

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT  
(SUMMARY PROJECT REPORT)**



**PROPOSED CONSTRUCTION OF SARAMEK WATER PAN REHABILITATION AND  
EXPANSION AT MAKIMENY LOCATION, KONGASIS WARD IN CHEPALUNGU SUB  
COUNTY, BOMET COUNTY**

**GPS LOCATION: LATITUDE 0.8211036 S; LONGITUDE 35.1927702**



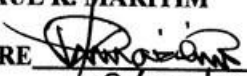
**JUNE 2021**

## CERTIFICATION

This ESIA (Summary Project Report) for the proposed Saramek water pan rehabilitation and expansion in Kongasis Ward, Chepalungu Sub-County, within Bomet County is submitted on behalf of Saramek water pan rehabilitation and expansion project management committee. To my knowledge, all information contained in this report is accurate and a true representation of all the findings relating to the project.

### LEAD EXPERT

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SIGNATURE 

DATE: 09/06/2021



DESIGNATION: EIA/EA LEAD EXPERT REG. NO. 2405

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SIGNATURE 

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**FOR AND ON BEHALF OF SARAMEK WATER PAN CONSTRUCTION SUB-  
PROJECT MANAGEMENT COMMITTEE**

## **ACKNOWLEDGEMENT**

The experts acknowledge the work of many individuals and institutions that provided the content and analysis for this Summary Project Report for the proposed Saramek water pan rehabilitation and expansion Sub-project.

We thank the World Bank Group and the Government of Kenya for considering Bomet County to be one of the implementing counties and for reviewing the report to ensure that it meets the standards. The experts are grateful to the National Project Coordinating Unit for their guidance in the Summary Project Report preparation process. Our gratitude goes more specifically to Dr. Gilbert Muthee, and Ms. Jane Ngugi and ESS-NPOEs for their role in review and their invaluable input into the draft report.

We thank the County Panel of Experts (CPOE) led by Eng. Leonard Tonui, Water Engineer, for their tireless effort in ensuring that the report captures all the issues relating to the water project.

We thank the community including VMGs who took part in the public participation and gave comments without which it would not have been possible to compile this report.

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## ABBREVIATIONS AND ACRONYMS

BOMWASCO	Bomet water and sanitation company
CESSCO	County Environment and Social Safeguards Compliance Officer
CSESMMP	Contractor-Specific Environmental and Social Management Plan
CGB	County Government of Bomet
CIDP	County Integrated Development Plan
COVID-19	Coronavirus disease of 2019
CPC	County Project Coordinator
CPCU	County Project Coordinating Unit
CPOE	County Panel of Experts
CSA	Climate Smart Agriculture
CTAC	County Technical Advisory Committee
EHS	Environmental Health and Safety
EMCA	Environmental Management and Coordination Act
ESMMP	Environmental and Social Management and Monitoring Plan
ESS	Environmental and Social Safeguards
FGD	Focused Group Discussion
GBV	Gender Based Violence
GPS	Global Positioning System
KCSAP	Kenya Climate Smart Agriculture Project
KII	Key informant interviews
LULUCF	Land Use and Land Use Change and Forestry
M <sup>3</sup>	Cubic meters
NEMA	National Environment Management Authority
NPCU	National Project Coordinating Unit
OHS	Occupational Health and Safety
OP	Operational Policies
PCR	Physical Cultural Resources
PDO	Project Development Objective
PPEs	Personal Protective Equipment
PMC	Project Management Committee
ROW	Public Right of Way
SAIC	Social Accountability and Integrity Committee
SEA	Sexual Exploitation and Abuse
SPR	Summary Project Report
STDs	Sexually transmitted diseases
TIMPs	Technologies, Innovations and Management Practices
VMG	Vulnerable and Marginalized Group
WBG	World Bank Group
WRA	Water Resource Authority
WRUA	Water Resource Users Association

## EXECUTIVE SUMMARY

The proposed Saramek water pan rehabilitation and expansion project is located on public interest land LR NO; Kericho/Makimeny/544 in Saramek village, Kiboson Sub-Location, Makimeny Location, Kongasis Ward in Chepalungu Sub-County. The GPS coordinates of the site are latitude 0.8211036 S; longitude 35.1927702. The water sub-project was initiated by Saramek community with the aim of alleviating water scarcity, reducing incidences of human and livestock diseases, increasing resilience to climate change, increasing food and nutritional security and reducing the distance walked in search of water. The proposed project is expected to benefit 6,000 farmers comprising of 2,871 males and 3,129 females. The proposed project entails excavation of the water pan; pipework for main irrigation line, cattle dip, cattle trough and communal water point; construction of two (2 No.) cattle troughs; construction of a toilet; construction of communal water points; fencing of the land; and conservation activities. The project is estimated to cost approximately KShs.18 million.

The project is funded by World Bank Group through the Kenya Climate Smart Agriculture Project (KCSAP) whose overall objective is increasing agricultural productivity through supplemental irrigation and provision of water for livestock, building resilience to climate change risks through adoption of Climate-Smart Agriculture (CSA) technologies, innovations and management practices (TIMPs) and reduction of Green House Gases emission through increased vegetation and tree cover which act as carbon sinks.

This Environmental and Social Impact Assessment (ESIA) Summary Project Report (SPR) was the result of the recommendation of the County Director of Environment (CDE), Bomet County following an environmental and social safeguards screening report. The ESIA (SPR) was conducted in compliance with the Legal Notice No. 31 on the Environmental Management and Coordination Act No. 8 of 1999 (Amendment to the Second Schedule) part 1 (c) which categorizes community water projects as low risk projects which under Legal Notice No. 32 requires that for such projects, a proponent shall submit to the Authority a summary project report of the likely environmental effects of the project. World Bank operational policies also require that ESIA be done for such projects. The ESIA (SPR) approach and methodology started with an environmental and social screening which recommended that an ESIA SPR be done. This was followed by environmental and social scoping which provided the key environmental and social components that are likely to be affected during the implementation of the project, field data collection, and desk-top review of existing documents to identify the nature of the proposed activities, public participation and finally preparation of this report.

Public and stakeholder consultations entailed people likely to be affected by the project who included women and Vulnerable and Marginalized Groups (VMGs). Physical assessment of the site and surrounding areas was also undertaken. Public participation methods used included administration of individual questionnaires, a public baraza with the beneficiary community (proponent) which was attended by 56 participants (42 males and 14 females) and focused group discussion. The key stakeholders consulted comprised of CPCU team (4), Saramek PMC representative (1), the Department of Water (1), VMG Rep (1), Lands (1), Department of Livestock (1) and NEMA (1) and the Consultant team (1) (9 males and 2 females). The Water Engineer asserted that the Engineer's design details should be strictly followed during the implementation of the project while the Surveyor was of the view that public land boundary

should be maintained after geo-referencing and its public reservation as a water pan should be safeguarded. The Livestock Department's interest was increased access to water by livestock which increases productivity, thus enhancing food security. The VMG rep wanted the project to be implemented to completion and be functional within a reasonable time to save the vulnerable and marginalized and the irrigation component be emphasized to improve farmer's food security needs.

The major positive impacts identified included increased availability and access to water supply, wealth creation, reduced distances travelled in search of water, increase in government revenue, boost in business for construction materials, creation of employment opportunities, increased value of land, technology transfer, reduced water use conflicts, spiral economic effects and improved environmental health and sanitation. The negative impacts were identified as a generation of solid wastes; impacts on air quality, loss of biodiversity, soil erosion, noise pollution, spread of STDs/HIV/AIDS, workers accidents, insecurity and project management conflicts among others.

A detailed Environmental and Social Management and Monitoring Plan (ESMMP) outlining the proposed mitigation measures for each of the identified negative impacts is presented in chapter six of this report. The cost of implementation of the ESMMP is approximately KShs. 1,684,000 which is 9.36% of the estimated total cost of the project.

This ESMMP shall be part of the contract for the contractor who will be awarded the works. The client will be required to prepare a specific contractor-ESMMP. The contractor, and the proponent shall be responsible for the implementation of the ESMMP while the County Environmental and Social Safeguards and Compliance Officer (CESSCO), the supervising Engineer and NEMA shall monitor the implementation of the ESMMP of the proposed Saramek water pan sub-project.

In conclusion, the sub-project is likely to cause both positive and negative environmental effects but the negative impacts are less significant, reversible and short term. The positive impacts outweigh the negative ones. Based on these findings, the construction and operation of the proposed Saramek Water Pan Rehabilitation and Expansion project will bring positive impacts in the project area including increased household income, improved livelihood diversification, improved food and nutrition security, reduced land and environmental degradation and social and gender mainstreaming. The negative impacts shall be mitigated as indicated in ESMMP. The project is therefore recommended for National Environmental Management Authority (NEMA) approval subject to an annual audit.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1. Background Information**

The proposed Saramek Water Pan Rehabilitation and Expansion project is a community-initiated water sub-project meant to improve the livelihood of the people, increase food security and improve the community's resilience to climate change. The proposed project is to be located on public interest land LR No. Kericho/Makimeny/544 in Saramek village, Kiboson Sub-Location, Makimeny Location, Kongasis Ward in Chepalungu Sub-County (see Annex 1: Proof of Land Ownership). The proprietor is County Council of Kipsigis, reserved for Saramek water reservoirs and administered through the Land Act 2012 and the National Land Commission Act 2012. The proposed project is expected to benefit 6,000 farmers comprising of 2,871 males and 3,129 females. The GPS coordinates of the proposed project site are latitude 0.8211036 S and longitude 35.1927702. The project is funded by World Bank through the Kenya Climate Smart Agriculture Project (KCSAP). The water pan project fits in the Project Development Objective of the project as it aims at increasing access to water by the beneficiary community which in turn will increase agricultural productivity and build resilience to climate change risks.

#### **1.2. Justification of the Project**

Saramek community faces low agricultural productivity, scarce and poor quality water, food and nutritional insecurity, vulnerability to drought and other climate risk factors, land and environmental degradation, long distances travelled and time to get water, low household income, human and livestock diseases and gender and social disparities. The proposed project will help address these challenges by improving the household income through adoption of technologies like drip irrigation and greenhouses, improvement of livelihood diversification through planting of other varieties of crops, improvement of food and nutritional security, restoration of land and environmental degradation, social and gender mainstreaming as well as inhibition of climate change risks.

#### **1.3. Justification of Conducting SPR**

This summary project report preparation was initiated out of Bomet County Director of Environment's recommendation after a systematic screening of the project (Refer to Annex 2: Screening Checklist). The screening process determined that the project is likely to cause negative effects on the environment and human well-being. This Summary Project Report (SPR) therefore helps to identify the potential risks and the measures to eliminate and/or mitigate these risks. Legal Notice No. 31 on the Environmental Management and Coordination Act No. 8 of 1999 (Amendment to the Second Schedule) part 1 (c) categorizes community water projects as low risk projects which under Legal Notice No. 32 requires that for such projects, a proponent shall submit to the Authority a summary project report of the likely environmental effects of the project. Likewise, World Bank-financed projects are governed by operational policies and procedures which are designed to ensure that the projects are economically, financially, socially and environmentally sound.

#### **1.4 Objectives of SPR**

The objective of conducting this SPR was to outline the nature of the project which should be supported by designs and plans drawn to scale and signed by an engineer; describe the location of the project including securing the proof of land ownership; determining if there is any

environmentally sensitive areas to be affected; assessing the availability of supportive environmental management infrastructure within the project site and assessing conformity of the project to land use plan or zonation plan; investigate the potential environmental and social impacts of all the project cycle phases: planning, construction, operation and decommissioning; propose mitigation measures for all potential environmental and social impacts; develop Environmental and Social Management Plan for the entire project lifecycle and present evidence of comprehensive public consultation including availing duly signed minutes of consultation meetings with project affected persons and key stakeholders, attendance lists and filled questionnaires.

#### **1.4. APPROACH AND METHODOLOGY OF SPR**

The methodology used in conducting this SPR consisted of the following:

##### **1.4.1. Environmental and social Screening**

Environmental and social screening that was carried out to determine whether environmental and social impact assessment was necessary for this project and the type of instrument to be used. This took into consideration the requirements of the Environmental Management and Coordination Act (EMCA), 1999 (Revised 2015) and specifically the amended second schedule of the Act. From the screening process, it was identified that this project will cause significant but reversible negative environmental and social impacts (Refer to Annex 2; Screening Checklist).

##### **1.4.2. Consultation meeting with the proponent**

A consultation meeting between the client and NEMA registered expert Mr. Paul K. Maritim, Reg. No. 2405 (See Annex 3: Expert Registration Licenses) was held on 07/01/2021. The purpose of the meeting was to gather information, the client to present the Terms of Reference (TOR) to the experts and for the proponent to furnish the expert with the required documents for desktop review (Refer to Annex 4: Expert Consultation with proponent Minutes and Annex 5: SPR Terms of Reference).

##### **1.4.3. Environmental and social Scoping**

The scoping focus was on the significant environmental and social components that were likely to be affected. These components were categorized into physical, biological and social-economic aspects.

##### **1.4.4. Desktop Study**

This involved review of the existing documents which included the water pan design and drawings. Documents containing climatic, demographic and hydro geological data for the project area were also relied upon.

##### **1.4.5. Field site visits**

These was meant for inspection of physical, biological and social characteristics of the site and the surrounding areas so as to determine the anticipated impacts.; evaluate the environmental setting around the proposed project site; carry out observations focused on topography, land cover, flora and fauna, climate and hydrology of the area and public amenities among others; and evaluate social, economic and cultural setting in the entire project area. Additionally, they were meant to obtain available and relevant information and data from the local public offices including Agriculture, Livestock, Water, Environment, Public Health, Social Development and

the Local Administration. They were also meant for undertaking a comprehensive consultative public participation exercise to the affected persons as well as stakeholders.

#### **1.4.6. Public participation and Stakeholder Consultation**

The purpose of public participation was to ensure public involvement, consultation and to foster project ownership. The process helped to disclose the project components to the community for them to understand what the project entailed which formed a useful component for information gathering, understanding and establishing likely environmental and social impacts of the sub-project as required by law. The beneficiary community had a chance to give their views in terms of potential benefits and adverse effects which have been incorporated in this report. The methods used during this process included public meetings, focused group discussion, key informant interviews and data collection using structured questionnaire. Detailed report is presented in chapter four of this report.

#### **1.4.7. Individual Questionnaires**

This involved the use of a list of questions filled in by the local stakeholders and the beneficiary community members in the project area. The purpose was to get their views on the project in terms of benefits, potential positive and negative impacts and possible mitigation measures and whether they felt the project should be implemented or not. Detailed report is presented in chapter four of this report.

#### **1.4.8. Stakeholder consultation**

A stakeholder meeting of all those people and institutions who have an interest in the successful design, implementation and sustainability of the project was held on 29/04/2021. The objective of the stakeholder consultation was to enable the project proponent to better respond to different stakeholders' needs. Details of stakeholders consulted is presented in chapter four of this report.

#### **1.4.9. Key informant interviews**

In order get in-depth issues concerning the proposed project, key Informant Interview was conducted. A total of 10 key informant interviews were administered; 9 government officers and 1 from the beneficiary community. The aim of the interviews was to; understand the implementation of Saramek Water Pan Rehabilitation and Expansion sub-project in the area and to collect views on the potential impacts of the project and ways of addressing the adverse effects. (See Annex 10: Key informant Interview Questionnaires).

### **1.5. Organization of the SPR**

Chapter one of the report gives introduction focusing on background, justification of the project, justification of conducting the SPR, methodology and organization of SPR, chapter two presents the nature of the project including the project description, chapter three describes the location of the project, chapter four presents the outcome of the public participation and stakeholder's consultation. , chapter five presents the anticipated impacts and mitigation measures, chapter six outlines the proposed environmental and social management and monitoring plan (ESMMP) inform of ESMMP matrix, chapter seven finally presents the conclusion of the SPR and makes the necessary recommendations pertaining to the proposed development followed by references and annexes.

## CHAPTER TWO

### NATURE OF THE PROJECT

#### 2.1 Introduction

This chapter covers the design objectives and concept of the water pan sub-project. It also details the construction activities that shall be undertaken together with the materials that shall be used in order to achieve the project objective. The chapter ends with the projects' products and the projected cost.

#### 2.2 Design objectives

##### 2.2.1 Project objectives

The objective of this project is to rehabilitate and expand Saramek water pan by bulk excavation of the water pan area, laying of pipe work for main irrigation line, the existing cattle dip, cattle trough and communal water points, construct 2 No. standard cattle troughs, construct 2 No. toilets, construct 3 No. communal water points, fence the entire PI land and plant 500 No. trees for conservation purposes.

##### 2.2.2 Design concept

The project design is based on the existing water pan which has since silted up as it was constructed over 70 years ago. The design was optimized then by considering the elevations and direction of the slopes and arriving at a point which would allow for maximum harvesting and storage of the surface water. New design considerations which have come with the proposed rehabilitation include expansion to improve the capacity of the water pan, provision of a 700 metres pipeline to facilitate adoption of small scale irrigation by the beneficiary community, provision of 2 No. standard cattle troughs (11mx0.7m), 2 No. toilets, 3 No. communal water points, fencing of the PI land and conservation aspects. (Refer to Annex 11 for the detailed drawings and designs and Annex 12 for the Bill of Quantities).

#### 2.3 Project activities

The activities of the proposed project will include site preparation, bulk excavation of the water pan area; levelling and compacting of the embankment; excavation of draw-off pipe to cattle trough, cattle dip and irrigation; excavation and stone pitching of the drainage channels; pipework for main irrigation line and supply lines to cattle dip, cattle trough and communal water points; construction of toilets; and planting of 500 No. assorted indigenous tree seedlings.

#### 2.4 Project materials and equipment

The works shall be constructed using the following materials;

- **Water pan construction**
  - **Bulk excavation** – bulldozer with blade and ripper
  - **Embankment** – bulldozer with blade and ripper for compacting and levelling
  - **Drainage channels-** stones, sand and gravel for stone pitching
  - **Excavation and laying of draw-off pipe-** pipes, unions, elbows
- **Pipework for main irrigation line, cattle dip, cattle trough, communal water points** – uPVC pipes, sluice valves, PVR pipes, elbows, tees, adaptors, GI pipes, end caps, float valve, gate valves and unions.
- **Standard cattle trough-** gravel, sand, cement
- **Toilets-** gravel. Sand, cement, steel bars, masonry blocks

- **Communal water points-** gravel. Sand, cement, steel bars, masonry blocks, GI pipes, elbows, sockets, taps
- **Tree planting** – assorted indigenous tree species

### **2.5 Project products**

The projects' products include a completed water pan, 700 m pipeline, 2 No. cattle trough, 2 No. toilets, three (3 No.) communal water points and growing trees.

### **2.6 Estimated project cost**

The project will cost approximately Eighteen million shillings (Kshs. 18 M).

## CHAPTER THREE

### THE LOCATION OF THE PROJECT

#### 3.1 Introduction

This chapter details the location of the project both administratively and in terms of GPS, proof of land ownership as furnished by the client, mention of any environmentally sensitive areas within the project area, availability of any supportive environmental management infrastructure and conformity to land use or zonation plan.

#### 3.2 Location Description

The proposed project is located at approximately 300 metres off Chebole-Makimeny tarmac road at a village called Saramek in Kiboson sub-location, Makimeny Location, Kongasis Ward in Chepalungu sub-county.

The GPS coordinates of the proposed site are 0.8211036 S and longitude 35.1927702 (see figure 2 below).



*Figure 1: The proposed project site (Blue placemark).*

#### 3.3 Proof Of Land Ownership

According to the Certificate of Official Search, the proposed project site is community land which is reserved for water supply project because of the available spring and is registered as Kericho/Makimeny/544 with nil inhibitions, cautions and restrictions (See Annex 1: Certificate of Official Search).

#### 3.4 Environmentally Sensitive Areas to be affected

There are no environmentally sensitive areas to be affected within the proximity of the sub-project site.

### **3.5 Availability of Supportive Environmental Management Infrastructure**

There are no environmental management facilities at the site .The contractor will have to put up a temporary toilet facility for use by the workers.

### **3.6 Conformity to Land Use Or Zonation Plan**

The proposed project conforms to the land use plan as the site is reserved for water reservoir as per the Certificate of Official Search document.

## CHAPTER FOUR

### PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATIONS

#### 4.1 Introduction

Public participation is a very important aspect of the SPR process because it is aimed at ensuring the sustainability of the ecosystem in which the project is to be located. The Kenya constitution 2010 highlights the need for public participation in all development processes. The importance of the exercise is reflected in Environmental Management and Coordination Act by being made part of the environmental and social impact assessment process. Public participation helps to bring out the likely environmental and social impacts and gives a chance to those who may be affected by the proposed sub-project to give their views. In compliance with this principle, the community was involved in the following stages; sub-project identification, topographical surveys, designs, and the ESIA-SPR process. This was important in ensuring that the concerns of the public were addressed early in the initial stages of sub- project planning and design.

#### 4.2 Objective of Community and Stakeholders Consultation

The main objective of the public consultation was to engage the community and key stakeholder groups to provide their inputs into the planned development and especially on those impacts that directly affect the Saramek community. The specific objectives of the public participation and stakeholder consultation in this SPR process was to:- build up confidence between the stakeholders and the proponent to minimize the risk of delays in the implementation of the Saramek water pan sub project; help the project proponent to make informed assessment of public opinion about the project and the nature and extent of opposition likely to occur during the implementation stage; bring out the contentious issues and give a chance to those who may be affected by the proposed project to give their views; have a fair interaction with affected groups and ensure them that every attempt would be made to minimize the negative impacts of the Saramek water pan sub project; and get ‘No Objection’ from the members of the public and the affected community on the implementation of the project.

#### 4.3 Categorization of Community Participants and Stakeholders

The first consultation was with the client on 07/01/2021 and was attended by CASO, CESSCO, M&E Officer, CPIA, CPC, NEMA experts and the Water Engineer. Consultations with the beneficiary community (proponent) was held on 18/01/2021 and was attended by 56 participants; 42 male and 14 females. The community members who attended the consultative barazas were from the neighbouring villages of Kiboson, Saramek, Saunet, Ndamichonik and Makimeny. The consultant was informed that the proposed site is a public land and was provided with a land search document attached in Annex 1.

The consultant identified the stakeholders to the proposed water pan project. Consultation with the stakeholders took place on 29/04/2021. Stakeholders’ consultation involved people who have an interest in the sub project either as individuals or as representatives of a group. The key stakeholders consulted comprised of CPCU team (4), Saramek PMC representative (1), the Department of Water (1), VMG Rep (1), Lands (1), Department of Livestock (1) and NEMA (1) and the Consultant team (1) (9 males and 2 females).

#### 4.4 Methodology of Public Participation and Consultation

The methods used during public participation included public meetings, focused group discussion and key informant interviews. Additional information was captured through structured interviews. Public consultation was held on 18/01/2021 at the proposed site. A Notice (Annex 6: Public Baraza Notification Poster) inviting the community to the meeting was placed at the proposed sub project the chief's Office and strategically near the proposed site. During the meeting beneficiary community were given a chance to give their views in terms of potential benefits and adverse effects which have been incorporated in this report (Refer to Annex 7: Public Baraza Minutes and attendance list). A total of 56 participants attended the baraza comprising of 42 males and 14 females.

In order get in-depth issues concerning the proposed project, key informant interview was conducted. A total of 10 key informant interviews were administered; 9 government officers and 1 from the beneficiary community. (See Annex 10: Key informant Interview Questionnaires). Additionally questionnaires were used as a tool to collect further information from members of the public. A total of 30 questionnaires were distributed out of which 20 were filled and returned (refer to Annex 8: SPR filled in individual questionnaires). Similarly, a stakeholder meeting of all those people and institutions who have an interest in the successful design, implementation and sustainability of the project was held on 29/04/2021 to get their views on the proposed project. (Refer to Annex 9: Stakeholder Minutes and the Attendance list). Plates 2 and 3 below shows the participants following the public participation proceedings.



Plate 1: CESSCO addressing the participants during the public participation baraza



Plate 2: A section of the participants following the proceedings

#### 4.5 Summary of issues raised by the community and stakeholders and the responses

The issues raised during the community and other stakeholders consultative meetings are as highlighted in Table 1 below.

No.	Issues/Concern Raised	Responses to the Issues/Concerns
1.	The pipeline extension of only 700 metres for micro-irrigation was inadequate	The length was informed by the elevations. Beyond 700 meters the water will not be able to flow by gravity.
2.	Increased generation of solid wastes	To address this, the proponent will reduce, reuse and recycle the recyclable wastes. The used cement bags will be used for potting tree seedlings while the excavated earth will be used to landscape the area in consultation with a qualified landscape architect.
3.	Noise and vibration from machines on site during construction	This will be mitigated by ensuring that the earth movers are serviced regularly, machine manufactures' manual specifications are adhered to, and ear muffs are provided to the personnel involved.
4.	Risk of spread of diseases such as HIV/AIDS and STDS by construction workers	Designing and conducting of HIV/AIDS and STDs awareness, sensitization and prevention program for the project with the entire community. The contractor will also source for unskilled labour from the local community.
5.	Influx of people in search of water for domestic use, livestock use and irrigation.	The proponent to prepare a specific influx management plan to deal with environmental and social impacts occasioned by the influx of people to the area.

Table 1: Summary of stakeholder issues

S/No.	Stakeholder	Stakeholder interest/need
1.	NEMA	Public notice of 12/3/202 on reclassification of projects should be observed; low risk, medium risks and high risks projects. Projects' screening should be done in consultation with his office.
2.	Agriculture	Want the water pan to provide water for livestock and irrigation of high value crops
3.	VMG Rep	Want the project to be implemented to completion and be functional
4.	Lands Survey	Public land boundary to be maintained after geo-referencing and safeguarding of its public reservation as a water pan
5.	County water department	The project be implemented as the planning design by following Engineer's drawings and design.
6.	Livestock department	Increased access to water by livestock which increases productivity, thus enhancing food security.
7.	Project	Irrigation component will help improve farmer's food security

S/No.	Stakeholder	Stakeholder interest/need
	management committee Rep	needs.

NB: In general, the concerns raised by the community were addressed by the relevant departmental heads and Government administrators present in the meeting. Furthermore, the engineer explained how most of the concerns are captured in the design and BQ while any new concern will be considered in the SPR and made to be part of the contract assignment.

**In conclusion, the verdict of the community to the project was ‘No objection’. This allows the client to continue with the implementation of the project after getting clearance from World Bank and approval and licensing from NEMA.**

## CHAPTER FIVE

### ANTICIPATED IMPACTS AND MITIGATION MEASURES

#### 5.1 INTRODUCTION

This chapter identifies and evaluates the possible positive and negative environmental and social impacts of the proposed water pan construction. The potential impacts predicted from the project are varied and are both positive and negative. Some impacts will occur only during certain phases of the project life cycle while some will persist all through. Impacts are also expected to be of different severity irrespective of their longevity, and as such, though some may be long term, their severity might be low and vice versa.

#### 5.2 ANTICIPATED POSITIVE ENVIRONMENTAL AND SOCIAL IMPACTS

##### **a) *Increase in the government revenue generation***

The government is poised to gain in revenue collection in form of taxes as most of the materials that will be procured for construction of the water pan auxiliaries and laying of pipelines are taxable goods.

##### **b) *Boost in business of construction materials and consumables***

There will be increase in business during construction as a lot of goods will be procured for construction of the off-take work, watering trough, communal water points, the toilets and bathrooms and laying of the pipeline which will in turn increase the turn over for the business community.

##### **c) *Creation of employment opportunities***

The entire process of water construction will provide temporal employment to consultants, skilled and unskilled labourers. The project is expected to employ about 30 people. This will increase the purchasing capacity of those employed. The significance of this impact is **high** and thus a consequential poverty reduction in the locality.

##### **d) *Enhancement of technology transfer***

During the water pan construction, there will be transfer of technology from water resource engineers, WRA and hydro-geologist and consulting agents to all those involved in the exercise. The technological skills obtained in the process are likely to be disseminated and applied to similar activities elsewhere.

This is of **high** significance.

##### **e) *Increased water supply***

Increase in the water supply represent the most important positive impacts of the project. The significance of this is **very high**

##### **f) *Increased wealth creation***

As the farmers exploit the increased farming potential due to availability of hygienically safe and clean water, there will be increased wealth and improved standard of living.

##### **g) *Savings arising from reduced price and time spent fetching water***

Time which would otherwise have been spend in walking long distances in search of water will be utilized in doing other productive activities for the society.

##### **h) *Increased value of land and property in the project area and environs***

Upon the completion of the water pan project, the resultant effect is the appreciation of land value. The quality and quantity of land will be of much significance in price determination. The land value will automatically rise as a result of the anticipated benefits that will accrue from the water pan significance is **high**.

##### **i) *Reduced Water use Conflicts***

During the water pan construction, the area will automatically ease pressure on the existing sources since the water pan will supplement them. This will reduce water use conflicts experienced amongst farmers and community at large. The significance of this impact is **high**.

**j) Spillover effects**

Temporary small-scale business opportunities will be realized during water pan construction of the associated structures. e.g. selling food and drinks to workers at the proposed site will flourish.

**k) Improved environmental health and sanitation**

The project is anticipated to increase hygiene and sanitation at the area because water used for domestic and sanitation purposes will be readily available. The water will be improved in its quality and accessibility. The treatment plant if put in place will result the significance of this impact is high.

**5.3 ANTICIPATED NEGATIVE IMPACTS AND MITIGATION MEASURES IN PREPARATORY PHASE**

**i. Failure to choose ideal location site for the various components**

Failure to carry out proper survey in identification of the most suitable sites for constructing the water pan and for laying the pipelines can negatively impact the project.

**Mitigation measure**

*Use qualified personnel in designs and survey works.*

**ii. Failure to prepare site workers**

It is important to prepare the site workers in order for them to understand what they are going to expect as they get involved in the implementation of the project. If this is not done, then the success of the project might be compromised.

**Mitigation measure**

*Development of the procedures for coaching and training site workers on environmental, social and safety measures; preparation of an emergency response plan; and acquisition of personal protection equipment (PPEs) for the site workers adapted to the nature of the planned construction works.*

**5.4 ANTICIPATED NEGATIVE IMPACTS AND MITIGATION MEASURES DURING CONSTRUCTION PHASE**

**i. Soil and Land Degradation**

The soil structure of the area will be interfered with to a moderate significance through construction activities especially the excavation phase. The soil particles will become loose and there might be a likelihood of collapse.

**Mitigation measure**

*Minimize land clearing; Rehabilitation of degraded areas; and Minimal construction work during rainy season.*

**ii. Air pollution**

Dust and smoke generated by the earth movers during site construction will significantly impact on air quality though its significance is low.

**Mitigation measure**

*Operate well-maintained machineries by the contractors; Routine maintenance program for all equipment and machineries on site; Use of good quality fuel and lubricants only; Wetting of operational sites to reduce dust raising; and avoid extraction during windy times.*

**iii. Noise pollution and vibration**

The noise levels in the area will increase during the excavation works, however, this will be for a short period of time. The significance is moderate.

***Mitigation measure***

*Maintain daytime working hours (8am to 7pm); Use well-conditioned and maintained equipment and vehicles with some noise suppression equipment (e.g. mufflers, noise baffles) intact and in working order; Ear covers for noise level control; Ensure contractual agreements with the construction contractors on noise and vibration mitigation; Implementation of best driving practices when approaching and leaving the site (speed limit of  $\leq 30$  km/hr) to minimize noise generation; and Switching off Engines of vehicles/trucks and earth-moving equipment and other machineries when not in use.*

**iv. Solid waste accumulation**

Excavated material, empty cement bags, small amounts of unused ballast and sand, waste pieces of steel bars, pieces of wastes from plastic and metal pipe fittings generated during the resizing of the pipes for fixing in the off take point, the watering trough, the communal water point and the pipework are all potential solid wastes likely to be generated during the water pan construction phase.

***Mitigation measure***

*Use top soil to do landscaping and the subsoil to compact the embankment as per the design of the water pan; prepare site specific Waste Disposal Plan; install waste disposal receptacles and signs strategically within the construction camps; provide training and do awareness creation on maintaining clean environment; provide adequate toilets and efficient sewer system within construction camps; and 3 R s (reduce, reuse, recycle).*

**v. Occupational health hazards**

Since the construction of the dam will be a workplace, there will be potential occupational and health risks.

***Mitigation measure***

*Ensure that there is a first aid kit on standby to handle potential minor injuries, ensure proper signage is in place, equip workers with PPEs.*

**5.5 ANTICIPATED NEGATIVE IMAPACTS AND MITIGATION MEASURES DURING OPERATIONAL PHASE**

**i. Wear and tear**

With time, the fence may start grumbling down because of the effects of sun on the materials used. Consequently, livestock will access and start overgrazing on the vegetation cover. This will lead to removal of the vegetation. The animals' hooves will also pull plants out by their roots. This will in turn make the embankment susceptible to erosion.

***Mitigation measure***

*Maintain the water pan structures to ensure that it is environmentally sustainable. Carry out environmental and social audits annually.*

**ii. Water pollution**

If water pollution activities such as car washing are not abated, then the water pan is likely to be affected due to pollution which might be risky to fish and small invertebrates.

***Mitigation measure***

*Ban garbage/refuse, oily wastes, fuels/waste oils onto the site grounds; Comply with water quality regulations; Avoid maintaining and cleaning of vehicles, trucks and equipment close to water bodies; provide adequate toilet facilities at the construction site; avoid indiscriminate defecation; and Implement Integrated Pest Management Plan (IPMP) where necessary.*

**iii. Unsustainable water use**

Uncontrolled water use may lead to unsustainable utilization of the water resource.

***Mitigation measure***

*Obtain water abstraction permits from WRA and use water prudently. Train communities on water conservation.*

**iv. Degraded catchment area**

The anticipated increase in the number of animals being kept by farmers and crop farming will in turn lead to degradation of the catchment area.

***Mitigation measure***

*Restore degraded parts of the catchment through catchment conservation by working together with Nyongores WRUA.*

**v. Vector-borne diseases**

The water pan may become a breeding area for mosquitoes which causes malaria. The area may also become a breeding zone for ticks as animals will be thronging the area daily for watering.

***Mitigation measure***

*Stock mosquito fish (Gambusia) which will eat the larvae before they turn into adult mosquitoes. Regularly spray or dip animals to control ticks.*

**vi. Greenhouse gas emissions**

The use of machines during the construction stage will lead to emission of Greenhouse gases such as CO<sub>2</sub> into the atmosphere.

***Mitigation measure***

*Optimize the supply chain to shorten the flow of material and equipment distribution; optimize the machines and increase operator expertise to influence emissions reduction; choose construction method and materials that will increase the efficiency of time and cost so that the waste generated will also be less; use eco-labelled materials in every construction component; optimize energy, electricity, gas & water and material utilization in every construction operational activity; Implement planned waste management through the concept of reduce, reuse and recycle; and utilize new technologies and renewable energy.*

**vii. Inequality issues on resource accessibility**

There is a potential risk that the water resource can be controlled by the powerful and the most influential members of the community with the marginalized losing out.

***Mitigation measure***

*Strengthen social relationships, by encouraging the vulnerable in the community to raise their voices and claim for better services, and act collectively with the rest. PMC to develop bylaws to govern or regulate water usage*

**viii. Demographic impacts**

When the water pan becomes operational, there will be a potential risk of influx of people from outside seeking to settle within reach of the water resource. This will lead to competition for the resource which might generate to resource conflicts and pressure on other resources. May result in increased demand on the water resources, can have grave effects on community cohesion.

***Mitigation measure***

*The proponent to prepare a specific influx management plan to deal with environmental and social impacts occasioned by influx of people to the area.*

**ix. Gender disparities**

Participation by either women or men in the construction and operational phases of the project may be skewed in favour of one sex if gender mainstreaming is not done at every stage. Also the irrigated farming may result to commercially oriented farming by men at the expense of food crop production normally undertaken by women.

***Mitigation measure***

*Consider diverse needs for water and accessibility modes to be effected for each groups; Recommendation of appropriate mitigation measures for the affected; Recommendation of group specific appropriate measures to specific impacts as per the project's specific social assessment; Improve access to safe and clean drinking water; Improve quality of water resources; and Making water affordable.*

**x. Leadership issues**

Leadership wrangles limit the achievement of the intended objective of the project.

***Mitigation measure***

*Community to democratically elect a Social Audit and Integrity Committee (SAIC) who will work on voluntary basis to resolve any conflicts that would arise during project implementation. The SAIC functions shall include and not limited to auditing the project, procurement and financial management processes, handling complaints and grievances, and advisory services to the community on pertinent issues of interest. This committee is expected to submit regular reports to the county technical team.*

**xi. Spread of livestock diseases**

The community watering point may lead to crowding of animals which may in turn lead to the spread of contagious/infectious diseases during outbreaks.

***Mitigation measure***

*Conduct regular disease surveillance and vaccination; quarantine infected animals; regular disinfection of the watering area; regular dipping of the animals is to be done by every farmer.*

**xii. Competition for land between crops and livestock**

Once the water pan becomes operational, there is potential risk for farmers to keep more livestock than can be accommodated by the available land. As demand for more land increases, there is likelihood that more land being used for crop production will be converted to pasture land. This will in turn compromise food security.

***Mitigation measure***

*Carry out land use planning and apportion land for crops and livestock and determine the carrying capacity of the available pasture for livestock; Encourage use of irrigation to maximize on food production and adopt modern farming technologies; and encourage farmers to keep high yielding animals.*

**xiii. Impacts on gender relationships at household level**

There is a potential risk that with the expected increase in household income, misunderstanding relating to financial decision making at household level may occur between men and women. There is a greater propensity not to share the responsibility equally because of culture. This will affect the relationships at household level.

***Mitigation measure***

*Carry out sensitization programmes aimed at sensitization of the community against gender discrimination and promoting gender equality.*

**xiv. Increased exposure to communicable diseases including HIV/AIDS & COVID 19**

**a. Health Impact-Increase in incidences of HIV/AIDS and STIs**

The influx of people may bring communicable diseases to the sub project area, including sexually transmitted infections (STIs), or the incoming workers may be exposed to diseases to which they have low resistance. This can result in an additional burden on local health resources. Local health and rescue facilities may also be overwhelmed and/or ill-equipped to address the work-related accidents that can occur in the construction site.

**Mitigation measures**

- Contractor to sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases to be instituted and implemented as part of the Contractor's Health and Safety Management Plan (CHSMP) to be enforced by the Supervising Engineer.
- Periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor's Staff.
- Controlled access to Contractor's Workforce Camps by outsiders.
- Contractor to provide standard quality condoms at the construction site during the construction period.

**b. Health Impact – Spread of COVID-19 amongst construction workers**

The World Health Organization declared COVID-19 a global pandemic after assessing both its alarming levels of spread and severity, and the alarming levels of inaction. Consequentially, WHO issued various guidance and measures to prevent the spread of the virus. The measures have been adopted worldwide.

During project execution (civil works), large numbers of workers will be required to assemble together in meetings, toolbox talks and even at work sites; varied number of workforce including suppliers of material and services are also expected to come in from various places in the country which may be COVID-19 hot spots; and interaction of workers with the project host community will happen as workers find accommodation close to work sites, and/or return to their homes after works. ***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 impact on local healthcare services including the project host community.

Recently, the WHO has warned that the virus is here to stay for a long time and might persist and become our new way. The Government of Kenya has also lifted some of the initial movement controls and allowed the resumption of business, with certain industry specific guidelines being enforced. The duty of care has now been transferred to individual citizens and enterprises. 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.*** These SOPs need to be communicated to all workers and enforced to the latter without fail. In addition to the requirement of the SOPs, the following mitigation measure shall also be adopted:

**Mitigation Measures against spread of COVID-19 amongst workers are:**

- (i) *The Contractors will develop SOPs for managing the spread of Covid-19 during project execution and submit them for the approval by the Supervision Engineer and the Client before mobilizing to site. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions;*

- (ii) *Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including workers and visitors;*
- (iii) *Avoid concentration of more than 15 workers at one location. Where there are two or more people gathered, maintain social distancing of at least 2 meters;*
- (iv) *All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs;*
- (v) *The project shall put in place means to support rapid testing of suspected workers for covid-19;*
- (vi) *Install handwashing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used;*
- (vii) *Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.*

**c. Social risk - Spread of COVID-19 amongst community members during consultations**

During implementation of the ESIA, various consultative activities will be undertaken. For efficient and meaningful engagement, a wide range of individual participants, groups in the local community and other stakeholders will be involved. The types of consultations to be used to pass information shall be through public baraza's, electronic means shall be used where possible and one-on-one basis meetings while observing the COVID-19 mitigation measures to ensure safety of the stakeholders involved, the community at large and the client.

To minimize the risk of spread of COVID-19 amongst community members, alternative means of consultation will be required as mitigation measures to ensure social distancing and appropriate communication measures. The mitigation measures will be supervised by a communications/ stakeholder engagement / social safeguards expert in the project proponent's team.

*Mitigation Measures against spread of COVID-19 amongst community members are.*

- i. *Electronic means of consulting stakeholders and holding meetings shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced.*
- ii. *Avoid concentrating of more than 15 community members at one location. Where two or more people are gathered, maintain social distancing of at least 2 meters.*
- iii. *The team carrying out engagements within the communities on one-on-one basis will be provided with appropriate PPE for the number of people they intend to meet.*
- iv. *Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements, and mail) when stakeholders do not have access to online channels or do not use them frequently. Allow participants to provide feedback and suggestions.*
- v. *Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration.*
- vi. *In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chart groups.*
- vii. *Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.*

**xv. Child labor and school dropout**

The proposed project may result increased opportunities for the sale of goods and services to the incoming workers can lead to child labor to produce and deliver these goods and services, which in turn can lead to enhanced school dropout.

**Mitigation measures**

- *The proponent to sensitize the community on national children welfare policies, children laws and World Bank policies on the protection of children and the importance of children being educated.*
- *The Proponent to ensure the Contractor complies with national and WB policies and rules on welfare of children.*
- *Control to ensure there is no child labour at the construction. This can be done by using Identification Cards to verify the age of the workers and casuals.*
  
- *The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.*

**xvi. Sexual Exploitation and Abuse (SEA)**

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

**Mitigation Measures** to Risk of SEA include.

- *Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).*
- *The SEA action plan will include how the project will ensure necessary steps are in place for:*
  - a) *Prevention of SEA: including Combined Oral Contraception (COC) and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;*
  - b) *Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management;*
  - c) *Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights;*
  - d) *Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.*

**xvii. Gender-based Violence (GBV) at the community level**

This impact refers to gender-based violence that women and girls may experience because of Project implementation. This includes, for example, an increase in intimate partner violence (IPV) when compensation schemes that share funds equally among husband and wife at the household level do not provide adequate sensitization and safety measures to reduce potential for increased tensions due to females receiving funds. This also refers to other GBV-related risks incurred as a result of water and sanitation projects that do not adequately consult women and adolescent girls in the community about safety and security issues related to the delivery of water and sanitation services.

**Mitigation Measures to Risk of GBV at the community level are.**

*Develop and implement provisions that ensure that gender-based violence at the community level is not triggered by the Project, including:*

- *Effective and on-going community engagement and consultation, particularly with women and girls;*
- *Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; delivery of water supplies; etc.*
- *Specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment; water services; etc.*
- *Ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation*

**xviii. Lack of technical knowledge on irrigation**

During the operational phase, technical capacity on irrigation may become a challenge to farmers which may lead to food insecurity and failure to realize the project goal.

***Mitigation measure***

*Training of farmers on irrigation technologies; involving the County Department responsible for irrigation.*

**xix. Exploitation by middlemen**

The farmers may fail to get value for their produce if marketing boards for the specific produce are not available. This may lead to middlemen taking advantage and hence exploitation of the farmers.

***Mitigation measure***

*Farmers to seek links with marketing federations for the specific crop and network with other farmers regionally and nationally.*

**5.1. ANTICIPATED IMPACTS DURING DECOMMISSIONING PHASE**

**i. Site rehabilitation**

Upon decommissioning of the proposed water pan, rehabilitation of the project site will be carried out to restore the site to its original status or to a better state than it was originally. This will include replacement of top soil and revegetation which will lead to restoration of the visual quality of the area.

**ii. Employment Opportunities**

For demolition to take place properly and in good time, several people will be involved. As a result, several employment opportunities will be created for the demolition workers during the demolition phase of the proposed Saramek water pan. The impact will be direct, temporary and minor.

**iii. Loss of jobs**

Upon decommissioning of the proposed water pan, several direct and indirect jobs which will be created as a result of the existence of the proposed Saramek water pan will be lost.

***Mitigation measure***

*Give the disenfranchised workers their exit packages and dues; Train the workers on other alternative livelihood activities; and Conduct a separate ESIA to guide the decommissioning phase.*

## **CHAPTER SIX**

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

#### **6.1 Introduction**

The ESMMP presented in table 2 below is a matrix for the identified negative impacts merged with the proposed mitigation measure for each and tied together with the specific indicators, means of verification, frequency in terms of monitoring and the cost. The ESMMP shall be modified at the first environmental and social audit to accommodate any unforeseen impacts.

The importance of monitoring is to ensure that the ESMMP has been effectively implemented, information on the progress provided and final results of mitigation established.

Environmental and social monitoring system starts from the preparation phase of the sub project and will continue through to the mitigation phase in order to abate the negative impacts of the project and observe the effectiveness of mitigation measures.

The monitoring system will provide technical assistance and supervision when needed, early detection of conditions related to mitigation measures, follow up on mitigation results, and provides information of the project progress.

The estimated total cost of implementing the ESMMP is Kshs. 1,684,000/- which is approximately 9.36% of the total project cost.

## 6.2 Environmental and Social Management and Monitoring Plan Matrix

Table 2 below gives the environmental and social management and monitoring plan matrix for the proposed project.

Table 2: Environmental and Social Management and Monitoring Plan

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
<b>Preparatory phase</b>						
Failure to choose ideal locations for the various components	Use qualified personnel while carrying out the surveys and designs. The designs should be approved by a registered engineer.	Survey and design work	Proponent	Approved drawings and designs	During the preparatory phase of the project	20,000
Failure to prepare site workers	The contractor should train site workers before the commencement of the construction work.	No of workers trained	Contractor	Training reports, list of attendance	After the award of contract	15,000
<b>Construction Phase</b>						
Soil and Land Degradation	Minimize land clearing; Rehabilitation of degraded areas; and Minimal construction work during rainy season	No. of soil conservation measurements in place Area of degraded land rehabilitated Acreage of land cleared of vegetation	Contractor, Community	Measurement records of soil erosion	Weekly	50,000
Air pollution	Operate well-maintained machineries by the contractors; Routine maintenance program for all equipment and machineries on site; Use of good quality fuel and lubricants only; Wetting of operational sites to reduce dust raising; and avoid extraction during windy times	Frequency of machine/ vehicle servicing Frequency of surface watering	Contractor for civil works	Records of machinery servicing	Daily during construction phase	0
Noise pollution and vibration	Maintain daytime working hours (8am to 7pm); Use well-conditioned and maintained equipment and vehicles with some noise suppression equipment (e.g. mufflers, noise baffles) intact and in working order; Ear covers for noise level control; Ensure contractual agreements with the construction contractors on noise and vibration mitigation;	Measurements of noise levels Hours of machine/ vehicle operations No of machinery with noise control devices	Contractor	Decibels of noise recorded	Daily	10,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
	Implementation of best driving practices when approaching and leaving the site (speed limit of $\leq 30$ km/hr) to minimize noise generation; and Switching off Engines of vehicles/trucks and earth-moving equipment and other machineries when not in use.	Speed of vehicles approaching/ leaving the site				
Ecosystem disruption	Avoid or minimize disturbance on sensitive habitat areas; Regular inspection and monitoring on identified or suspected sensitive habitats (swamps/ wetlands), prior to start and during work; and Species assessment.	Sensitive habitats disturbed	Contractor	No. of sensitive habitats disturbed	Once during construction phase	0
Solid waste accumulation	Use top soil to do landscaping and the subsoil to compact the embankment as per the design of the water pan; prepare site specific Waste Disposal Plan; install waste disposal receptacles and signs strategically within the construction camps; provide training and do awareness creation on maintaining clean environment; provide adequate toilets and efficient sewer system within construction camps; and 3 R s (reduce, reuse, recycle).	Quantities of solid wastes generated No of waste receptacles installed No of toilets provided No of licensed waste handlers engaged Frequency of waste collection and disposal by the handlers	Contractor	Visual inspection	During construction phase	100,000
Occupational health hazards	Ensure that there is a first aid kit on standby to handle potential minor injuries, ensure proper signage is in place, equip workers with PPEs	No. of cases of occupational health hazards reported No of first aid kits procured No of PPEs procured/ Proportion of workers with requisite PPEs	Contractor	Incident and Accident registers	Daily	50,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
<b>Operational phase</b>						
Tear and wear	Maintain the water pan to ensure that it is environmentally sustainable. Carry out environmental and social audits annually.	No. of audits conducted	Proponent	Annual environmental and social audit reports	Yearly	500,000
Water pollution	Ban garbage/refuse, oily wastes, fuels/waste oils onto the site grounds; Comply with water quality regulations; Avoid maintaining and cleaning of vehicles, trucks and equipment close to water bodies; provide adequate toilet facilities at the construction site; avoid indiscriminate defecation; and Implement Integrated Pest Management Plan (IPMP) where necessary.	No. of sensitization meetings conducted on water pollution control and sanitation No of toilet facilities provided No of cattle troughs provided, etc.	Proponent	Sensitization meeting reports	Quarterly	100,000
Unsustainable water use	Obtain water abstraction permits from WRA and use water prudently. Train communities on water conservation	No. of sensitization and trainings held	Community Proponent	Sensitization and training reports	Quarterly	10,000
Degraded catchment area	Restore degraded parts of the catchment through catchment conservation by working together with Nyongores WRUA.	No. of trees planted	Proponent	Environment reports	Quarterly	50,000
Vector borne diseases	Stock mosquito fish (Gambusia) which will eat the larvae before they turn into adult mosquitoes. Regularly spray or dip animals to control ticks.	No. of vector-bone diseases reported Proportion of beneficiaries using treated mosquito nets	Public Health Officer	Public health reports	Weekly	50,000
Greenhouse gas emission	Optimize the supply chain to shorten the flow of material and equipment distribution; optimize the machines and increase operator expertise to influence emissions reduction; choose construction method and materials that will increase the efficiency of time and cost so that the waste	No. of machines operating optimally.	Contractor	Mechanical reports	Weekly	50,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
	generated will also be less; use eco-labelled materials in every construction component; optimize energy, electricity, gas & water and material utilization in every construction operational activity; Implement planned waste management through the concept of reduce, reuse and recycle; and utilize new technologies and renewable energy.					
Inequality issues on resource accessibility	Strengthen social relationships, by encouraging the vulnerable in the community to raise their voices and claim for better services, and act collectively with the rest.	No. of marginalization cases reported	Proponent Contractor	Reports of cases	Quarterly	20,000
Demographic impacts	The proponent to prepare a specific influx management plan to deal with environmental and social impacts occasioned by influx of people to the area.	No. of immigrants into the project area	Proponent	Reports	Quarterly	15,000
Gender disparities	Consider diverse needs for water and accessibility modes to be effected for each groups; Recommendation of appropriate mitigation measures for the affected; Recommendation of group specific appropriate measures to specific impacts as per the project's specific social assessment; Improve access to safe and clean drinking water; Improve quality of water resources; and Making water affordable.	No of cases of persons denied access to the water resource based on gender	M&E Officer	Reports of cases	Twice a year	30,000
Leadership issues	Community to democratically elect a Social Audit and Integrity Committee (SAIC) who will work on voluntary basis to resolve any conflicts that would arise during project implementation. The SAIC functions shall include and not limited to auditing the project, procurement and financial management processes, handling complaints and grievances, and advisory services to the community on pertinent issues of interest. This committee is expected to submit regular reports to the county technical team.	No. of leadership conflicts registered  No of leaders trained on leadership, project management, book keeping, conflict management and resolution, etc.	Proponent	Grievances register	Monthly	10,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
Spread of livestock diseases	Conduct regular disease surveillance and vaccination; quarantine infected animals; regular disinfection of the watering area; regular dipping of the animals is to be done by every farmer.	No of disease outbreaks reported No of livestock vaccinations conducted Frequency of livestock disease surveillance	Veterinary officer	Incidences reports	Weekly	20,000
Competition for land between crops and livestock	Carry out land use planning and apportion land for crops and livestock and determine the carrying capacity of the available pasture for livestock; Encourage use of irrigation to maximize on food production and adopt modern farming technologies; and encourage farmers to keep high yielding animals.	No of livestock kept per unit area  Acreage under crops No of farmers practicing irrigation Proportion of farmers adopting improved farming technologies	Proponent CPCU	Reports of animals in poor body conditions  Reports of low crop yields in the project area	Twice a year	15,000
Impacts on gender relationship at household level	Carry out sensitization programmes aimed at sensitization of the community against gender discrimination and promoting gender equality.	No of gender related conflicts at household level reported No of sensitizations on gender/ SEA/ GBV conducted	Proponent CPCU	Reports of negative impacts on gender relationship at household level reported.	Monthly	14,000
Spread of COVID-19 amongst workers	The Contractor will develop a SOPs for managing the spread of Covid-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilization. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives, and site-specific project	Availability of SOP(s), Training material, PPE, sanitizing facilities, installed handwashing equipment etc.	All the Project components  Supervising Eng. & Contractor(s)	SOPs Project assessment reports Purchase orders/receipts Photos	4 months	50,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
	<p>conditions.</p> <ul style="list-style-type: none"> <li>• Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including</li> <li>• Avoid concentrating of more than 15 workers at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters. All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs.</li> <li>• The project shall put in place means to support rapid testing of suspected workers for covid-19.</li> <li>• Install handwashing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used.</li> <li>• Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, doorknobs, handrails etc.</li> </ul>					
Spread of COVID-19 amongst community members during consultations	<ul style="list-style-type: none"> <li>• Electronic means of consulting stakeholders and, holding meetings, whenever possible, shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced.</li> <li>• Avoid concentrating of more than 15 community members at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters</li> <li>• The team carrying out engagements within the communities on one-on-one basis will be</li> </ul>	<p>Availability of SOP(s), Training material, PPE, sanitizing facilities etc. No. of participants registered online. Attendance registers of all meetings held Evidence of use of electronic media</p>	<p>All the Project components  Supervising Eng. &amp; Contractor(s)  Communications/Stakeholder Engagement Expert.</p>	<p>SOPs, training manuals Attendance registers Project assessment reports</p>	1 year	100,000

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
	<p>provided with appropriate PPE for the number of people they intend to meet.</p> <ul style="list-style-type: none"> <li>Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements, and mail) when stakeholders do not have access to online channels or do not use them frequently. Ensure to provide and allow participants to provide feedback and suggestions.</li> <li>Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration.</li> <li>In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp &amp; Chat groups.</li> <li>Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.</li> </ul>	<p>for information dissemination/engagement e.g. printed electronic mails, addresses of video links created etc.</p>				
Child labor and school dropout	<ul style="list-style-type: none"> <li>Sensitize the community and selected contractor on national children welfare policies, children laws and World Bank policies on the protection of children.</li> <li>Contractor complies with national and WB policies and rules on welfare of children.</li> <li>Control to ensure there is no child labour at the construction.</li> </ul>	<ul style="list-style-type: none"> <li>No. of sensitizations</li> <li>Register of all workers employed</li> </ul> <p>Signed agreement with contractor to adhere with child labour laws.</p>	CPCU/ contractor	Signed agreements attendance registers copies of ID. Card No. of workers	Construction phase	<b>10,000</b>
Sexual Exploitation and Abuse by project workers against community members	<ul style="list-style-type: none"> <li>Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in</li> </ul>	<ul style="list-style-type: none"> <li>SEA Action Plan</li> <li>Code of Conduct</li> </ul>	Supervision Consultant  GBV Expert	SEA action plan Attendance registers	1 year	<b>150,000</b>

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
	<p>Investment Project Financing involving Major Civil Works (Sept 2018).</p> <ul style="list-style-type: none"> <li>• The SEA action plan will include how the project will ensure necessary steps are in place for: Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials.</li> <li>• Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation, and disciplinary procedures at the project level, including confidential data management.</li> <li>• Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights;</li> <li>• Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of staff trainings</li> <li>• SEA FP</li> <li>• Community Liaison trained in PSEA</li> <li>• IEC materials for workers' sites and community</li> <li>• Discrete SEA reporting pathway</li> <li>• Relevant policies, e.g. investigations and discipline and whistleblower protection</li> </ul> <p>Monthly minutes from SEA coordination meetings</p>				
Gender-based Violence (GBV) at the community	<ul style="list-style-type: none"> <li>• The contractor will implement provisions that ensure that GBV at the community level is not</li> </ul>	<ul style="list-style-type: none"> <li>• Number of SEA action</li> </ul>	Supervision Consultant	GBV plans Attendance	1 year	<b>100,000</b>

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time frame/frequency	Estimated Cost (KShs.)
level	<p>triggered by the Project, including:</p> <ul style="list-style-type: none"> <li>• Effective and on-going community engagement and consultation, particularly with women and girls;</li> <li>• Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; delivery of water supplies; etc.</li> <li>• Specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment; water services; etc.</li> <li>• Ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• plans prepared</li> <li>• Code of conduct prepared</li> <li>• Number of staff trainings on SEA held.</li> <li>• -Number of PSEA community liaison trainings carried out</li> <li>• Number of IEC materials available</li> </ul>	GBV Expert Local NGO/CBO	registers GBV action plans		
Lack of technical knowledge on irrigation	Training of farmers on irrigation technologies Involving the County Department responsible for irrigation	No of irrigation bids initiated	Reports	During the operation phase of the project	Irrigation Officer	30,000
Exploitation by middlemen	Farmers to seek links with marketing federations for the specific crop and network with other farmers regionally and nationally.	No. of marketing Boards accessible to farmers	Proponent	Marketing reports	During the operation phase	30,000
<b>Decommissioning phase</b>						
Noise pollution and excessive vibration	Maintain daytime working hours (8am to 7pm); Use well-conditioned and maintained equipment and vehicles with some noise suppression equipment (e.g. mufflers, noise baffles); use ear covers for noise level control; Enter into contractual agreements with the construction contractors on noise and vibration mitigation; Implement best driving practices when approaching and leaving the site (speed limit of ≤30 km/hr) to	Decibels of noise emitted	Contractor	Noise meter records	Throughout construction period	15,000

<b>Environmental impact</b>	<b>Proposed Mitigation Measures</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Means of Verification</b>	<b>Time frame/frequency</b>	<b>Estimated Cost (KShs.)</b>
	minimize noise generation; and switch off Engines of vehicles/trucks and earth-moving equipment and other machineries when not in use.					
Waste pollution	Prepare site specific Waste Disposal Plan; install waste disposal receptacles and signs strategically within the construction camp; provide of training and create awareness on clean environment; provide adequate toilets and efficient sewer system within construction camp; and use 3 R s (reduce, reuse, recycle) strategy.	Waste receptacles; Toilets and bathrooms constructed	Proponent	No. of waste receptacles installed; No. of toilets and bathrooms constructed; Quantities of wastes reused and recycled.	Throughout construction and operational phase	50,000
Loss of jobs	Give the disenfranchised workers their exit packages and dues. Train the workers on other alternative livelihood activities Conduct a separate ESIA to guide the decommissioning phase	People rendered jobless Workers trained on other IGAs	Contractor	No. of people rendered jobless Training reports on alternative IGAs	Once	20,000
<b>TOTAL</b>						<b><u>1,684,000</u></b>

### 6.3 ESMMP MONITORING AND EVALUATION

The environmental and social issues included within the mitigation measures will be monitored and supervised by the project beneficiaries, chosen contractor, engineering team and the KCSAP County Environment and Social Safeguards Compliance Officer (CESSCO) and the Project's Monitoring and Evaluation Officer.

The KCSAP Project Coordinating Unit in Bomet will comply with the provisions of any other environmental and safeguard requirement provided by legislation and conditions of the main funding agency (WBG).

### 6.4 AUDITS AND REVIEWS

Annual environmental, social, health and safety audits and reviews as required by NEMA will be conducted to assess the performance of the environmental, health and safety policies and operational procedures implemented.

### 6.5 WATER QUALITY MONITORING

Periodic quality assessment of drinking water sources is necessary to guarantee the quality and security of water supply from the spring to the people. The proponent will therefore take the responsibility of assessing the drinking water quality of the spring water to ensure that it meets the standards set out in the First Schedule of Environmental Management and Coordination (Water Quality) Regulations, 2006.

### 6.6 KEY ROLES AND RESPONSIBILITIES IN M & E

#### 6.6.1 The Contractor

The Contractor will have the overall responsibility of adherence to the ESMMP. He/she will work closely with the KCSAP CESSCO to identify necessary improvement to the implementation of the ESMMP.

#### 6.6.2 The Supervising Engineer

The works Supervising Engineer will ensure adherence to the mitigation measures identified in the ESMMP within the respective areas. He/she will be responsible for the day to day execution of the mitigation measures described under this ESMMP during the construction phase. The Supervising Engineer will be required to produce monthly reports during the construction period of the water pan.

This will include summary of activities and mitigation measures undertaken during the reporting period, any deviation of non-compliance to the ESMMP, unexpected occurrence that could have occurred affecting the project implementation during the period, environmental monitoring records and any other issue of concern.

#### 6.6.3 The CESSCO

This will have the responsibility to support the Contractor in meeting the planning requirements, training and the implementation of monitoring requirements.

The CPCU/CESSCO will also undertake the planning and coordinating with NPCU on GBV/SEA issues with subject specialist or consultant for meeting the measures proposed in the ESMMP. The CESSCO is expected to carry out quarterly reporting of the sub project together with the M & E officer. These quarterly reports will form the basis for effective auditing and review of the ESMMP of the proposed sub project.

## CHAPTER SEVEN

### CONCLUSION AND RECOMMENDATION

#### 7.1 Conclusion

From the study conducted, the implementation of the water pan project has the potential to generate both positive and negative environmental and social impacts. However, the positive impacts outweigh the negative ones. The negative ones are reversible and mitigation measures have been provided in the ESMMP matrix which also assigns responsibilities, indicators, time frame and the cost of implementation. Any chance find will be dealt according to the procedure provided in Annex 13 (Chance Find Procedure).

#### 7.2 Recommendation

It is thus recommended that the proposed project proponent be allowed to go ahead provided the outlined mitigation measures are implemented as outlined in the ESMMP. The ESMMP should be shared with the Contractor who should translate this ESMMP into Contractor-Specific Environmental and Social Management Plan (CESMMP). The contractor will also be required to employ a qualified Environmental and Social Safeguards specialist as well as Safety and Health officer to oversee implementation of the ESMMP.

On approval, it is recommended that the proponent should implement the proposed project based on the proposed plans and if alterations are necessary, advice should be sought from the CESSCO and supervising engineer; share the ESMMP with the Contractor and other responsible stakeholders and that the ESMMP form part and parcel of the Contractor's contract to ensure that their obligations as outlined in the ESMMP are executed; undertake annual environmental audit pursuant to the provisions of EMCA; and in consultation with other related parties ensure compliance with the water quality standards as outlined in EMCA water quality regulations 2006 as per the proposed water use. In this regard the proponent should ensure that water testing for the necessary parameters is undertaken regularly. In case of any find of any material of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic or other cultural significance, the chance find procedure in annex 13 will be applied.

## References

- 1) Government of Kenya, 1999; National Policy on Water Resources Management and Development, Sessional Paper No 1 of 1999; Government Printer, Nairobi.
- 2) Government of Kenya.1994; National Environmental Action Plan, Government Printer, Nairobi, Kenya.
- 3) Governments of Kenya. 2003; The Environmental (Impact Assessment and Audits) Regulations - Legislative. Supplements No. 31 of 13th June 2003; Government Printer, Nairobi, Kenya.
- 4) Governments of Kenya.2002; Policy Paper on Environment and Development.
- 5) Kenya gazette supplement Acts Land Planning Act (Cap. 303). Government Printer, Nairobi.
- 6) Kenya gazette supplement Acts Public Health Act (CAP. 242). Government Printer, Nairobi.
- 7) Kenya gazette supplement number 68. Environmental Management and Co- ordination (Water Quality) Regulations 2006. Government Printer, Nairobi.
- 8) Kenya gazette supplement number 69. Environmental Management and Co- ordination (Waste Management) Regulations 2006; Government Printer, Nairobi.
- 9) Kenya gazette supplement Acts Building Code 2000. Government Printer, Nairobi.
- 10) Kenya gazette supplement Acts Local Authority Act (Cap. 265). Government Printer, Nairobi.
- 11) Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003; Government Printer, Nairobi.
- 12) Kenya gazette supplement Acts 2000; Environmental Management and Coordination Act Number 8 of 1999; Government Printer, Nairobi.
- 13) OP 4.00: Table of Operational Policies. [www.worldbank.org](http://www.worldbank.org)
- 14) The constitution of Kenya, 2010; Government printer: Nairobi.
- 15) World Bank. 2005. OP 4.00. Table A1: Environmental and Social Safeguard Policies – Policy Objectives and Operational Principles.
- 16) Lindqvist A.K. (2005). Water from ponds, pans and dams: A manual on planning, design, construction and Maintenance. Technical handbook No. 32. Nairobi, Kenya: Regional Land Management Unit (RELMA)/World Agroforestry Centre Eastern and Central Africa Regional Programme. [www.worldagroforestry.org/.../MN13546.pdf](http://www.worldagroforestry.org/.../MN13546.pdf)
- 17) MWI 2015. Practice Manual for Small Dams, Pans and Other Water Conservation Structures in Kenya. State Department for Water, Ministry of Water and Irrigation, Government of Kenya.

ANNEXES

ANNEX 1. PROOF OF LAND OWNERSHIP

R.L. 27

09 OCT 2020

REPUBLIC OF KENYA

THE LAND CONTROL ACT

No. 3 of 2012 (Section 108)

(Cap. 300) (Repealed)

CERTIFICATE OF OFFICIAL SEARCH

TITLE NO. PERMANENT/242 SEARCH NO. 133/10/2020

On the 05th day of OCTOBER 2020 the following

Were the subsisting entries on the register of the above-mentioned title:

PART A- PROPERTY SECTION (EASEMENT, ETC)

Nature of Title: ARROWIE (RESERVED FOR STRANEX CT)

Approximate area: 16.276 (FOUR DECIMAL TWO HECTARES)

PART B- PROPRIETORSHIP SECTION

Name and Address of the Proprietor:--

11/ 19.6.79 COUNCIL OF KIPSIS

Inhibitions, Cautions and Restriction:--

PART C- ENCUMBRANCES SECTION (LEASE, CHARGE, ETC)

The following applications are pending:

The certified copies requested are attached.

The minimum fee KSh. 500 (Five hundred only)

Date this 05th day of OCTOBER 2020

*[Signature]*  
Land Registrar

To: THE LAND REGISTRAR,

Romeo District Land Registry,

P.O. Box: 172

Romeo


KSh. .... attached hereto.

Signature of the applicant or his advocate

TO BE SUBMITTED IN DUPLICATE



ANNEX 2. Screening Checklist



**KCSAP**  
Kenya Climate-Smart Agriculture Project

**ENVIRONMENTAL AND SOCIAL SCREENING CHECK LIST**  
(Sub-projects screening process by benefitting communities/Agencies)

**Section A: Background information**

Name of County	Bomet	
Name of CPCU/Monitoring Officer/Researcher	Stephen Mutai CESS CO	
Sub-project location	Makimony, Kongoro ward, Chepalungu Sub-county	
Name of CBO/Institution	PME Saramek	
Postal Address:		
Contact Person	John Kim	Cell phone 0720 481 254
Sub-project name	Saramek Water Pan rehabilitation and expansion	
Estimated cost (KShs.)		
Approximate size of land area available for the sub-project		
Objectives of the sub project	damazation, desilting, protection (fencing), conserve, next tap, disperse (ingate) for water from the pan for daily domestic animal and agricultural use by the nearby community members.	
Activities/enterprises undertaken	Several farming activities	
How was the sub-project chosen?	through P.C.D	
Expected sub project duration	1 year	

**Section B: Environmental Issues**

Will the sub-project:	Yes	No
Create a risk of increased soil erosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create a risk of increased deforestation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create a risk of increasing any other soil degradation soil degradation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect soil salinity and alkalinity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Divert the water resource from its natural course/location?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cause pollution of aquatic ecosystems by sedimentation and agro-chemicals, oil spillage, effluents, etc.?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Introduce exotic plants or animals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Involve drainage of wetlands or other permanently flooded areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cause poor water drainage and increase the risk of water-related diseases such as malaria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reduce the quantity of water for the downstream users?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Result in the lowering of groundwater level or depletion of groundwater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce various types of livestock production?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect any watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Focus on Biomass/Bio-fuel energy generation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

**Section C: Socio-economic Issues**

Will the sub-project:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Displace people from their current settlement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Interfere with the normal health and safety of the worker/employee?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce the employment opportunities for the surrounding communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce settlement (no further area allocated to settlements)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce income for the local communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Increase insecurity due to introduction of the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Increase exposure of the community to HIV/AIDS?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Induce conflict?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have machinery and/or equipment installed for value addition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Introduce new practices and habits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lead to child delinquency (school drop-outs, child abuse, child labour, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lead to gender disparity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lead to poor diets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lead to social evils (drug abuse, excessive alcohol consumption, crime, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

**Section D: Natural Habitats**

Will the sub-project:			
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Adversely affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Affect the indigenous biodiversity (Flora and fauna)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Affect the aesthetic quality of the landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Reduce people's access to the pasture, water, public services or other resources that they depend on?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Increase human-wildlife conflicts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Will the sub-project:			
Involve the use of pesticides or other agricultural chemicals, or increase existing use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cause contamination of watercourses by chemicals and pesticides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cause contamination of soil by agrochemicals and pesticides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Experience effluent and/or emissions discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Export produce? Involve annual inspections of the producers and unannounced inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Require scheduled chemical applications?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Require chemical application even to areas distant away from the focus?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Use irrigation system in its implementation?	<input type="checkbox"/>	<input type="checkbox"/>	
<i>If the answers to any of the above is 'yes', please include an EMP with sub-project application.</i>			

**Section E: Pesticides and Agricultural Chemicals**

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

**Pest Control practices**

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

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, name them:	Name of pesticide	Name of pest, disease, weed controlled	Number of times applied/ season	When did you apply (growth stage or month) Quantity purchased

If No, WHY? Weeds to be controlled by weeding manually

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 .....

Operator name Yes..... No .....

If No, WHY?

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

We use pesticides at regular intervals throughout the season (calendar)

We use pesticides when we see pests in the field (control)

(iii) We use pesticides after field sampling and finding a certain number of pests or a certain level of damage (scouting)

(iv) Told by someone to apply (specify who) \_\_\_\_\_

(v) Other (specify) \_\_\_\_\_

d) Do you use a knapsack sprayer? Yes \_\_\_ No \_\_\_

If yes,

(i) Do you own it Yes \_\_\_ No \_\_\_

(ii) Do you rent it Yes \_\_\_ No \_\_\_

(iii) Do you borrow it Yes \_\_\_ No \_\_\_

e) From your experience, are there any negative/harmful effects of using pesticides?

Yes..... No .....

If yes, list the negative effects:

.....

(iii)..... N/A

.....

(v).....

*Is there anything else that you want us to know about your crop production?*

-----  
 -----  
 -----  
 -----  
 -----

*If the answer to the above is 'yes', please consult the IPM that has been prepared for the project.* N/A

**Section F: Vulnerable and Marginalized Groups meeting requirements for OP 4.10**

Are there:	Yes	NO
People who meet requirements for OP 4.10 living within the boundaries of, or near the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Members of these VMGs in the area who could benefit from the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VMGs livelihoods to be affected by the sub project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*If the answer to any of the above is 'yes', please consult the VMGF that has been prepared for the project.*

**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 development?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Displace individuals, families or businesses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in temporary or permanent loss of crops, fruit trees and pasture land?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adversely affect small communal cultural property such as funeral and burial sites, or sacred groves?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in involuntary restriction of access by people to legally designated parks and protected areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Be on monoculture cropping?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*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.* N/A

**Section H: Proposed action**

(i) Summarize the above:	(ii) Guidance
<input type="checkbox"/> All the above answers are 'No' <input checked="" 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> </ul> <p>If there is at least one 'Yes', please describe your recommended course of action (see below).</p>

**Recommended Course of Action**

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

- CPCUs 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 CPCUs regarding sub-project specific EIA(s) and also in the following area(s)
- All sub-project applications/proposals MUST include a completed ESMF checklist. The KCSAP- CPCU and CDE will review the sub-project applications/proposals and the CDEs will sign off;
- The proposals will then be submitted to KCSAP PIU for clearance for implementation by communities in the proposed subprojects.

**Expert Advice**

- The National Government through the Department of Monuments and Sites of the National Museums of Kenya can assist in identifying and, mapping of monuments and archaeological sites; and
- Sub-project specific ELAs, if recommended, must be carried out by experts registered with NEMA and be followed by monitoring and review. During the process of conducting an EIA the proponent shall seek views of persons who may be affected by the sub-project. The WB policy set out in OP 4.01 requires consultation of sub-project affected groups and disclosure of EIA's conclusions. In seeking views of the public after the approval of the sub-project, the proponent shall avail the draft EIA report at a public place accessible to project-affected groups and local NGOs/CSOs.

EIA/Audit Expert, Paul K. Maritim, Reg. No. 2405. *[Signature]*

Completed by:

Name: John Kirui

Position / Community: Chairperson, Saramek Water Pm PMC.

04/01/2021

Date:

Field Appraisal Officer (CDE): SAMUEL OBIENGO

Signature: *[Handwritten Signature]*



Date: 04/01/2021

Note:

Project category	Characteristics
	Full and extensive EIA needed- irreversible environmental impacts; impacts not easy to pick or isolate and mitigation cost expensive; EMP design not easily done; Must have the EIA done and future annual EAs instituted
	Site specific environmental impacts envisaged; mitigation measures easy to pick, not costly and EMP design readily done; need an EIA and future EAs
	Have minimal or occasionally NO adverse environmental impacts; exempted from further environmental processes save environmental audits

Under legal Notice No. 31 of <sup>April 2019</sup> Environmental Management and Coordination Act No. 8 of 1999 (Amendment to the Second Schedule) part 1(c) community water projects are categorised as low risk which under legal Notice No. 32, a summary project Report is required to be submitted to the Authority.

Paul K. Maritim, EIA/EA Lead Expert, Reg No. 2405,

*[Handwritten Signature]*



ANNEX 3. EXPERT'S REGISTRATION LICENSES

FORM 7 (r.15(2))

  
**nema**  
mazingira yetu | shahi 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/14562  
Application Reference No: NEMA/EIA/EL/18839

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M/S **PAUL K. MARITIM**  
(individual or firm) of address  
P.O. Box 437-20400, BOMET

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**  
registration number **2405**

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

Issued Date: **3/24/2021** Expiry Date: **12/31/2021**

Signature.....  


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

P.T.O.

  
ISO 9001: 2015 Certified

## ANNEX 4. Expert Consultation with Proponent Minutes

### **MINUTES OF CONSULTATION MEETING HELD BETWEEN THE EIA EXPERT AND THE PROPONENT ON 07/01/2021 AT TWIGGS ANNEX, BOMET COUNTY FOR THE PROPOSED SARAMEK AND CHARIRIK WATER PANS**

#### Members present

1. Mr. Erick Ngenoh	CASO
2. Mr. Stephen Mutai	CESSCO
3. Mr. Nicholas Ruto	M&E
4. Mrs Hilda Chepkwony	CPIA
5. Mr. Julius Kenduiywa	CPC
6. Mr. Paul K. Maritim	Lead Expert
7. Eng. Beatrice Ruto	Director Water

#### Preliminaries

The meeting begun at 10:00 am with prayer from Mrs Hilda Chepkwony and was chaired by the CPC. The chair welcomed members to the meeting and urged them to participate openly.

#### **AGENDA**

1. Required documentations
2. Site visit and public participation
3. TOR

#### **MIN1/07/01/2021: REQUIRED DOCUMENTATIONS**

The ESIA expert Mr. Paul K. Maritim Reg. No. 2405 took members through a brief of what the SPR process entails. He informed the meeting that the process begins with screening which was done by NEMA which recommended for SPR. The second process is scoping which entails determining the components of the environment which are likely to be impacted by the project. He pointed out the key areas to be covered ranging from background information, justification for the project, SPR objectives, SPR methodology, nature of the project, project location, public participation, project's potential impacts and mitigation measures, Environmental and Social Management and Monitoring Plan among others. Scoping process is followed by the actual SPR which involves desktop review, interviews, field visits, public participation, and reporting. He also pointed out the key sources of information that he will require. Among the documents needed as information sources were: KCSAP PICD Reports, sub project proposal, KCSAP project appraisal documents, CIDP reports among

others. Documents needed for attachment include: land ownership, designs and BQs. The KCSAP team assured the experts that the documents will be availed.

**MIN2/07/01/2021: SITE VISIT AND PUBLIC PARTICIPATION**

The lead expert informed members that field visit and public participation is key in the SPR process. The process is important to enable the community to understand the project and also to participate in the development process in terms of airing their views. It is also an element for information sourcing. Site meetings were planned to be undertaken on 18/01/2021. The ESIA team requested the CPCU to do publicity for the public participation meeting. The team also guided in the participants' categorization which was to comprise of the local administration, technical departments and partners working in the region. Emphasis was given to the beneficiary community and the sub-project management committee.

**MIN3/07/01/2021: TERMS OF REFERENCE (TOR)**

The proponent and the ESIA experts discussed the terms of reference and agreed on the following;

- i. To provide background information of the project area;
- ii. Document SPR methodology;
- iii. Describe the nature of the project;
- iv. Describe the location of the project;
- v. Undertake a comprehensive public participation;
- vi. Identify and analyze the potential environmental impacts of the sub-project;
- vii. Propose mitigation measures for the significant negative impacts of the sub-project on the environment;
- viii. Develop a Social and Environmental Management and Monitoring Plan; and produce an Environmental and Social Impact Assessment report and submit it to NEMA.

The meeting ended at 12:30 pm with a prayer from Mr. Nicholas Ruto.

Chairperson *Julius Keria* Signature ..... Date *7/1/2021*.....  
Secretary *Stephen Mutua* Signature ..... Date *7/1/2021*.....

## ANNEX 5.            **SPR Terms of Reference**

### SUMMARY PROJECT REPORT TERMS OF REFERENCE

The following was the agreed Terms of Reference between the proponent and the NEMA registered Experts;

- i. To provide background information of the project area;
- ii. Document SPR methodology;
- iii. Describe the nature of the project;
- iv. Describe the location of the project;
- v. Undertake a comprehensive public participation;
- vi. Identify and analyze the potential environmental impacts of the sub-project;
- vii. Propose mitigation measures for the significant negative impacts of the sub-project on the environment;
- viii. Develop a Social and Environmental Management and Monitoring Plan; and
- ix. Prepare and submit to NEMA a Summary Project Report (SPR) of the likely environmental and social impacts of the project for approval.

ANNEX 6. Public Baraza Notification Poster



## ANNEX 7. PUBLIC PARTICIPATION MINUTES AND ATENDANCE LIST

### **MINUTES OF THE SPR PUBLIC PARTICIPATION ON THE PROPOSED SARAMEK WATER PAN CONSTRUCTION SUB-PROJECT HELD AT THE SUB-PROJECT SITE ON 18/01/2021**

Attendance (see attached signed list)

#### **AGENDA**

1. Opening prayers and introductions
2. A brief overview of the SPR process and public participation
3. Public participation in the proposed water pan construction sub-project
4. Way forward

#### **MIN1/18/01/2021: PRELIMINARIES**

The meeting started with prayers from Mr. John Kirui. CESSCO conducted the self-introductions segment of the meeting with each participant saying his or her name and his or her role in the project.

#### **MIN 2/18/01/2021: BRIEF OVERVIEW OF THE ESIA PROCESS AND PUBLIC PARTICIPATION**

The community was enlightened on the technical aspects of the sub-project by the Water Engineer. The consultant was then called upon to give an overview of the SPR process and the importance of public participation. He began by asking the community if they were aware about the meeting. One community member responded by stating that they had gotten information through the sub-location assistant chief that there would be a meeting about the water pan construction sub-project on ESIA which is required by NEMA. The consultant then explained to the community on the ESIA process and why it was necessary for the public to participate. He then took the community through the public participation process.

#### **MIN3/18/01/2021: THE PUBLIC PARTICIPATION PROCESS**

The public was told that the process would involve filling in questionnaires that had been prepared to capture all the required information for the ESIA. These includes the effect on the physical and biological environment, expected social and economic benefits, proposed mitigation measures for the negative impacts and any objection to the implementation of the sub-project. The community members were further informed after filling in the questionnaires that a Focus Group Discussion

would be conducted for more detailed information to be captured. The community was taken through these whole processes by the consultant.

**MIN4/18/01/2021: WAY FORWARD**


On the question of whether there was an objection to the implementation of the sub-project as proposed and designed, the community members present said they had no objection. They emphasized that they had proposed the sub-project because the water pan which was constructed in the late 1940's had greatly silted up making the community unable to cop during dry seasons. They further explained that the sub-project would be significant in contributing to access to water for livestock watering and micro-irrigation. There being no other business the meeting ended at 1:45 pm with a closing prayer from one of the participants.

Minutes confirmed by;

Chairman..... Date.....

Secretary..... Date.....

ANNEX 8. SAMPLE SPR INDIVIDUAL QUESTIONNAIRE ADMINISTERED



**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT**  
**PREPARATION FOR PROPOSED SARAMEK WATER PAN SUB-PROJECT**

**Public/stakeholder consultation questionnaire**

**Saramek Community**, herein referred to as the proponent, has submitted a proposal for funding by the World Bank Group through KCSAP which has been approved by the County Steering Committee. The World Bank Group Environmental and Social Safeguards Policies as well as the Environmental Management and Coordination Act No. 8 of 1999 which underpins ESIA as a tool for ensuring sustainable development in implementation of projects which are likely to affect the environment both require that such projects be subjected to public and stakeholder participation.

You have been identified as a neighbor who is likely to be affected by the proposed project. You are hereby requested to document your views by filling this questionnaire to enable NEMA to make an informed decision about the proposed project.

Do you belong to any of these group? (A) Youth ..... Male /Female  (B) Women  (C) Elderly ..... Male /Female  (D) Differently abled..... Male /Female  (E) Other ..... Male /Female

**Potential negative impacts**

- Environmental impacts
  - i. Degradation of water quality.
  - ii. Increase in dust and noise.
  - iii. Increase in health risks of drowning.
  - iv. Increase pollution of surface water from broodies.
  - v. Removal of soil and vegetation impacting a habitat.
  - vi. Change in the natural hydrological pattern.
- (v) ~~Change for~~
- Social impacts
  - i. Influx of immigrant workers.
  - ii. Increase in traffic and risk of accidents.
  - iii. Conflicts between project proponents, regulatory service providers and public.

- iv. Increase in local utilities and services.
- v. Improve of road access.
- vi. Increase in health risks eg. drowning

**Potential positive impacts for enhancement**


• Environmental impacts

- i. Use of appropriate farming or rangeland methods
  - ii. Appropriate use of hill-tops.
  - iii. Grading control
  - iv. Control of gully development
  - v. Proper disposal of patches and road run off.
  - vi. Improvement of broad crops fields through irrigation.
- (v) Use of cut-off drains and artificial waterways where required

• Social impacts

- i. ⇒ Provision of clean water for domestic and animal.
- ii. ⇒ Creation of job opportunities eg. manual labor.
- iii. ⇒ Advancement of farming techniques / modernization of agricultural activities.
- iv. ⇒ Availability of power supply to the local & nearby institutions.
- v. ⇒ Improvement of roads that were not accessible.

• In summary, is the project sustainable? Yes..... No.....

NAME	Indira Arora
ID. NO.	23457734
PHONE NO	07442268
ADDRESS	57 Jhik
SIGNATURE	
DATE	18/11/2021



Kenya Climate Smart Agriculture Project  
(KCSAP)  
BOMET COUNTY



TYPE OF MEETING/ACTIVITY Public Participation Baraza  
VENUE Songameli Water Pan DATE 18/1/2021

ATTENDANCE LIST

S/ No	NAME	ID/P.No.	GENDER		CONTACT	SIGNATURE
			M	F		
1	JACKSON ROTICH	12933569	✓		0726972950	[Signature]
2	DAVID KOSILEI	3879743	✓		0724139036	[Signature]
3	JONATHAN MARTIN	3285725	✓		0704614157	[Signature]
4	JOHN KENDUWA	5296080	✓		0717534866	[Signature]
5	JANETH C RONO	22262225	✓	✓	0705806843	[Signature]
6	NICHOLAS SAMUEL	2824195	✓		0727330246	[Signature]
7	JOSEPH TOMBI	2435984	✓		0708448586	[Signature]
8	PATRICK LIMO	11204790	✓		0712053401	[Signature]
9	MERCY CHEROICH LIMO	20204370		✓	0710922731	[Signature]
10	CHARLES ROTICH	11298369	✓		0723687222	[Signature]
11	JOHN CHERUYOT		✓		0728656858	[Signature]
12	SAMUEL KIPROICH KIGEN	7492838	✓			[Signature]
13	RICHARD KIPKOROS CHARLIER	8071018	✓		0726709500	[Signature]
14	Samuel Kitur	2878493	✓		0715165113	[Signature]
15	PETER RUTO	387957	✓		0729633722	[Signature]
16	MERCY CHEMUTAI	30958616		✓	0705176778	[Signature]
17	Esther C Tommi	3778511		✓	0714892771	[Signature]
18	Anna C Chirchir	12934504		✓	0725758971	[Signature]
19	RICHARD CHERUYOT	2436683	✓		0707352636	[Signature]
20	ROSALINE C. RUTO	3878786		✓	0713193131	[Signature]

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Republic of Kenya

Kenya Climate Smart Agriculture Project (KCSAP) BOMET COUNTY



Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY

Public Participation Baraza

VENUE

Sarameth Water pan

DATE 18/1/2021

S/ No	NAME	ID/P.No.	GENDER		CONTACT	SIGNATURE
			M	F		
1	Weldon Jagon	23705805	✓	✓	0727533133	[Signature]
2	Peter K. Rugut	13886275	✓		0723245783	[Signature]
3	Elijah ROP	21767528	✓		0715161631	[Signature]
4	Joseph Koech	12933946	✓		0710844639	[Signature]
5	Terer Cheruvai	23457734	✓		0714495268	[Signature]
6	Richard Korir	11528501	✓		0729629207	[Signature]
7	Joel Shoh	23573099	✓		0792759804	[Signature]
8	Philemon Terer	26257422	✓		0720501807	[Signature]
9	Christine c Joel	12923566	✓		0728524780	[Signature]
10	John Langat	2435886	✓		0712948844	[Signature]
11	Richard W. Langat	3849446	✓		07	[Signature]
12	Francis Churcher		✓		0714254703	[Signature]
13	Joseph K. Koskei	8070722	✓			[Signature]
14	Benjamin Rotich	22398208	✓		0757914343	[Signature]
15	Josh Kitur	2426279	✓		0715510726	[Signature]
16	Joseph A. Towett	4750439	✓		0718455458	[Signature]
17	Kiprotich Tomi	30874218	✓		0716167530	[Signature]
18	CHRISTOPHER - K. CHARLES	22234745	✓		0721585580	[Signature]
19	LIMO ZAKAYO CHERUVAI	12928628	✓		0111409380	[Signature]
20	JULIUS K. TERER		✓		0713260464	[Signature]

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Republic of Kenya

Kenya Climate Smart Agriculture Project  
(KCSAP)  
BOMET COUNTY



Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY

Public PARTICIPATION BARASA

VENUE

SARANAK WATER PAN

DATE

18/01/2021

S/ No	NAME	ID/P.No.	GENDER		CONTACT	SIGNATURE
			M	F		
1	JONATHAN KOSKET	525494	✓		0728676487	Jdn
2	ROSE LANUAI	25836175		✓	0715149509	R
3	CHRISTINE LANUAI	25657382		✓	0708646250	Christine
4	VINCENT KIPSANG	20030814	✓		0722458795	Vincent
5	WESLEY KIPKOECH	31489949	✓		0920875637	Wesley
6	WESLEY K. OTHIEH	27313926	✓		07 -	Wesley
7	Bernard K. Chirchir	21411606	✓		0724861245	Bernard
8	Josephine	7960970	✓		0724862411	Josephine
9	REBECCA SOT	4750667		✓	0711691540	Rebecca
10	John Tale	4750402	✓		0707456367	John
11	Francis Chesengeny	3878653	✓		0724494217	Francis
12	Annah Rogony			✓	0705165725	Annah
13	Joyce Kangat			✓		Joyce
14	Rose Langat	23908371	✓	✓	0728079317	Rose
15	Merry mitei			✓	0705724711	Merry
16	Annah Rogony			✓	0713661355	Annah
17			8	8		
18						
19						
20						

## ANNEX 9. STAKEHOLDER CONSULTATION MINUTES

### **MINUTES FOR SARAMEK WATER PAN CONSTRUCTION STAKEHOLDERS CONSULTATION MEETING HELD ON 29/04/2021 AT TWIGS ANNEX HOTEL.**

#### **IN ATTENDANCE:**

	<b>Name</b>	<b>Position</b>	<b>Organization</b>	<b>Contact</b>
1.	Mercy Chepngeno	Youth	TEMVOL CBO	0714525855
2.	Erick Ngeno	CASO	KCSAP	0723985067
3.	Samuel Ondeng	CDE	NEMA	0721551977
4.	Stephen Mutai	CESSCO	KCSAP	0724683639
5.	Paul Siele	Chairman	TEMVOL CBO	0724522693
6.	Samwel K. Maina	Chairman	Charirik Project Committee	0710213354
7.	Julius Kenduiwa	CPC	KCSAP	0721403241
8.	Evans Kiplagat	Director- Livestock	CGoB	0725494065
9.	Kipkosgey Langat	Director Surveys	CGoB	0712982487
10.	Beatrice Ruto	Director -Water	CGoB	0721225210
11.	Paul K. Maritim	Lead Expert	CGoB	0723737683
12.	Hellen Chepngeno	VMG	Saramek Project Committee	0712996100
13.	John Kirui	PMC	Saramek Project Committee	0720481284
14.	Chepngeno Hellen	VMG	Saramek Project Committee	0712996100

#### **AGENDA**

1. Preliminaries
2. Opening remarks by CPC
3. Brief by CESSCO
4. Collection of stakeholder views by Lead Expert
5. AOB

#### **MIN.1/29/04/2021: PRELIMINARIES**

The meeting was called to order by CESSCO Mr. Stephen Mutai at 10.25am. Mercy Chepngeno opened the meeting with a word of prayer. CESSCO then welcomed the participants to the consultative meeting.

#### **MIN.2/29/04/2021: OPENING REMARKS BY CPC**

The CPC welcome the Stakeholders to the consultative meeting. He gave a brief of project's implementation status. Two Water pans of Lelechwet and Chemororoch have been completed and just awaiting commissioning. Mogoiywet water pan and Gorgor Water tank ESIA and SPR respectively are awaiting World Bank's clearance. The phase three sub projects include Saramek and Charirik water pans. One producer organization of Indigenous Chicken wrote a successful EDP. All the three require SPR.

#### **MIN.3/29/04/2021: OPENING REMARKS BY CESSCO**

He gave brief on Saramek and Charirik water pans, and TEMVOL CBO Summary Project Reports. Proposal documentation done, projects screening accomplished, official search for land ownership done, public participation done as recommended and individual questionnaires administered. It was

the day for stakeholders' consultation and their views captured. The remaining part is drawing and design to be finalized.

**MIN.4/29/04/2021: COLLECTION OF STAKEHOLDER VIEWS BY LEAD EXPERT**

The views of the stakeholders are as summarized below;

S/No.	Stakeholder	Stakeholder interest/need
1.	NEMA	Public notice of 12/3/202 on reclassification of projects should be observed; low risk, medium risks and high risks projects. Projects' screening should be done in consultation with his office.
2.	Agriculture	Want the water pan to provide water for livestock and irrigation of high value crops
3.	VMG Rep	Want the project to be implemented to completion and be functional
4.	Lands Survey	Public land boundary to be maintained after geo-referencing and safeguarding of its public reservation as a water pan
5.	County water department	The project be implemented as the planning design by following Engineer's drawings and design.
6.	Livestock department	Increased access to water by livestock which increases productivity, thus enhancing food security.
7.	Project management committee Rep	Irrigation component will help improve farmer's food security needs.

**MIN.5/29/04/2021: A.O.B**

NEMA Director shared his contact number for any environmental issues bedeviling the community including noise at night and dangerous quarries.

**Adjournment**

There being no other business, the meeting was adjourned at 2.40pm. The closing prayer was given by Mercy Chepngeno.

**Minutes signed by:**

Name	Designation	Signature	Date
1. Beatrice Ruto	Water Engineer		4/5/2021
2. Stephen Mutai	CESSCO		4/5/2021



Republic of Kenya



Kenya Climate Smart Agriculture Project

Kenya Climate Smart Agriculture Project (KCSAP)  
BOMET COUNTY

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY: STAKEHOLDERS CONSULTATIVE MEETING  
 VENUE: JALIGO HALL DATE: 29/4/2022

S/No	NAME	ID/P/No.	GENDER		ORGANISATION	DESIGNATION	CONTACT	EMAIL	SIGNATURE
			M	F					
1	MERCY CHEMENO	2243724		✓	TEKNOV CBO	B.D.M	0714525255		<i>[Signature]</i>
2	JOHN KIRUI	382482	M		SARAKI BATH	CHAIRMAN	0720482254		<i>[Signature]</i>
3	CHEPANGENI HELLEN	1366788		✓	SARAKI DAM	MEMBER	0712908100		<i>[Signature]</i>
4	PAUL SIELE	2025813	✓		TEKNOV CBO	CHAIRMAN	0724522679	stepaul@kenyaclimate.org	<i>[Signature]</i>
5	PAUL K. MARITIM	11369949		✓	ENVIRONMENTAL PROTECTION	LEAD EXPERT	07233737683	phoenix@kenyaclimate.org	<i>[Signature]</i>
6	STEPHEN MUSA	20080828	✓		KCSAP	CESSCO	072463837	stephenmusa@kenyaclimate.org	<i>[Signature]</i>
7	EVANS KIPLAGAT	87020269	✓		FUTURE LEAD PRODUCTION DEPT	A.D.P	0735 449065	kiplagat@kenyaclimate.org	<i>[Signature]</i>
8	SHULEI K MAINI	3825765			CHAIK DAM	CHAIR	0710732515		<i>[Signature]</i>
9	BESTICE PUDO	1366772		✓	Niv. wato	COB. wato	0721225200	bestice@kenyaclimate.org	<i>[Signature]</i>
10	ERICK NGENI	2010027	✓		KCSAP	C.A.S.P	073545167	erick@kenyaclimate.org	<i>[Signature]</i>
11	ARGENT KIPKISGEM	1366788	✓		Dr. Juma	COB. wato	071-984484	argent@kenyaclimate.org	<i>[Signature]</i>
12	SAMUEL ONDICKI	1260016	✓		MEMA	C.D.L	0721551911	Samuel@kenyaclimate.org	<i>[Signature]</i>



Kenya Climate Smart Agriculture Project  
(KCSAP)  
BOMET COUNTY



Kenya Climate Smart  
Agriculture Project

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY

VENUE

DATE

S/ No	NAME	ID/P/No.	GENDER		ORGANISATION	DESIGNATION	CONTACT	EMAIL	SIGNATURE
			M	F					
1	Kendulwa Funs	20060704	✓		KCSAP	CPC	0714-45021	kamburika	
2	FESTAS OF BOMET	31207314	✓		KCSAP	Attachment.	0723735714	Fechanuyoi@	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

**KEY INFORMANT MATRIX**

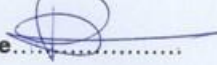
**PREPARATION OF SPR REPORT FOR PROPOSED CONSTRUCTION OF SARAMEK WATER PAN SUB PROJECT, KIBOSON SUB-LOCATION, KONGASIS WARD, CHEPALUNGU SUB-COUNTY, BOMET COUNTY.**

**Summary Project Report for Saramek Water pan construction sub-Project**

These types of projects are subject to the rules and regulations of EMCA, 1999, as it is anticipated that there might be effects on the physical, biological and socio-economic environment of the surrounding area and the community during project implementation. Public consultation is therefore a basic requirement during the Environmental and Social Impact Assessment process. The objectives of consultation and public participation are to:

1. Gather comments, concerns and suggestions of the interested and affected parties.
2. Establish a communication channel between the public and proponent and the Government and
3. Incorporate the information collected in the study by EIA specialists.

**This is to request your participation by answering the questions in this questionnaire.**

Name of Respondent Beatrice Ruto Sex Female Date 26/2/2021 Signature 

Designation/Occupation.....

SCORING GUIDE

No impacts	Major impacts	Minor impacts
None	Major	Minor

**QUESTION:** What would be the magnitude of the impacts of the above project on the following aspects at the specified phases? Mark a tick (✓) in the appropriate box. If the perceived impact is NEGATIVE, please indicate possible remedial measures and person/institution responsible in the appropriate box.

i) At construction phase

ASPECT/NARRATIVE	Positive impacts			Negative impacts			Proposed mitigation for negative impacts
	None	Major	Minor	None	Major	Minor	
1.1 Noise and vibration						✓	Well maintained machinery
1.2 Air and water quality						✓	Minimise movement
1.3 Soil erosion					✓		Trees and grass planting
1.4 Soil degradation						✓	
1.5 Soil acidity & alkalinity				✓			
1.6 Disease incidences						✓	Avoid Stagnant Water
1.7 divert the water resources from its natural course or location				✓			
1.8 Cultural erosion				✓			
1.9 Moral decay				✓			
1.10 Vegetation cover and biodiversity						✓	Replant trees at the upstream
1.11 Wildlife and wildlife habitat				✓			
1.12 Environmentally sensitive areas				✓			
1.13 Human wildlife conflict				✓			
1.14 Accumulation of solid waste						✓	Dispose of appropriately
1.15 Proliferation of invasive species				✓			
1.16 Crop production		✓					

~ 2 ~

1.17 Livestock production	✓	✓				
1.18 Fish production			✓			
1.19 Education standards			✓			
1.20 Human settlement				✓		
1.21 Indigenous people				✓		
1.22 Child delinquency				✓		
1.23 Gender disparity				✓		
1.24 Employment opportunities and income generation			✓			
1.25 Economic growth		✓				
1.26 Living standards		✓				
1.27 Business and market opportunities			✓			

ii) At operation phase

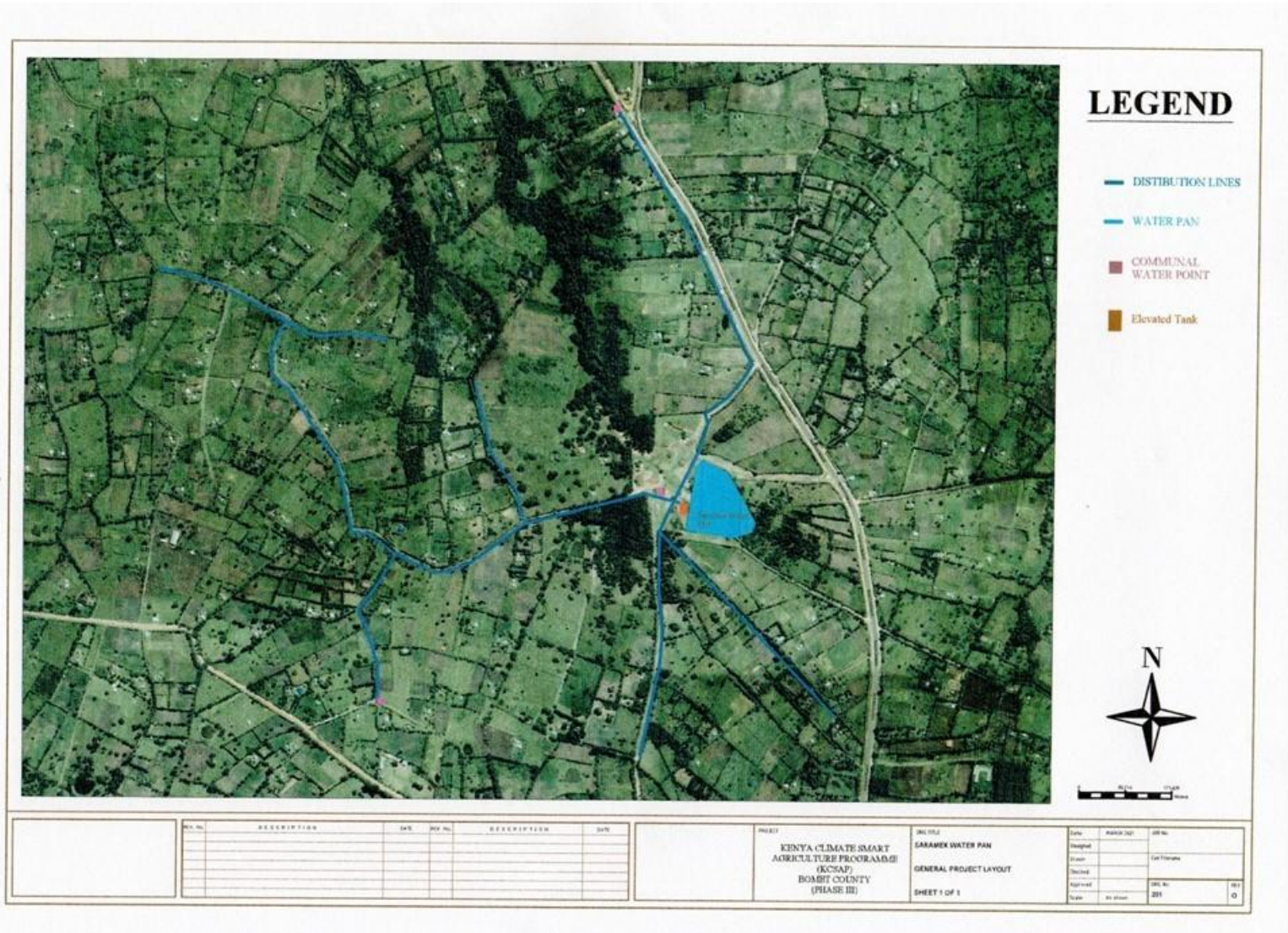
ASPECT/NARRATIVE	Positive impacts			Negative impacts			Proposed mitigation for negative impacts
	none	major	minor	none	major	minor	
1.1 Noise and vibration						✓	well maintained machinery
1.2 Air and water quality						✓	use machinery - approximately
1.3 Soil erosion					✓		
1.4 Soil degradation						✓	plant trees and grass
1.5 Soil acidity & alkalinity				✓			
1.6 Disease incidences						✓	Control mosquitoes

~ 3 ~

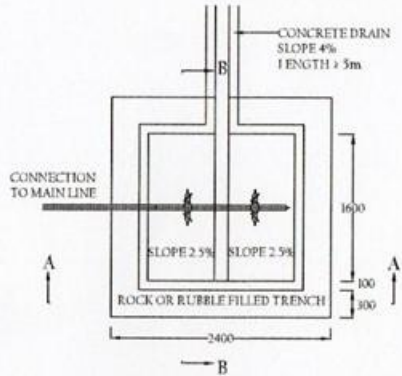
1.7 Divert the water resources from its natural course or location							
1.8 Cultural erosion				✓			
1.9 Moral decay				✓			
1.10 Vegetation cover and biodiversity					✓	Plant trees, fruits and grass	
1.11 Wildlife and wildlife habitat				✓			
1.12 Environmentally sensitive areas				✓			
1.13 Human wildlife conflict				✓			
1.14 Accumulation of solid waste					✓	Proper solid waste disposal	
1.15 Proliferation of invasive species				✓			
1.16 Crop production		✓					
1.17 Livestock production		✓					
1.18 Fish production			✓				
1.19 Education standards			✓				
1.20 Human settlement				✓			
1.21 Indigenous people				✓			
1.22 Child delinquency				✓			
1.23 Gender disparity				✓			
1.24 Employment opportunities and income generation			✓				

~ 4 ~

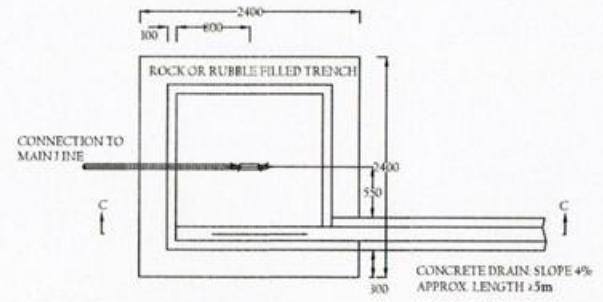
ANNEX 11. DRAWINGS AND DESIGNS



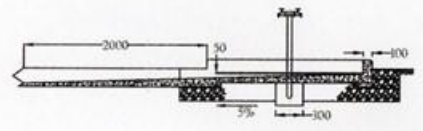




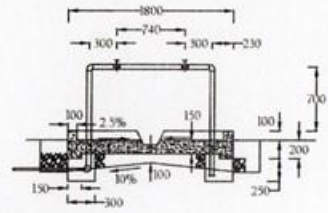
PLAN 4 TAP CWP  
SCALE 1:40



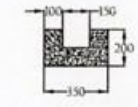
PLAN 2 TAP CWP  
SCALE 1:40



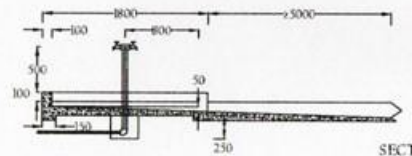
SECTION B-B  
SCALE 1:40



SECTION A-A  
SCALE 1:40

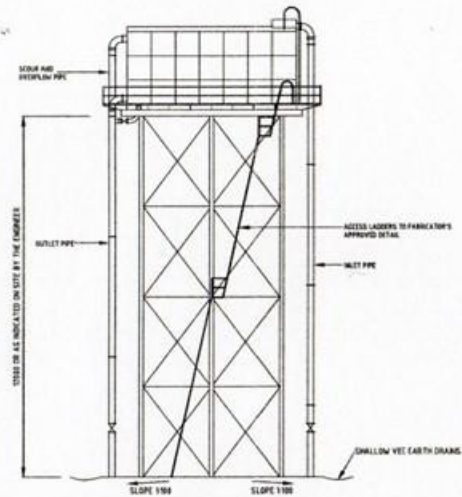


SECTION THROUGH DRAIN  
SCALE 1:40

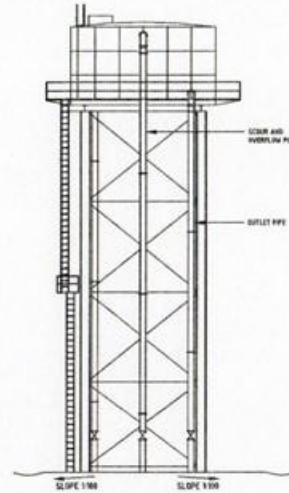


SECTION C-C  
SCALE 1:40

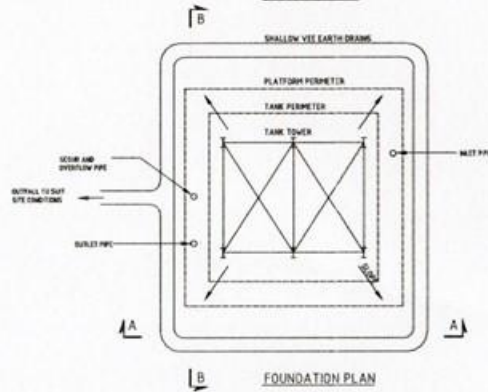
Class		Location	
Drawn by		File Name	Scale
Checked by		Project	1:40 OR AS SHOWN
Designed by		Working Title	
Reviewed by		COMMUNAL WATER POINT	
Approved by		Drawing No.	Rev. No.
		TYPE DRAWING V	7/11



ELEVATION A-A



ELEVATION B-B



FOUNDATION PLAN

**NOTES**

1. THIS DRAWING SHOWS THE GENERAL ARRANGEMENT OF THE PRESSED STEEL ELEVATED WATER TANKS FOR THE VILLAGE WATER SUPPLY.
2. THE SIZE OF WATER TANK REQUIRED FOR EACH VILLAGE IS DETAILED IN THE TABLE BELOW.
3. ALL MATERIALS AND FABRICATION SHALL CONFORM WITH THE RELEVANT B.S. / IS.
4. THE LOCATION AND HEIGHT OF THE STRUCTURAL STEEL WATER TOWER IS TO BE MARKED ON SITE BY THE ENGINEER.

WATER TANKS TABLE	
LOCATION	CAPACITY (ML)
SOLVA	200
RIKANDWA	300

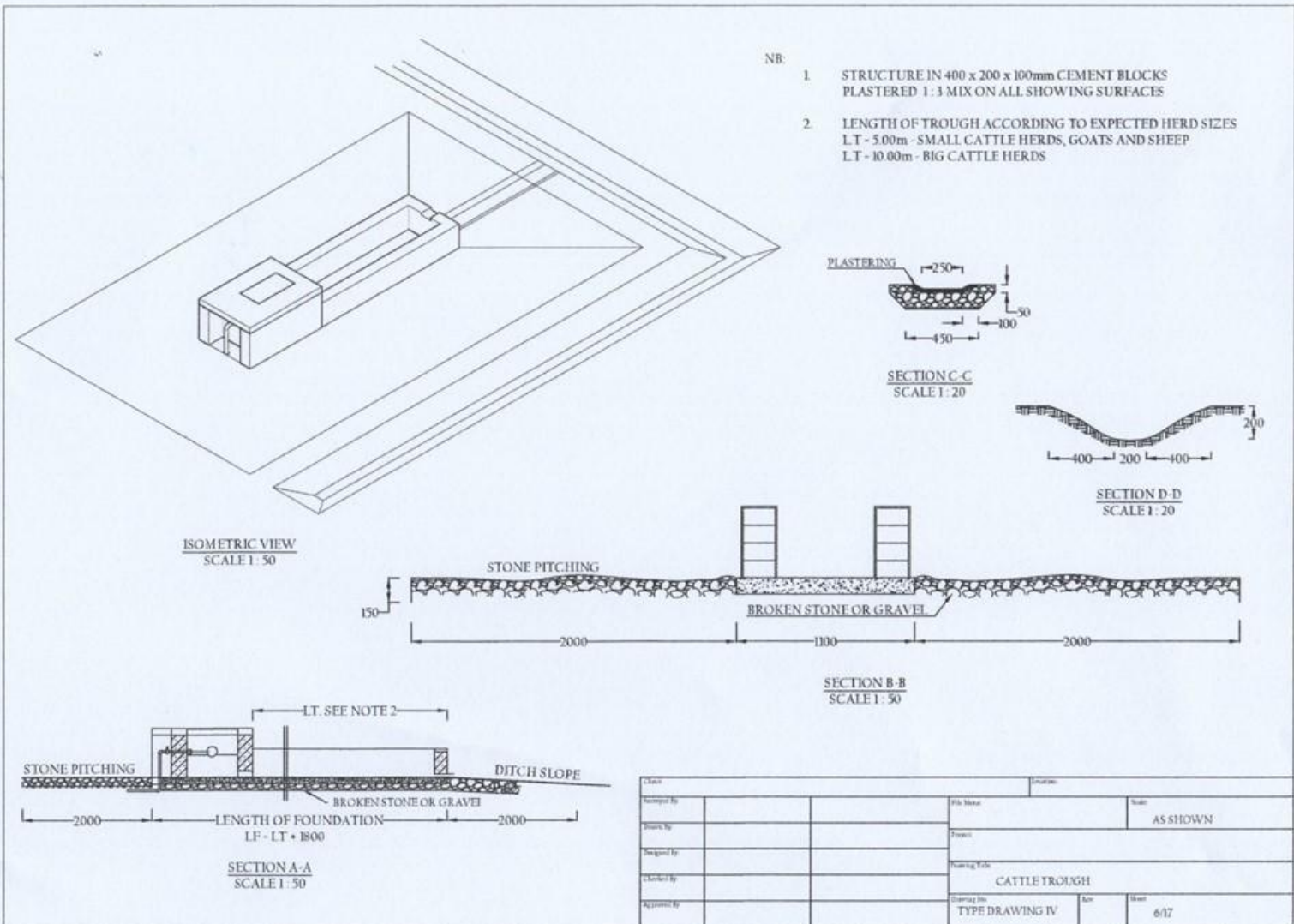
NO.	DESCRIPTION	REV.

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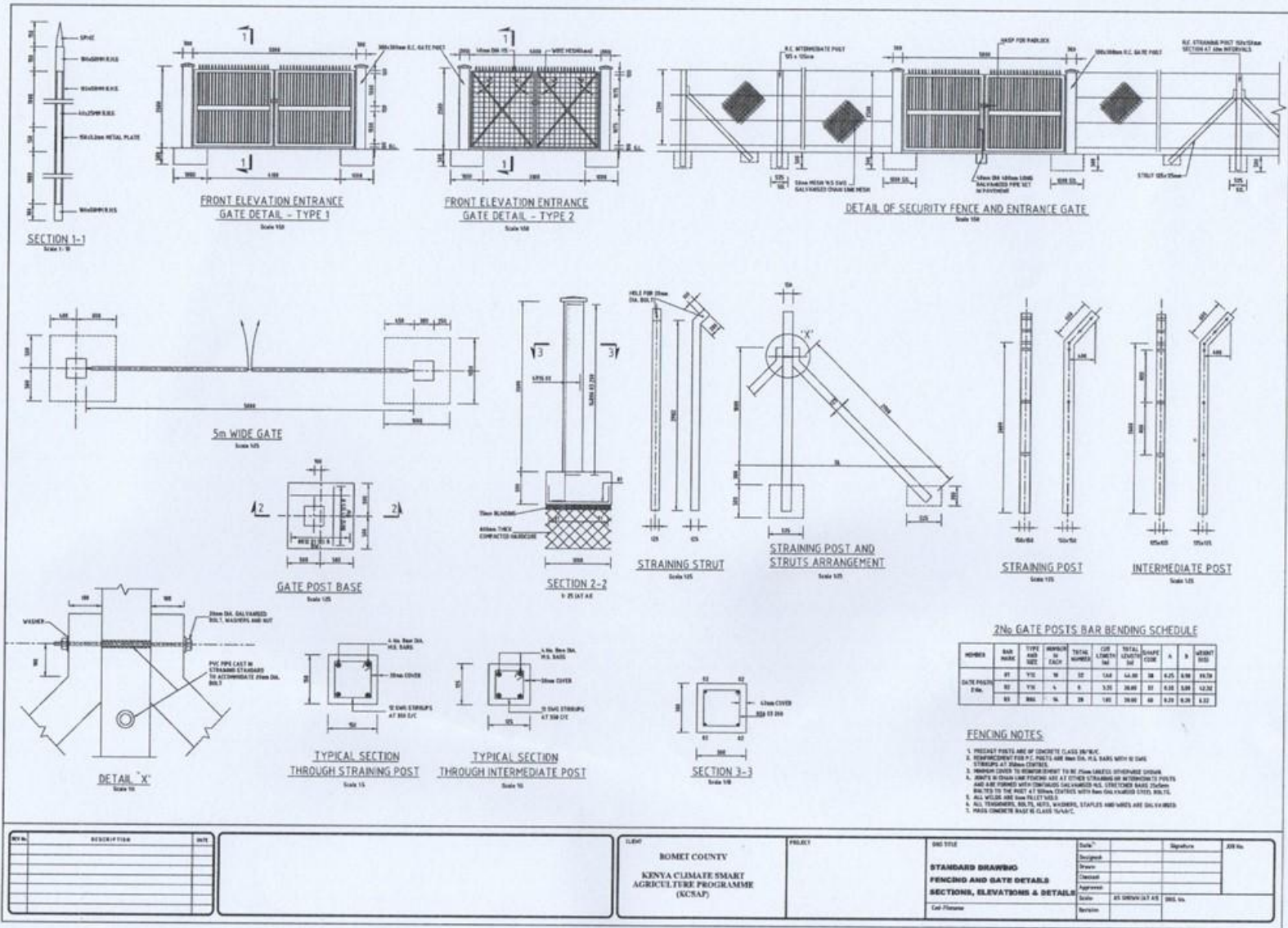
CLIENT <b>BOMET COUNTY</b> KENYA CLIMATE SMART AGRICULTURE PROGRAMME (KCSAP)
--

PROJECT  
-----------------

DWS TITLE <b>TYPICAL PRESSED STEEL          ELEVATED WATER TANK          PLAN AND SECTIONS</b>	Date: Designed: Drawn: Checked: Approved: Scale: Call Floor:	Signature:      Date:	DR No. <b>K1262B</b>
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Client				Location		
Designed by		File Name		Scale	AS SHOWN	
Drawn by		Project				
Checked by		Drawing Title	CATTLE TROUGH			
Approved by		Drawing No.	Rev	Sheet	6/17	
		TYPE DRAWING IV				



REV.	DESCRIPTION	DATE

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CLIENT  
**BOMET COUNTY**  
KENYA CLIMATE SMART  
AGRICULTURE PROGRAMME  
(KCSAP)

PROJECT

DWG TITLE  
**STANDARD DRAWING**  
**FENCING AND GATE DETAILS**  
**SECTIONS, ELEVATIONS & DETAILS**

Scale:		Signature:		DATE:	
Design:					
Drawn:					
Checked:					
Approved:					
Date:	05 SEPTEMBER 2018				
Revision:					

ANNEX 12. BILL OF QUANTITIES

S.No.	SUMMARY	AMOUNT	
		KSHS.	CTS
A.	BILL NO. 01 Preliminaries and general items		
B.	BILL NO. 02 Excavation and construction of the water pan	12,959,200	00
C.	BILL NO. 03 Laying of pipeline	2,596,440	00
D.	BILL NO. 04 Cattle troughs	174,100	00
E.	BILL NO. 05 Communal water points (4 No.)	300,000	00
F.	BILL NO. 06 Tree planting	50,000	00
G.	BILL NO. 07 Perimeter fence	531,200	00
H.	BILL NO. 07 Construction of toilets	200,000	00
	<b>TOTAL</b>	16,810,940	00
	Add 3% contingencies	504,328	00
	Add 3% supervision	504,328	00
	<b>GRAND TOTAL</b>	<b><u>17,819,596</u></b>	00

**CHANCE FIND PROCEDURE**

**Historical and Archaeological Sites**

1. If the Contractor discovers archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:
  - i. Stop the construction activities in the area of the chance find.
  - ii. Delineate the discovered site or area.
  - iii. Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry of Sports, Culture and the Arts take over.
  - iv. Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Sports, Culture and the Arts immediately (less than 24 hours).
  - v. Contact the responsible local authorities and the Ministry of Sports, Culture and the Arts who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the relevant Ministry of Sports, Culture and the Arts (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values.
  - vi. Ensure that decisions on how to handle the finding be taken by the responsible authorities and the Ministry of Sports, Culture and the Arts. This could include changes in the layout (such as when the finding is an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage.
  - vii. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry of Sports, Culture and the Arts; and
  - viii. Construction work will resume only after authorization is given by the responsible local authorities and the Ministry of Sports, Culture and the Arts concerning the safeguard of the heritage.