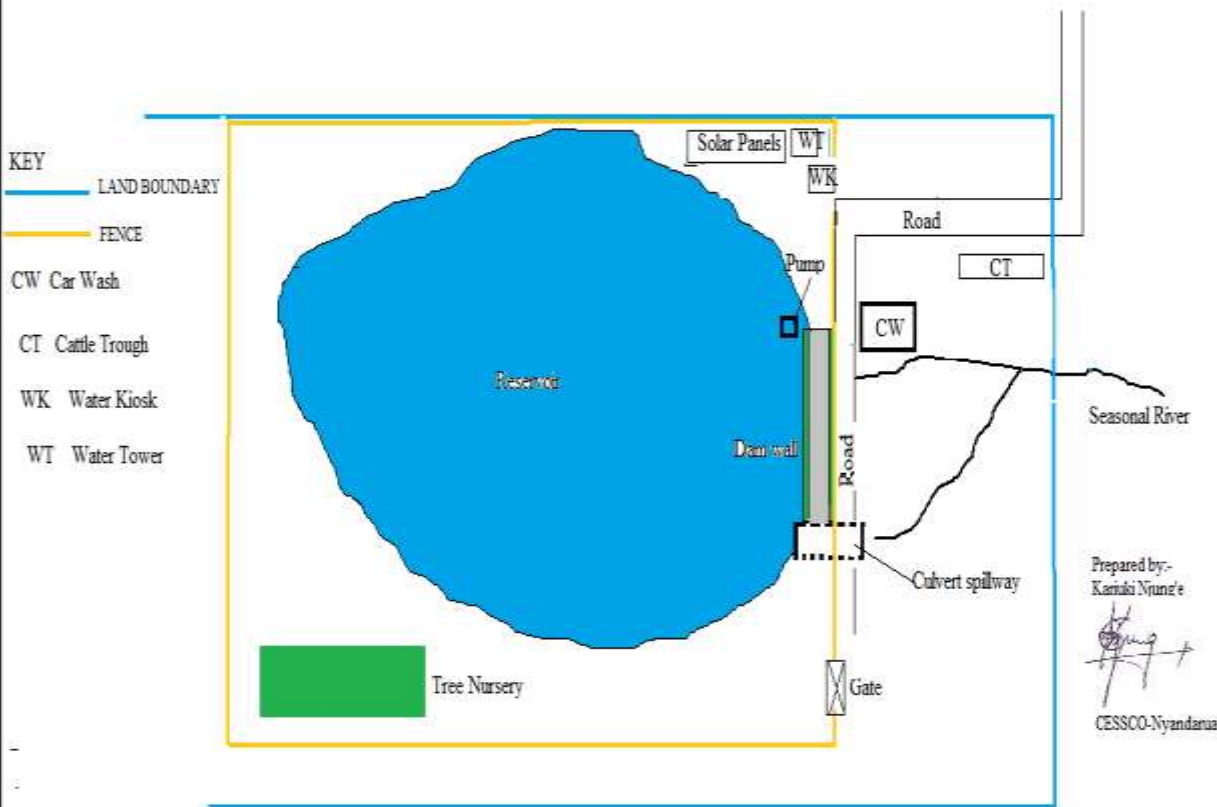


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## SITE LAYOUT PLAN FOR MUNORU DAM REHABILITATION PROJECT



Prepared by:  
Kamuki Ngun'e  
*[Signature]*  
CESSCO-Nyandarua

APPENDIX 5: MINUTES OF MEETING

PUBLIC PARTICIPATION MEETING HELD ON 22/04/2021  
AT DAM AREA.

OUR PRESENTE VISITORS:

Mr. NJUNGE - KCSAP.  
Mr. GICHUHI - ENVIRONMENT.  
Mr. MRUTHIA - AREA CDA.  
Mr. KIHARA - WARD ADMINISTRATOR  
Mr. GITAU - AREA CHIEF.  
Mr. KARANJI - ASS. CHIEF

PRESENT MEMBERS:

|    |          |          |           |
|----|----------|----------|-----------|
| 1  | NAFTALI  | MBUGUA   | Chairman  |
| 2  | CHARLES  | MBOGO    | Secretary |
| 3  | Samuel   | Kiragu   |           |
| 4  | Zakaria  | Kiragu   |           |
| 5  | James    | Ndungu   |           |
| 6  | Hannah   | Mukonye  | Treasurer |
| 7  | David    | Ndungu   | Comittee  |
| 8  | Jecinta  | Wambui   |           |
| 9  | John     | Njoroge  |           |
| 10 | Jane     | Wanjiku  |           |
| 11 | Nicholas | Mbugua   | Comittee  |
| 12 | Michael  | Mwangi   |           |
| 13 | John     | Wambugu  |           |
| 14 | J.F      | Wambugu  |           |
| 15 | Antony   | Iregi    |           |
| 16 | Daniel   | Mbogo    |           |
| 17 | Muguna   | Nene     |           |
| 18 | Simon    | Mucheru  |           |
| 19 | Mary     | Wangei   |           |
| 20 | Beatrice | Wangui   |           |
| 21 | Kuluko   | Kangethi |           |
| 22 | Stephen  | Kamau    |           |



- 23 Stanley Kumbo  
24 Moses Thambi  
25 Joel Ithagu

The meeting was opened with a word of prayer by member Antony Inegi at 10:30 am. The dam chairman thanked ~~the~~ and welcomed our visitor and present members.

Area A.S. Chief explained the importance to the community and requested the dam chairman to make arrangements on how to do the mapping the area and the title deed possession.

Area Chief gave Souko's apology who was to be in the meeting.

- He said the dam area Plot No. 276 is 9 acres and insisted it is a public utility

Mr. Nyugie introduced visitors to the community ~~the~~ and thanked the management committee for the good work they have done. He said among the ~~7~~ proposals Munira was one of the ~~three~~ which passed and was given 27,000,000 work to be done

- Piping to the registered of the project
- Installing of tanks and solar pumping pumps.
- ~~with~~ using the level of water by 1 metre
- Fencing etc.

- Current management committee to be added from 9 to 15 3 from every 5 areas, this must include gender & disabled.

Sub-committees to be included

- Environmental.
- Conflict
- Financial procurement development
- 

Mr Njuga's what is required from community is just that deed and water permits. Management committee to organise meeting with community on how to raise

Mr. Gichuki taught the community

- how to conserve soil
- mbabao planting all around after marking the area.
- trees planting and blue gum near the water
- maintain cleanliness of the water
- planting of fruits and vegetables.

Mr. Choge C.D.A.

- Advised people to form SHG and will help them to get certificates <sup>and assist</sup> hence apply on how to fill the proposal before the end of April 2023
- Main power will be from the community no outsiders unless otherwise.
- He promised to certificate to tree nursery projects.

Mr. Uihana Ward Administrator REP.

→ Advised the community to take advantage on the projects with time limit e.g KCSAP which is ending on by April 2023.

### Questions

Mr. Iregi - Will there be construction of tank and water point = Yes

### Conclusion

Members have agreed and appreciated the project to go on. (All members have agreed 100%).

Having no other business the meeting was closed with a word of prayer from member Stawely. Kiombe Karuki at 2:10 pm

Chairman -  
Secretary -

~~Stawely~~  
~~Kiombe Karuki~~

APPENDIX 6: LIST OF ATTENDANCE

Munyonyi Dam Attendance List

Personal Details

The National Environment Management Authority (NEMA) requires us to provide the respondents' details as a proof of their participation. Kindly provide your details.

| SNO. | NAME                   | CELL PHONE NUMBER |
|------|------------------------|-------------------|
| 1    | JOSHUA WAMBUNGU MUTURI | 0722247700        |
| 2    | NATHAN MURONGI MURUGU  | 0722351248        |
| 3    | Nicholas Mbugoch       | 0722 297193       |
| 4    | Humbak M. Kamau        | 0727 605 129      |
| 5    | Stanley W. Karumba     | 0712771155        |
| 6    | Stephan K. Kiwacha     | 0717492066        |
| 7    | Joel Wambunyu          | 0725677526        |
| 8    | Zacharia Mburu         | 0726926888        |
| 9    | Michael N. Mwanja      | 0710744030        |
| 10   | Shadrach M. Mwanja     | 0717 517 317      |
| 11   | Moses Thambi           | 0738133592        |
| 12   | David M. Kungu         | 0703289251        |
| 13   |                        |                   |
| 14   |                        |                   |

# Munonyi Dam Attendees List

## Personal Details

The National Environment Management Authority (NEMA) requires us to provide the respondents' details as a proof of their participation. Kindly provide your details.

| SNO. | NAME                   | CELL PHONE NUMBER |
|------|------------------------|-------------------|
| 1    | CHARLES NJUGUNA MBOGWO | 0724772592        |
| 2    | JECINTA WAMBUI WACHIAA | 0702795155        |
| 3    | MARY WANGICI KIBIRITU  | 07321742898       |
| 4    | ESTACE WANGUI CHESE    | 0717897025        |
| 5    | JANE WANGI KARIKA      | 0716704362        |
| 6    | JOHN KIHILLO KANGEMBE  | 0724880462        |
| 7    | SAMUEL WAHAI KIRAGU    | 0710587963        |
| 8    | SIMON MWANGI MUCHERU   | 0727517214        |
| 9    | JOHN NJUGU WANGI       | 0707504560        |
| 10   | ANTONY IKESI GITAU     | 0721932496        |
| 11   |                        |                   |
| 12   |                        |                   |
| 13   |                        |                   |
| 14   |                        |                   |
| 15   |                        |                   |

## APPENDIX 7: SAMPLE FILLED QUESTIONNAIRE

### PUBLIC CONSULTATION AND OPINION QUESTIONNAIRE

#### Introduction

We are conducting an EIA. Scoping Phase Report for Proposed Rehabilitation of Mawoto Dam for Small scale Irrigation Project, Githonyi Ward, Kiptipley Sub-County Nyandarua County. Part of the process involves seeking views and opinions from those close to the proposed project. Kindly fill in this questionnaire. Any information provided shall be handled with utmost confidentiality. Thank you for your assistance.

1. Are you a resident of this area? Yes  No

2. Are you aware of the proposed developments? Yes  No

3. Mention any positive impacts that will come out of the project?

1. IRRIGATION
2. FISH FARMING
3. DOMESTIC USE
4. FOOD SECURITY
5. CROWD EMPLOYMENT
6. ESTABLISHMENT OF TREE AND FRUIT NURSERIES

4. Mention any negative impacts that may arise from the implementation of the project?

1. WATER CONTAMINATION (CAR WASHING, WASHING CLOTHES)
2. DROWNING
3. MOSQUITO BREEDING
- 4.
- 5.
- 6.

5. How should the negative impacts be addressed?

1. FENCING
2. CREATE MANAGEMENT COMMITTEE
3. CREATE A CAR OR WASHING AREA
4. PROVISION OF MOSQUITO NETS TO THE COMMUNITY
- 5.
- 6.

Should the project be implemented? Yes  No

If not, why?

## PUBLIC CONSULTATION AND OPINION QUESTIONNAIRE

### Introduction

We are conducting an EIA- Summary Project Report for proposed Rehabilitation of Munira Dam for Small scale Irrigation Project, Gathuru Ward, Kilipiri Sub-County Nyandarua County. Part of the process involves seeking views and opinions from those close to the proposed project. Kindly fill in this questionnaire. Any information provided shall be handled with utmost confidentiality. Thank you for your assistance.

1. Are you a resident of this area? Yes  No
2. Are you aware of the proposed development? Yes  No
3. Mention any positive impacts that will result out of the project?
  - a. Source of water for irrigation to reduce drought
  - b. Source of income
  - c. Environmental Conservation
  - d. Tourist attraction
  - e. Fisheries development
  - f. \_\_\_\_\_
4. Mention any negative impacts that may arise from the implementation of the project?
  - a. Noise produced by locals and domestic animals
  - b. Increased Mosquito infestation
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
5. How should the negative impacts be addressed?
  - a. fencing the dam area
  - b. Provision of Mosquito nets to the neighbors
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
7. Should the project be implemented? Yes  No   
If not, why?  
\_\_\_\_\_  
\_\_\_\_\_