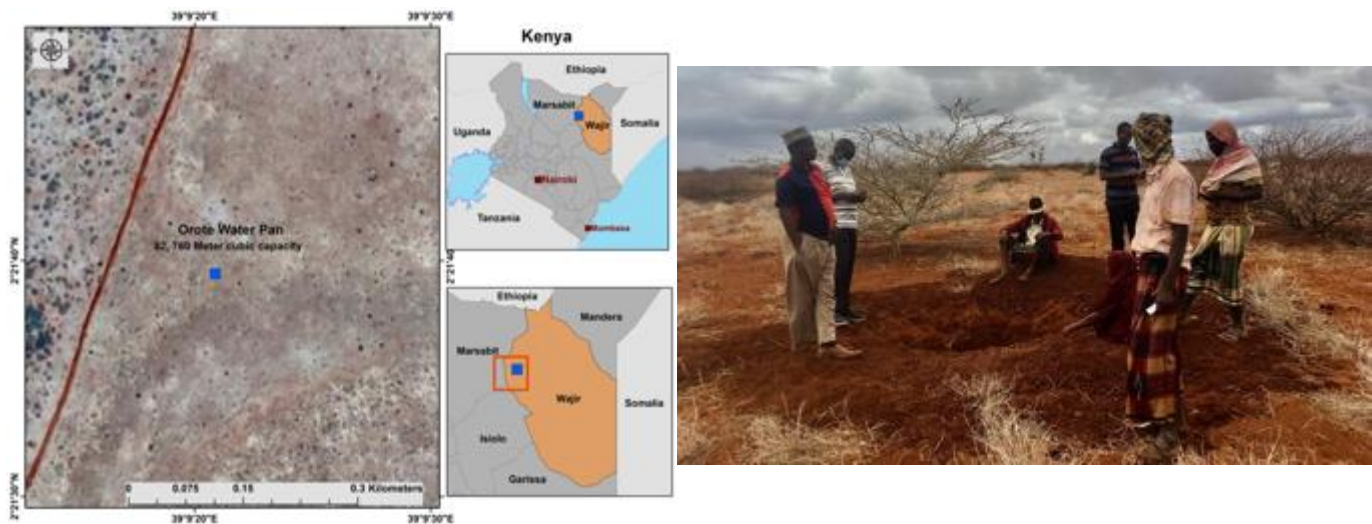




**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)
REPORT/ SUMMARY PROJECT REPORT (SPR)**

FOR

**THE PROPOSED OROTE WATER PAN IN LOKOLE SOUTH WARD,
ELDAS SUB-COUNTY, WAJIR COUNTY**



*Proposed Site for Orote Water Pan in Wajir county
At GPS Co-ordinates: 2.361042,39.155997*

Elijah Iwevo Reg. No. 6521

ESIA /EA Lead Expert:

SUBMITTED TO NEMA WAJIR COUNTY

June 21

CERTIFICATION

This ESIA /EA proposed project report has been prepared by ESIA /EA Lead Expert Mr. Elijah Iwevo Reg. No. 6521 ([Annex 10](#)). The report has been written with reasonable skills, care and diligence in accordance with the World Bank (WB) safeguards policy, the EMCA1999 (*Amended, 2015*) and the Environmental and Social Impact Assessment and Audit Regulations, 2003. I, undersigned, certify that the particulars in this report are correct and righteous to the best of my knowledge.

PROPONENT

On behalf of Orote Community, Lokole South Ward, Eldas Sub-County in Wajir County

Kenya Climate Smart Agriculture Project (KCSAP)
P.O BOX 545-70200,
WAJIR COUNTY

Signature



Date: **23 April 2023.**

Abdinoor Musa

Project Coordinator

Kenya Climate Smart Agriculture Project (KCSAP)

Wajir County.

ESIA/EA LEAD EXPERT:

Signature:



Date: **23 April 2023**

1. Elijah Iwevo
NEMA Expert (Reg. No. 6521).
-

ACKNOWLEDGEMENT

The ESIA/Audit Experts are grateful to the project proponent –Kenya Climate Smart Agriculture Project (KCSAP) Wajir County for commissioning to conduct this ESIA and SPR in respect of the proposed Project. I would like to acknowledge with great appreciation all those community members at the proposed site Orote who participated in the public consultation process for their cooperation throughout the exercise. I further acknowledge the support, either direct or indirect, from the various parties who assisted the ESIA/EA experts’ team towards the successful completion of this ESIA report. They include KCSAP coordinator Mr. Abdinoor I. Musa and CESSCO Mr. Muhumed Hassan Ali. Finally, I wish to recognize and appreciate the efforts and inputs of the reviewers at the county, NPCU and the World Bank Group for reviewing this document to the required standards. I wish to thank the Orote community leaders that supported the organization of the community members during public participation and stakeholder consultation.

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ABBREVIATIONS/ACRONYMS

CESSCO	County Environmental and Social Safeguards Officer
ASAL	Arid and Semi- Arid Lands
CDC	Center for Disease Control
CIDP	County Integrated Development Plan
COVID 19	CoronaVirus Disease 2019
CPMU	Community Project Management Committee
SPR	Summary Project Report
EA	Environmental Audit
EMCA	Environmental Management Coordination Act
EMS	Environmental Management System
ESIA	Environmental Social and Impact Assessment
ESMonP	Environmental and Social Monitoring Plan
ESMP	Environmental and Social Impact Management Plan
GBV	Gender Based Violence
GRM	Grievance Redress Mechanism
KALRO	Kenya Agricultural and Livestock Research Organization
KCSAP	Kenya Climate Smart Agriculture Project
KRA	Kenya Revenue Authority
NEMA	National Environment Management Authority
PDO	Project Development Objective
PPE/C	Personal Protective Equipment and Clothing
SDGs	Sustainable Development Goals
SEA	Sexual Exploitation and Abuse
SHE	Safety, Health and Environment
SPR	Summary Project Report
VMGs	Vulnerable and Marginalized Groups
WB	World Bank
WHO	World Health Organization
WRA	Water Authority
WUA	Water Users Association

EXECUTIVE SUMMARY

The proposed project shall be located at Orote village. The village is located in Lokole/Basir South Ward, Eldas Sub-County, Wajir County at GPS coordinates 2.361042,39.15599. Community members rely on water trucking and trekking for water to be used for domestic use and livestock watering. Women and young girls bear the burden of fetching water from far distances while donkeys are overburdened by hauling water carts. Excavation of the water pan shall build the community's resilience against climate change and reduce vulnerability/susceptibility through provision of water for domestic and livestock use.

Kenya Climate Smart Agriculture Project (KCSAP) sponsored by the World Bank and supported by the Government of Kenya shall implement the proposed project through community participation.

This ESIA-SPR has been undertaken with the objective of identifying potential positive and negative environmental and social impacts during the project phases (preparatory, construction, operational and decommissioning). The report also outlines the mitigation measures on the identified negative impacts.

Project activities will include bush clearing, excavation of the impoundment area/reservoir of capacity 32,118m³, hauling and compaction of excavated material and embankment, inlet trench, inlet channel, outflow/spillway and silt trap. The cost of the project is estimated at Ksh. Ksh. 19,806,070. This report has been prepared in compliance with the requirements of the Environmental Management and Coordination Act (EMCA) 1999 (*Amended 2015*), CAP 387 and the National Constitution of Kenya 2010. Section 58 of EMCA and the World Bank (WB) environment and social safeguards policies

The ESIA-SPR approaches and methodology involved screening, data collection through administration of questionnaires, observations and photography, site visits and desktop environmental studies, desktop study based on proposed activities, project documents, County Integrated Development Plan (CIDP), 2018-2022 and relevant legislative and regulatory frameworks among others and site assessment of the biophysical factors. The SPR is outlined in the following chapters, [1. Introduction](#), [2. Nature of the project](#), [3. Location of the project](#), [4. Public Participation and Stakeholder Consultations](#), [5. Potential Anticipated Impacts and Mitigation Measures](#), [6. Environmental and Social Impacts Management and Monitoring Plan \(ESM&MP\)](#), [7. Conclusion and Recommendations](#), [references](#) and [annexes](#).

Stakeholder Consultation (SC) and Public Participation (PP) through public meeting/*baraza* was conducted on 15th and 16th March 2021, with a total 49 (19 Female, 30 Male) in attendance [Annex I](#). Questionnaires were used to collect data from stakeholders. The community members identified potential positive and negative environmental and social impacts. They also suggested mitigation measures for the negative impacts identified.

The main positive social impacts highlighted during the operational phase shall include, availing of adequate water for domestic and livestock use, reducing burden/trekking distance in search of water by women and young girls. Environmentally the water pan shall improve microclimate of the area for vegetation and animals. Anticipated negative environmental impacts during construction shall include loss of vegetation, where minimal clearance only to the construction site

shall be undertaken. Increased noise pollution and vibrations. Workers shall be provided with ear muffs. Increased emission of dust and smoke that shall be mitigated through sprinkling of water. Construction solid wastes will be disposed adequately. During the operational phase the anticipated environmental impact will include surface water pan pollution that shall be controlled through construction of water points/kiosks and livestock troughs. Increased soil erosion shall be mitigated through proper compaction of soil during construction. Siltation of the water pan where desiltation shall be undertaken frequently. Breaking of the water pan wall/embankment. This shall be mitigated through monitoring and assessment of the water pan walls and project site particularly before the onset of the rains and as the rains progress.

Anticipated negative social impacts during the construction phase shall include labor dispute issues which shall be solved through employing casual and unskilled labor from the local community. Spread of HIV/STIs to be mitigated through dissemination of information and awareness creation. The influx of workers and risk of transmission of COVID 19 shall be contained by sensitizing the community on control measures. Gender Based Violence (GBV) by construction workers to be minimized through capacity building and awareness of the community and workers on prevention GBV. Sexual Exploitation and Abuse (SEA) this shall be mitigated through development and implementation of a SEA action plan with an accountability and response framework as part of the C-ESMMP. Occupational safety and health shall be minimized through provision of suitable protective gear – PPE/C. During operational phase, Inequity issues on water resource accessibility shall be mitigated through formation of project management committee to make sure water resource is equitably accessed and distributed within the community, social conflict/community disputes over the water to be handled through establishment of Grievance Redress Mechanism (GRM) and create a Project Management Committee (PMC) to oversee activities at the water pan. Potential water borne disease outbreaks, like typhoid, malaria, cholera shall be controlled through sensitization of the community and provision of mosquito nets and water purifiers. Drowning risks shall be prevented by sensitizing the community and fencing of the water pan. ESMMP shall be drafted and shared with the selected contractor (C-ESMMP) for implementation. The proposed budget for the project is (Total figure for ESMMP implementation is KSH. 550,000 vs total cost. Ksh. 19,806,070) *See Chapter Six* .

In conclusion, the proposed project's objective is to excavate a water pan to provide water for domestic and livestock use. The anticipated negative environmental and social impacts that shall be minimized through mitigation measures in the EMMP in compliance with the EMCA of CAP 387 and the EIA/EA Regulations, Legal Notice No. 101 of 2003. It is recommended that for sustainability of the project a project management committee (PMC) or Water Users Association (WUA) to be formed. To avoid any conflict over the resource a grievance redress mechanism (GRM) to be put in place by the PMC/WUA. Finally, NEMA to authorize the implementation of the project after review of the SPR.

CHAPTER ONE: INTRODUCTION

1.1 Background information

The proposed project shall be located at Orote village. The village is located in Lokole/Basir South Ward, Eldas Sub-County, Wajir County at GPS coordinates 2.361042,39.15599. Community members rely on water trucking and trekking for water to be used for domestic use and livestock watering. Women and young girls bear the burden of fetching water from far distances while donkeys are overburdened by hauling water carts. Excavation of the water pan shall build the community's resilience against climate change and reduce vulnerability/susceptibility through provision of water for domestic and livestock use.

Proposal Statements and Project Justification - Orote community walk long distances as far as Arbajahan and Eldas to seek for water for domestic use and livestock watering. Women and young girls trek using donkey carts to areas mentioned. On the other hand men and young adults move livestock for watering to the areas stated. The consequences of long distances experienced donkeys as a beast of burden are under pressure and are stressed up. Women waste productive time while young girls miss school trekking for water. Excavation of the water pan shall reduce the burden by providing adequate water closer to the community. Young girls will have sufficient time to attend school and build their careers.

1.2 Justification of conducting the SPR

Justification for conducting the SPR is to determine the significant environmental and social impacts early in the project cycle so that recommendations can be built into the design and cost-benefit analysis without causing major delays or increased design costs. The SPR was as a result of the recommendation of the County Director Environment (CDE) based on the screening report, and because NEMA Public Notice on the Environmental Impact Assessment and Audit Regulations, 2019 (Amended 2015) and Legal Notice No 31 which identifies the proposed project as Low risk, thus requiring only SPR. To be effective once implementation has commenced, the ESMMP will lead to a mechanism whereby adequate monitoring shall be undertaken to realize environmental management.

- To identify environmental economic, social and health impacts (both positive and negative) anticipated during the planning, construction, operational stages.
 - To suggest possible mitigation measures for the identified negative impacts during the stages of project implementation.
 - To create awareness of the implementation of the project and solicit views/opinion from the public within the project area.
- Develop an Environmental and Social Management And Monitoring Plan (ESMMP) for the proposed project.

1.3 The SPR Objectives

The objectives of the Environmental Impact Assessment are:

- ✓ To fulfill the legal requirements as outlined in Section 58 to 69 of the Environmental Management and Coordination Act (EMCA), 1999 (*revised 2015*) and Part I and II of the *Environmental (Impact Assessment and Audit) (Amended) Regulations, 2019*, and World Bank Safeguards Regulations

- ✓ To obtain background biophysical information of the site and legal and regulatory issues associated with the project.
- ✓ To assess and predict the potential impacts during site preparation, construction and operational phases of the project.
- ✓ To make suggestions of possible alterations to the proposed design based on the assessment findings.
- ✓ To propose mitigation measures for the potential significant adverse environmental impacts and safety risks.
- ✓ To allow for Public Participation (PP) and Stakeholder Consultation (SC).
- ✓ To lower project cost in the long term; and
- ✓ To prepare an Environmental and Social Management and Monitoring Plan (ESMP).

1.4 Methods used to conduct the SPR.

The method used in conducting this ESIA involved key activities as outlined below:

- i. Literature Review: A detailed review of available documentation related to the proposed project.
- ii. Consultations with the proponent regarding the proposed project details (including the design), the site planning and implementation plan.
- iii. Interviews and consultations with the local community surrounding the water pan as well as representatives of various organizations and relevant county government officials through questionnaires.
- iv. Data collection and physical inspections of the proposed site using a data collection sheet.
- v. Evaluation of the activities around the site and the environmental setting of the wider area through physical observations as well as from existing information in literature; and
- vi. Reporting, review and submissions of the report to NEMA and WB for review, approval and consideration of issuance of NEMA licence.

Below is a typical outline of the basic ESIA steps that were followed during this assessment:

Step 1: Environmental and social Screening

Environmental and social screening was carried out to determine whether an ESIA study is necessary for this project and at what level of evaluation. This took into consideration the world bank safeguard policies and requirements of EMCA, 1999 (amended 2015), and specifically the second schedule of the same act. From the screening process ([Annex 6](#)), it was understood that this project will cause significant impacts (negative-though minimal and positive) on the environment and social of the community.

Step 2: Environmental Scoping

In scoping, focus was on environmental impacts of great concern. Environmental issues were categorized into physical, natural/ecological and social, economic and cultural aspects. Impacts were also classified as immediate and long-term impacts. This will include assessment of the proposed project in respect of but not limited to.

- ✓ Project Background: this will give the brief history of the proposed project site, the parties involved and justification of the project in terms of demand or lack of the same, the project area, relevant policy and legislation, identification of any associated project, or any planned projects.

- ✓ The proposed project objectives; both in the short and long run and they are linked to the overall objectives.
- ✓ Present environmental conditions; description of the project site, ecological zoning as well as the state of the environment and its surroundings. Attempts will state if it is already suffering from degradation. If the latter is true, the causes of the original degradation will be established and if possible, the state of the environment before the observed degradation.
- ✓ Identification of Environmental Impacts; the report will distinguish between significant positive and negative impacts, direct and indirect impacts and immediate and long-term impacts which are unavoidable and / or irreversible.
- ✓ Analysis of the alternatives to the proposed project; this will involve description of alternatives and identifying alternatives that would achieve the same objectives.
- ✓ Alternatives will be compared in terms of potential environmental impacts; capital and operating costs; suitability under local conditions; and institutional training and monitoring requirements.
- ✓ Community/ Stakeholder Consultations: these will be undertaken to determine how the project will affect the local people / various stakeholders.
- ✓ Cost- Benefit Analysis; to evaluate the economics of the project and establish its viability in terms of the expected environmental concerns and measures.
- ✓ Evaluation; an indication of how the information gathered will be evaluated to give optimum results.
- ✓ Development of an Environmental, Social Management and Monitoring Plan (ESMMP); to mitigate negative impacts, recommending feasible and cost effective measures to prevent or reduce significant negative impacts to acceptable levels, and monitoring the implementation of the mitigation measures and the impacts of the project during construction and operational phases, including an estimate of capital and operational costs, and Make necessary recommendations pertaining to the proposed development.

Step 3: Desk Study

Documentation review is a continuous exercise that involves a review of available documents on the project, including County Integrated Development Plan (CIDP), designs, project plans and designs, environmental and social legislation and regulations, **World bank safeguard policies** etc. The review provided an understanding of the terms of reference, environmental and social status, demographic trends, land use practices, development strategies and plans as well as the policy and legal documents.

Step 4: Field Assessment and public participation

Field visits and assessment involved bio-physical inspections and observation of the project site in order to gather information on the state of the environment. Several photos of the project site were taken for inclusion in this report. The GPS coordinates were also determined.

With the background obtained from preliminary visits, discussions and documentation, the proposed project site was comprehensively evaluated, and the government line departments, local administration and community were consulted. The proposed development was evaluated with a view to establish the physical environment status, social and economic trends. The field assessment was also designed to establish potential positive and negative impacts through interviews, discussions and physical observation.

The study also sought public opinion/views through Stakeholder Consultation (SC) and Public Participation (PP) exercise. Questionnaires were administered to the public and interviews held with neighbors. The questionnaires have been included in this report.

Step 5: Reporting and documentation.

Summary project report (SPR) containing findings was compiled by the expert in accordance with NEMA guidelines and submitted for review and consideration for approval. A comprehensive Summary Project Report (SPR) was drafted including World Bank policies on safeguards. The experts ensured constant briefing of the client during the exercise. Description plans and sketches showing various activities are part of the Appendices. The reports also included the environmental and social impact management plans.

1.5 Outline of the organization of report chapters

The Study Report outline is as follows:

- Chapter 1: Introduction
- Chapter 2: Nature of the project
- Chapter 3: Location of the project
- Chapter 4: Public Participation and Stakeholder Consultations
- Chapter 5: Potential Anticipated Impacts and Mitigation Measures
- Chapter 6: Environmental and Social Impacts Management and Mitigation Plan (ESM&MP)
- Chapter 7 Conclusion and Recommendations.

CHAPTER TWO: DESCRIPTION OF THE PROJECT

2.1 Introduction

This chapter shall describe the designs of the project, funding of the project, cost, design of the pan; design criteria; project layout; project activities:- for instance (pre- key activity e.g. excavation phase; pre-start meeting; mobilization of machinery; site layout; main works e.g. excavation phase); material and equipment; proposed project cost implementation time frame, regulatory requirements and data, location and site ownership, objectives and activities during the project cycle.

2.2 Project description and design

The water pan has been designed to have a reservoir, unlet channel, outflow/spillway channel, inlet trench, silt trap, spillway and impoundment area. Below are design specifications.

Table 1. Water Pan Reservoir

Description	Measurements
Top width of the Pan	97m
Top length of the pan	117m
Bottom width of the pan	66m
Bottom length of the pan	88m
Depth of the pan	4m
Reservoir capacity	32,118m ³

Table 2. Water Pan Inlet Channel

Description	Measurements
Top width	6 m
Depth	0.5m

Table 3. Water pan Outflow/spillway channel

Description	Measurements
Top width	6m
Bottom width	3.52m
Depth	1.22m
Bed slope	0.75%

Table 4. Water Pan Silt Trap

Description	Measurements
Outer Length	30m
Outer Width	20m
Depth	2m

Table 5. Water pan Inlet Trench

Description	Measurements
Outer width	3 m
Depth	0.3m

Other structures to be constructed include, a perimeter fence, toilet facility, plumbing and pumping works, tank with elevated tank and construction of two water troughs as per engineer's' specification

2.3 Design criteria

Design's criteria are the precise goals that a project must achieve in order to be successful. Hence, the proposed project is aimed at achieving the construction of a water pan reservoir, a perimeter fence, toilet facility, plumbing and pumping works, an elevated tank and construction of two water troughs.

2.4 Details of the Project

The project will entail the following design specifications

- a) Reservoir of 32,118m³ with the following structures
 - Inlet channel of 6m x 0.5m
 - Outflow/spillway channel of top width 6m x bottom width 3.52m x depth 1.22m x bed slope 0.75%.Silt trap of outer length 30m x outer width 20m x 2m
 - Inlet trench Outer width 3m Depth 0.3m
- b) Perimeter fence of 20m.
- c) Toilet facility (two doors of 3m by 1.5m by 3m).
- d) Installation of pipes, tank and pump
- e) Construction of two water troughs

2.5 Project layout and architectural designs

[See Annex 9](#) for Architectural designs and layout

2.6 Project activities

- a) **Pre-start meetings** with the community and stakeholders
- b) **Pre-key activities**
 - Identification of village for support
 - Need assessment and resource analysis
 - Feasibility study was conducted at the village
 - The site identification Using the local knowledge and the engineers' specialties
 - Excavation of test pits
 - Designing of the water pan and associated infrastructures (toilet, water troughs) in relation with site
- c) **Site layout by the water engineers**
- d) **Mobilization of machinery to the site**
- e) **Excavation and main works phase**
 - Clearance of the site, this shall include vegetation clearance
 - Measurement of the site
 - Excavation of the soil using earth moving machines to create the main water reservoir
 - Compacting of the embankments
 - Construction of the Inlet channel, Outflow/spillway channel, Silt trap of outer and Inlet trench Outer width.
 - Measurement and construction of perimeter fence
 - Excavation and masonry works for Toilet facility
 - Installation of pipes, tank and pump
 - Construction of two water troughs

2.7 Materials and equipment

- a) **Materials and Equipment for construction works**
 - Cement, sand, gravel, iron sheets, metal bar and water, water tank, pipes, pump, wood/timber, the equipment shall be. Earth moving machines, masonry tools and equipment.

2.8 Proposed project cost

The project cost is approximately **Ksh. 19,806,070** as shown in *Annex 8*

CHAPTER THREE: LOCATION OF THE PROJECT

3.1 Introduction

This chapter provides a description of the location of the proposed project, project location.

The project shall be located at Orote village in Lokole/Basir ward, Eldas sub-county in Wajir county.

The map shows the proposed site at GPS coordinates:

2.361042,39.155997. The site is about 1km from the Orote village settlement. It is about 120km away from Wajir town at an altitude of 389m a.s.l

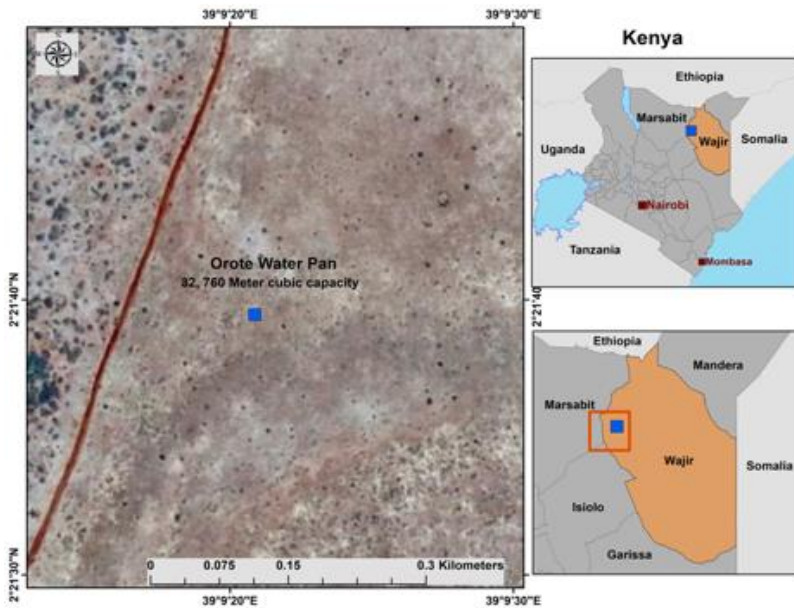


Figure 1. Map showing the Orote water pan proposed site

3.2 Siting

The proposed site is about 1km from the settlement. It is covered with shrubs and scabs. The land on which the water pan shall be excavated is communally owned. The community administration through a committee has provided and permitted the development of the project. there is a water way/rainwater run off drain adjusted to the proposed site that will be used to fill the water pan.

3.3 Site description

This section describes physical environment, climatic conditions, edaphic and geological factors, biotic factors, water resources and hydrology, socio-economic activities, land ownership and conformity of the proposed site

3.3.1 Physical Environment

This section shall focus on climatic conditions, edaphic (Soils) and geological factors, biotic factors (*flora* and *fauna*) and water resources and hydrology.

3.4.2 Climatic conditions

The county falls under agro-ecological zones ranging from IV- V. The rainfall regime is bimodal. The amount of rainfall ranges from 250mm- 300 mm. The average temperatures are 29⁰c. The area is windy especially during the dry season.

3.4.3 Edaphic (soils) and geological factors.

The site contains sandy loam soils. The soils are weathered from sedimentary rocks within the area. During the dry season the area is very dusty.

3.4.4 Biotic factors (Flora & Fauna)

Flora: The main type of vegetation consists of wooded grasslands, desert bush lands Forbes and shrubs. The type of vegetation is highly dependent on altitude, soil type and rainfall. The main vegetation within the proposed site is *Acacia spp*s tree species and *Commiphora Spps*. **Fauna:** the area has various livestock (camel, cattle, sheep and goats, donkeys and poultry). The wild life include the ostriches, antelopes, *dik-dik*, *Avian Spps*,

3.4.5 Water resources & hydrology.

There are two water pans about 4.5 km from the village. The water pan impounds and stores insufficient water for the community. There are two underground tanks used to store and supply water to the residents. The water is tracked from Eldas or Arbajahan. Wajir historical rainfall data, in Table 8, reveals that the months of March, April, May, October, November, December and January have a substantial showers that contributes to a sufficient water impounding in Orote settlement centre .This design therefore considered a design rainfall amount of seven (7) months storage period.

3.5 Socio-economic activities

- a) **Livelihood activities:** The community's main source of livelihood is rearing (cattle 300, camel 800 , sheep and goats 3,000, donkeys 100.) (*source field data, 2021*). The poverty index is about 84% as per CIDP 2018-2022.
- b) **Demography:** The village has an approximate 200 households and a total population of 400 persons (*as provided by community administration during SC, April, 2021*). The community has female household heads and the elderly as vulnerable and marginalized groups.
- c) **Education/Literacy:** The village has a primary school from Nursery to grade one with a total enrolment of 50 pupils. The literacy level stands at 47% CIDP 2018-2022.
- d) **Infrastructure:**
 - Health:* the village has no dispensary and travels to Eldas or Arbajahan for treatment..
 - Communication:* the village is connected to Safaricom service provider.
 - Roads:* the village is along Eldas-Arbajahan earth road. During the rainy season the road is impassable and very dusty during the dry seasons.
- e) **Commerce:** the community's main source of income is sale of live animals and livestock products (milk). The main markets are Eldas, Arbajahan.

3.5.1 Land ownership

The proposed land is communally owned, there are no environmentally sensitive areas to be affected. The community through the area chief permitted the use of the land. [Annex 2](#) shows the consent to use the land for the proposed project, while [Annex 5](#) displays community land resolution and agreement form for the proposed location. The proposed land is approximately 10acres.

3.5.2 Conformity to land use plan or zonation plan

The land confirms the proposed use of excavation of water pan and associated infrastructures. Currently, the site is natural land with native vegetation and wildlife.

CHAPTER FOUR: PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATIONS

4.1 Introduction.

The stakeholder consultation and public participation process is a policy requirement by the Government of Kenya and a mandatory procedure as stipulated by EMCA1999 (amended 2015) section 58, on Environmental Social and Impact Assessment for the purpose of achieving the fundamental principles of sustainable development. Categorization of community participants and stakeholders consulted included the area chief, sub county administrator, county chief officers in charge of agriculture, irrigation and water, public health officers, livestock production officers and county chief executive member. The Stakeholder consultation (SC) was conducted on **15th and 16th March 2021**

4.2 Objectives of SC and PP

The objective of the stakeholder consultation (SC) and public participation (PP) was to -

1. Sensitize and inform the stakeholders and community members about the project with special reference to its key components of the water pan designs and location
2. Gather comments, suggestions and concerns of the interested and affected parties
3. Propose/suggest solutions and mitigation measures to the various concerns
4. Incorporate the information collected in the ESIA study draft report.

In addition, the Environmental Social and Impact Assessment public consultation exercise enabled -

1. The establishment of a communication channel between the public and the project Proponent- KCSAP.
2. The decision makers are aware of the concerns of the stakeholders at an early phase of the project development.

The purpose for such interviews was to identify the positive and negative impacts and subsequently promote/enhance and mitigate them respectively. It also helped in identifying any other miscellaneous issues that may bring conflicts in case project implementation proceeds as planned. The stakeholder consultation and public participation process is a policy requirement by the Government of Kenya and a mandatory procedure as stipulated by EMCA1999 (*Amended 2015*) section 58, on Environmental Social and Impact Assessment for the purpose of achieving the fundamental principles of sustainable development.

4.3 Categorization of community participants and stakeholders

Stakeholders consulted included the area chief, ward and sub county administrators, county chief officers in charge of agriculture, irrigation and water, public health officers, livestock production officers and county chief executive members. The Stakeholder Consultation (SC) and public participation (PP) was conducted **15th and 16th March 2021**.

The community members included a total 49 (19 Female, 30 Male), vulnerable and marginalized groups (i.e. mainly the widow especially the female household head and the elderly) ([Annex 1](#)). The picture evidence of the public participation is in ([Annex 7](#)).

4.4 Methodology for PP & SC

Methods used for public participation (PP) to identify anticipated impacts and possible mitigation measures from the community members included

1. The administration of pre-designed questionnaires
2. Public meeting/baraza see ([Annex 3 for the minutes of the meeting](#)).
3. Taking pictures of community members in attendance.
4. List of participants

Methods used for stakeholder consultations included

1. Direct interviews with stakeholders using questionnaires
2. List of participants

4.5 Summary of Issues and concerns raised by the public/community and stakeholders

The table below summarizes the positive aspects and how they may be enhanced, potential negative impacts and suggested mitigation measures as provided by the stakeholders and community members

Summary of Issues and concerns by the public/community and stakeholders and as per minutes in [Annex 3](#)

Positive aspects/impacts raised

Table 6. Positive impacts of the water pan raised during SC and PP

Positive aspects/impacts raised	Enhancement
1. The water pan shall provide adequate water for domestic use, sanitation and livestock watering	Formation of a project management committee to manage the pan
2. Youth and women shall be employed and have small businesses during the project cycle	- Business area to be set aside for women and youth around the water pan. - That the local residents be considered as first priority for employment by the contractor before others
3. Community members shall earn income from sell of raw materials like water, sand and gravel during the construction phase	Such opportunity to be provided to the local community members
4. Reduce trekking distance by women in search of water	Provide watering point/kiosk
5. The vulnerable and marginalized groups shall be access water easily	In future the water to be conveyed to the community through water pipes
6. The water could be used for irrigating vegetable, and fodder around the water pan	Allocate land around the water pan for growing vegetable and fodder for livestock since its fertile

Negative aspects/impacts raised

Table 7. Negative impacts of the water pan raised during SC and PP

Negative aspects/impacts raised	Suggested mitigation measure
1. Loss of vegetation and tree covers	Selective clearing of vegetation
2. Occupational safety and health risks (Incidences of accidents)	Workers to be provided with PPEs during the construction phase
3. Increased solid waste around the water pan	Receptacles to be place strategically around the water pan

Negative aspects/impacts raised	Suggested mitigation measure
4. Increased water borne diseases (like malaria, typhoid, cholera) in case appropriate measures are not provided. The water pan shall be a breeding site for mosquitoes	<ul style="list-style-type: none"> - Community capacity building on safe use of the water pan and proper sanitation - Construction of male and female toilets around the water pan - Provision of water treatment tablets - Provision of mosquito nets - A water kiosk to be constructed at the water pan to improve sanitation and avoid contamination of the water pan
5. Drowning of children and livestock in the water pan	Community sensitization and construction of a perimeter fence
6. Concerns of siltation of the water pan	Frequent siltation of the water pan
7. Water contamination by livestock, human and wildlife	Water troughs for livestock and wildlife to be constructed away from the water pan. A fence will be constructed to avoid direct access to the water pan.

CHAPTER FIVE: ANTICIPATED IMPACTS AND MITIGATION MEASURES

5.1 Introduction

This Section identifies and discusses both positive and negative environmental and social impacts anticipated during the project cycle (i.e. construction, operational and decommissioning phases). Onsite and off-site impacts may occur due to project location and during the construction and operational phases of the proposed Project.

On-site impacts result from project siting and from the construction activities carried out within the construction site. The impacts of off-site work results from activities carried out outside the construction site, yet directly related to the proposed project. Assessment of impacts depends on the nature and magnitude of the activity being undertaken and on the type of mitigation measures that are envisaged as part of the project proposal.

The potential impacts from the proposed project area are identified and assessed based on the nature, magnitude and merits/or demerits of the various activities associated with the project. This chapter therefore, describes the anticipated positive and potential negative impacts of the proposed project of water pan during construction, operation and decommissioning phases.

5.2 Environmental and social impact Impacts (positive and potential negative)

The anticipated positive and negative impacts are described below.

5.2.1 Positive environmental and social impacts during project cycle

a) Positive Social Impacts and their enhancement measures

1. Creation of employment for the local community including women and youth.

The construction of the proposed water pan will create opportunity for temporary and casual employment to the locals particularly during the construction stage. The youths and women will be engaged in the sale of food to the workers on-site.

Enhancement measure: Women to be encouraged to prepare and sell food to the workers at the site.

2. Improved business opportunities and local economy.

- During construction the community shall earn income from sale of raw materials like sand, gravel and water for the project.
- During operation, the community members shall use the water pan in growing vegetables that could earn them income.

Enhancement measure. The community members are provided with an opportunity to supply local available materials for the project. the community to be trained to improve farming methods to improve vegetable productivity. Provision of farm inputs to the agro-pastoralists.

3. Vulnerable and marginalized groups shall easily access water for domestic use and sanitation improving their living standards.

Enhancement measure. priority to be given to VMGs during the use of the water pan.

4. **Improved food and nutrition security:** Livestock watering shall increase body condition and milk productivity thus increasing food security and nutrition of the community. In case the water pan shall be used for growing vegetables, this will improve food security and nutrition of the community too.
Enhancement measure. Support the community in formation of PMC that shall organize the utilization of water for domestic use, sanitation, livestock watering and irrigation.
5. **Reduced walking distance to water source:** Construction of the water pan will reduce trekking distance as it will provide a reliable water source throughout the year. This will translate to saving time for other productive activities especially for women who carry the burden of trekking long distances to obtain water.
Enhancement measure. Possibilities of piping and storage of water in the settlement.
6. **Improved public hygiene and sanitation:** The proposed construction of sanitary facilities (VIP Latrines) at the project site and fencing of the water pan will mean less contamination and pollution of the water and the environment. All this will result in improved sanitation and public hygiene in the area. Water borne diseases shall also be prevented.
Enhancement measure. Capacity building of the community members on hygiene and sanitation during the utilization of the water pan.
7. **Flood Control:** The proposed water pan will retain the flood water flows reducing flooding and its adverse effects in the area. The area is prone to flooding during high rainfall intensity.
Enhancement measure. Construction of more flood controlling structures.
8. **Improved skills on community project governance.** The proposed project will involve the community and the local stakeholders throughout the project cycle equipping them with management skills in water projects. The sub project will present the local stakeholders with a learning opportunity on community water project governance practices, such as: efficient water management and ways to minimize wastage, transparency, management of grievances, accountability and record keeping, among others.
Enhancement measure. Capacity building of the PMC on water management and supporting them formulation of by-laws and documentations.
9. **Livelihood diversifications.** The proposed sub project will enhance livelihood diversification to beekeeping, poultry keeping, kitchen gardening, fish farming and planting of pasture or fodder on a small scale. This will be possible through the increased volume of water in the rehabilitated and desilted pan and from time saved in search of water for livestock and even domestic during drought season. Livelihood diversification will contribute towards employment creation, income generation and food/nutrition security in the project area.
Enhancement measure. Capacity building of the community on livelihood diversification.

b) Positive environmental Impacts and their enhancement measures

1. **Improved microclimate, flora and fauna of the project area:** planting of fodder, indigenous trees, fruit trees and vegetables shall improve the micro-climate of the village.
Enhancement measure. Capacity building and provision of farm inputs including seedling to the community. Fencing of the farming areas to avoid destruction by wildlife.

2. **Reduced death of wildlife** due to lack of water thus improving the ecosystem of the area
Enhancement measure. Possibilities of constructing water troughs for wildlife.

5.2.2 Negative environmental and social impacts

a) Potential Negative Social Impacts and their mitigation measures

The following are anticipated potential social impacts and suggested mitigation measures during preparatory, construction, operational and decommissioning phases

i. During construction phase

- (1) **Labor dispute** during the excavation of the water pan and construction of related infrastructure. In case the contractor hires casual labor from outside the community to perform causal work that can be undertaken by the community could result in labor conflict.

Mitigation measures

- Casual and unskilled Labor to be sourced from the community
- Special groups to be considered in hiring, e.g. widows to be considered to undertake manual labor.
- Opportunities at the site to be disclosed to the community
- Institute grievance redress mechanism to address any labor dispute anticipated during the construction phase.

- (2) **Spread of HIV/AIDs by workers** at the site may occur if appropriate mitigation measures are not conducted for prevention.

Mitigation measures

- Dissemination of information and awareness creation on HIV/Aids and STIs shall be an integral component of the project
- The affected persons shall not be victimized or traumatized
- A mechanism for monitoring HIV/Aids and STIs shall be established.
- The contractor shall provide protection information and equipment (condom) at the site
- Guidance, counselling and support shall be provided to the victims on management of the disease.

- (3) **Influx of workers** at the proposed site may spread COVID-19, introducing different cultures.

Mitigation measures

- The community to be sensitized on measures to prevent infection of COVID-19 Health and Safety Protocols as per March 14, 2020- Occupational safety and health advisory on coronavirus (COVID-19), CDC's Coronavirus Disease Site and WHO Getting your Workplace Ready for COVID-19 to prevent COVID-19 contamination, infection and transmission.
- Community members to be trained on interacting with the workers at the site
- Provision of PPEs and adequate water or sanitizers to community members
- Reports on community sensitization and provision of PPEs

(4) Gender Based Violence (GBV) by construction workers.

In the processes of interacting with the community members some workers may be involved in gender-based violence like

Mitigation measures

- Capacity building and awareness of the community on GBV
- Emphasize prevention and minimal harm to women and girls. Adopt risk-based approaches that aim to identify key risks of SEA and undertake measures to prevent or minimize harm.
- Build on existing local knowledge. Engage the community partners, local leaders, civil society organizations, gender and child advocates and mechanisms for support throughout the project cycle.
- 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.

(5) Sexual exploitation and abuse (SEA) by construction workers

SEA may occur where the workers may use their influence in terms of money to lure young girls and exploit them sexually. This could be contained through the following mitigation measures.

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

development of contract policies related to SEA, including whistleblower 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.

During operational phase

- (1) **Inequity issues on water resource** accessibility may be experienced if suitable measures are not put in place, especially on VMGs

Mitigation measures

- Facilitate formation of project management committee to make sure water resources is equitably accessed by all community members
- Rationing to be undertaken when water levels drop during the dry season to ensure equal distribution among the community members
- In case of shortage, community through the local administration to liaise with department of water for water trucking

- (2) **Social conflict/community disputes** over the water resources may occur, especially during the dry season when water levels dwindle in the water pan.

Mitigation measures

- Establish grievance redress mechanism (GRM) to address any labor dispute anticipated during the construction phase.
- Create a project management committee to oversee activities at the water pan.
- Involve all community members in any discussions on the use of the water pan.
- Community to be trained on the utilization of the water efficiently and on matters of peace.

- (3) **Potential water borne disease outbreak** in case appropriate preventive measures are not adhered to. The water pan creates a breeding habitat for disease causing vectors such as mosquitoes that transmit malaria and Chikungunya. Other diseases include typhoid, cholera and dysentery.

Mitigation measure.

- Introduce fish fingerlings in the water pan in collaboration with the fisheries department that could consume the mosquito larva thus controlling them.
- Sensitize the community on malaria prevention through use of mosquito nets, local spraying and bush clearing near households
- The proponent sensitizes the community on water purification methods.

- (4) **Drowning Risk:** The water pan filled with water presents the risk of drowning to people or animals that may stray into the perimeter fence of the water pan. The risk has been significantly reduced through the proposed fencing and installation of a gate.

Mitigation measures.

- The community be sensitized on the potential risk of drowning
- The gate to be always locked with a padlock
- Involvement of the whole community members in ensuring that the perimeter fence is maintained and not destroyed (encourage community policing).

- (5) **Occupational Health and Safety**

The Supervising Engineer will oversee that the contractor adheres to the rules set by the authorities for the protection of his workers.

Mitigation measures:

- Provision of suitable protective clothes – PPE/C. The contractor should provide overalls, helmets, safety boots, earmuffs, nose masks and gloves to the workers.
- The contractor should ensure that there are no spills of petroleum, no smoking, no sources of ignition and proper use of warning signs in an explosive environment.
- All subproject workers should have insurance and workman's compensation.
- Provision of fully equipped first aid kit at the site.
- Ensure the availability of Emergency contacts for police, ambulance, etc.
- Emergency plans should be communicated and well understood.
- Train workers on first aid provision, and fire safety. Provide fire extinguishers and have a dedicated fire assembly point, conduct regular fire safety drills

During decommissioning phase

(1) Occupational Safety and Health during the filling up of the water pan

- Provision of suitable protective cloth – PPE/C. The contractor should provide overalls, helmets, safety boots, earmuffs, nose masks and gloves to the workers.
- The contractor should ensure that there are no spills of petroleum, no smoking, no sources of ignition and proper use of warning signs in an explosive environment.
- All subproject workers should have insurance and workman's compensation.
- Provision of fully equipped first aid kit at the site.
- Ensure the availability of Emergency contacts for police, ambulance, etc.
- Emergency plans should be communicated and well understood.
- Train workers on first aid provision, and fire safety. Provide fire extinguishers and have a dedicated fire assembly point, conduct regular fire safety drills

b) Potential Negative Environmental Impacts and their mitigation measures

During the preparatory phase

- a) Loss of vegetation during site clearing and excavation of test pits

Mitigation measures

- Limit clearing of vegetation to facilitate access to and survey of site
- Control access to site
- Cover test pits and refill after sampling

- b) Loss of soils during excavation of test pit

Mitigation measures

- Stockpile soil for reuse

During construction phase

a) Loss of vegetation

The project site portion earmarked for construction of the proposed project is currently with some shrubs, herbs and some trees like the Acacia spp; therefore, construction activities will inevitably lead to minimal loss of vegetation.

Proposed mitigation and management measures

- Only minimal bush clearing should be allowed;
- Excavations at the site should be confined only to the necessary areas.
- The excavated materials removed for external disposal will require to be deposited on sites without the risk of being washed down during rains and where it will not compromise other land use activities in those areas; and
- Re-plant indigenous trees on the area that will be cleared to reduce soil erosion.

b) Noise and Vibration Generation

Continuous exposure to noise levels above 85 dB may cause hearing problems leading to occupational deafness. Noise and vibration produced during construction may have some temporary negative impacts to the immediate residents. These may include impairing verbal communication, temporary hearing problems/temporary threshold shift (TTS), noise annoyance or even interference of the normal behavior of domestic and wild animals near the site being excavated.

Proposed mitigation and management measures

- Provision of Personal Protective Equipment and clothing (PPE/C) including earmuffs for ear protection
- Restrict activities that create noise to daytime only.
- Ensure no running of vehicles engines when not in use
- Regular servicing and maintenance of vehicles and machinery

c) Increased Air Pollution

The potential sources of air pollution include traffic; excavator. This is a short-term negative impact and will last within the actual excavation period.

The proposed mitigation and management measures include:

- Locating haul roads, tips, and stockpiles away from sensitive receptors and consider prevailing wind directions.
- Use of water sprays and mists as dust suppression measures
- Carry out suitable maintenance on all machinery to be used to avoid the emission of noxious gases.
- Provision of suitable PPE/C such as nose masks to the workers and staff on site.
- Ensure vehicle engines are in good condition to reduce high levels of exhaust gases
- Sensitize drivers and machine operators to switch off engines when not in use.

d) Fuels and Lubricants Spills

Any oils and grease spillage by the earth moving machines and vehicles on the ground may seep into the ground and thus contaminate the soil.

Proposed mitigation and management measures are:

- Scooping the affected earth and disposing of contaminated material soundly.
- Proper handling, storage, and disposal of oils and greases and their wastes during construction.
- Proper maintenance of vehicles and other equipment (using petroleum products) to avoid fuels and lubricants spills at the sub-project site.
- Provide a maintenance and greasing yard away from the sub projects area, which is equipped with a sump to contain oil spills.

e) Increased Solid Waste

This may comprise of waste packets/bags of cement, bentonite, gravel packs and other bags with materials and equipment to be used during the implementation of the sub-project. There will be minimal excavation during the construction of the water pan.

The proposed mitigation and management measures are as follows:

- The Supervising Engineer will ensure that all solid wastes either paper, polythene bags, cement bags, gravel pack bags, excavated materials and remaining gravel packs are either recycled, reused, reduced or disposed of in the designated and at the approved dumpsite.
- Provision of the waste bins
- Assign a casual in daily collection of the wastes

- Engage a licensed waste handler to regularly collect and dispose the wastes
- Sensitize workers and communities on solid waste management

During operational phase

a) Surface Water Pollution

Water pollution may be from a number of sources. Pollution of the water could make the water unsuitable for the proposed use (livestock watering and micro irrigation) in the sub project. The causes of water pollution include;

- Watering of animals directly from the water pan (which will not be a problem in this sub project as the water pan will have watering points (troughs) for people and livestock, gated perimeter fence as per the designs).
- Use of chemical substances for plant protection, herbicides, pesticides, and growth regulators in the project area. This may be washed in the water pan by rainfall runoff,
- Destruction of the water pan catchment through farming and other human activities

The potential mitigation measures.

- The water pan designs has included livestock water troughs and drawing point for people
- Securing the water pan by fencing and having only one entrance with a gate,
- Proper handling and management of oil spills by the contractor and
- Conservation and management of the catchment area of the water pan

b) Soil Erosion

Concentration of many livestock in the project area as they come for watering at the pan will result in soil erosion due to the tramping of the ground by the animals as the soil becomes loose. Livestock overgrazing in the area during watering will also result in soil erosion. Bare ground such as the water pan wall/embankment is also open to soil erosion.

The proposed mitigation measure

- Proper compaction of soil during construction
- Control of livestock number in the vicinity of the pan (avail alternative watering point)
- Sensitization of farmers on appropriate soil erosion control measure
- Growing of grass on the embankment and around the pan and in the neighboring farms
- Establishment of community tree nursery
- Growing of trees by the community
- Construction of gabions
- Digging trenches and cut off drains to channel runoff into the river
- A storm water management plan that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention with graduated outlet control structures will be designed
- Proper planning of site excavation works such that a section is completed and rehabilitated before another section begins

c) Siltation of the water pan

The erosion of the inlet water course and the degradation of the water pan catchment will result in the siltation of the water pan resulting in increased water turbidity and reduced volume of the pan.

The proposed mitigation measure.

- Construction of check barriers along the inlet water course
- Protection and conservation of the water pan catchment through revegetation with indigenous trees and grass
- Sensitization of community on maintenance of the silt traps
- Regular maintenance of the silt traps

d) Breaking of Water pan wall

During the operation phase unprecedented above normal rains over a longer period which has been the case due to climate change effects and/or damage to the water pan walls and a lack of maintenance could result in the pan walls breaking and suddenly discharging its water. The outcome may be destruction of property, land degradation and risk to people

Mitigation and management measure

- Monitoring and assessment of the water pan walls and project site particularly before the onset of the rains and as the rains progress.
- Environmental Audit for the water pan annually as required by NEMA.
- Train the project management committee (PMC) and the local administration on scouting which will lead to early detection and responding to any risk situation/establish ER team
- Develop Emergency Response Plan
- Act upon the findings from scouting

During decommissioning phase

a) Loss of vegetation/biodiversity

Mitigation and management measure

- Avoiding destruction of vegetation.
- Re-plant indigenous trees and landscaping

b) Increased Noise and Vibration Generation, though it will be confined to workers on site since the village is far away

Mitigation and management measure

- Provision of Personal Protective Equipment and clothing (PPE/C) including earmuffs for ear protection
- Restrict activities that create noise to daytime only.
- Ensure no running of vehicles engines when not in use
- Regular servicing and maintenance of vehicles and machinery.
- Avoid driving vehicles through settlements where possible.
- Notification of communities/settlements about the noise levels that may be created during the decommissioning phase due to heavy machinery use.
- Provide site personnel with necessary environmental training that aims at reducing noise caused by project activities

c) Decrease in Air Quality

Mitigation and management measure

- Locating haul roads, tips, and stockpiles away from sensitive receptors and consider prevailing wind directions.

- Use of water sprays and mists as dust suppression measures
 - Carry out suitable maintenance on all machinery to be used to avoid the emission of noxious gases.
 - Provision of suitable PPE/C such as nose masks to the workers and staff on site.
 - Ensure vehicle engines are in good condition to reduce high levels of exhaust gases
 - Sensitize drivers and machine operators to switch off engines when not in use.
- d) Fuels and Lubricants Spills from the machinery and vehicles may contaminate the environment**

Mitigation and management measure

- Scooping the affected earth and disposing of contaminated material soundly.
- Proper handling, storage, and disposal of oils and greases and their wastes during construction.
- Proper maintenance of vehicles and other equipment (using petroleum products) to avoid fuels and lubricants spills at the sub-project site.
- Provide a maintenance and greasing yard away from the sub projects area, which is equip with a sump to contain oil spills

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

6.1 Introduction

The Environmental and social Management & Monitoring plan (ESM&MP) outlines all the proposed mitigation measures for addressing the identified adverse environmental and social impacts as well as a monitoring program for parameters that indicate if mitigation was working for each of the identified impacts. Already mitigation measures have been proposed in the section

above and the proponent will monitor how well the mitigation measures have been implemented and if they were working in redressing identified impacts.

The table below is the core of this ESM&MP for the project. In general, the table outlines Environmental/Social Impact aspect, Proposed Mitigation and Aspects for Monitoring, the risk levels, Responsibility for intervention and monitoring during design, construction and defects liability period, Responsibility for mitigation, monitoring and/or maintenance after defects liability period, Recommended frequency of monitoring, Amount in Kenyan shillings.

6.2 Potential Negative Social Impact Management and Monitoring Plan (ESIMMoP)

Table 8. ES MMP (Social Impacts Management and Monitoring Plan)

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
During Preparatory phase						
Social discord and conflict	<ul style="list-style-type: none"> - Detailed stakeholder analysis - Comprehensive stakeholder and community consultation and disclosure - Community representation in project implementation structures (if appropriate) - Establishment and disclosure of grievance mechanisms. 	<ul style="list-style-type: none"> - Number of stakeholders - Approvals from NEMA and WRA - Community representatives - GM in place 	<ul style="list-style-type: none"> - Approval documents - Analysis reports 	<ul style="list-style-type: none"> - Beneficiaries CESSCO PMC 	At the onset of the project	-
During Construction phase						
Labor dispute	<ul style="list-style-type: none"> - Casual and unskilled labour to be sourced from the community - Special groups to be considered in hiring, e.g. widows to be considered to undertake manual labour. - Opportunities at the site to be disclosed to the community - Institute grievance redress mechanism to address any labour dispute anticipated during the construction phase. 	<ul style="list-style-type: none"> - No. of local community employed - No. of special 	<ul style="list-style-type: none"> - PayRoll - Grievance Redress Mechanism-GRM (form) 	Contractors Proponent	Inspection of the payroll at the onset of the construction	20,000
Spread of HIV/AIDs	<ul style="list-style-type: none"> - Dissemination of information and awareness creation on HIV/Aids and STIs shall be an integral component of the project - The affected persons shall not be victimized or traumatized - A mechanism for monitoring HIV/Aids and STIs shall be established. - The contractor shall provide protection information and equipment (condom) at the site - Guidance, counselling and support shall be provided to the victims on management of the disease 	<ul style="list-style-type: none"> - HIV/STI Messages disseminated - No. of affected persons and guided - No. of protection provided to the workers and community 	<ul style="list-style-type: none"> - Pamphlets, flyers - Health records of affected individuals - Records on the distribution of the protectives (condoms) - Guiding and counselling report 	<ul style="list-style-type: none"> - Department of health officials (community health workers) 	At the beginning of construction	10,000

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
Influx of workers	<ul style="list-style-type: none"> - The community to be sensitized on measures to prevent infection of COVID-19. - Install hand washing equipment at site for the prevention of the spread of COVID 19 - Community members to be trained on interacting with the workers at the site - Provision of PPEs and adequate water or sanitizers to community members 	<ul style="list-style-type: none"> - No. of community sensitized - PPE(face masks, sanitizers) - No. of hand washing equipment installed 	<ul style="list-style-type: none"> - Reports on community sensitization and provision of PPEs - Health and Safety Protocols as per March 14, 2020- Occupational safety and health advisory on coronavirus (COVID-19), CDC's Coronavirus Disease Site and WHO Getting your Workplace Ready for COVID-19 to prevent COVID-19 contamination, infection and transmission. 	Department of health officials (community health workers)	Examination, during the construction period	40,000
Gender Based Violence (GBV) by construction workers	<ul style="list-style-type: none"> - Capacity building and awareness of the community on GBV - Emphasize prevention and minimal harm to women and girls. Adopt risk-based approaches that aim to identify key risks of SEA and undertake measures to prevent or minimize harm. - Build on existing local knowledge. Engage the community partners, local leaders, civil society organizations, gender and child advocates and mechanisms for support throughout the project cycle. - 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 	<ul style="list-style-type: none"> - Community members (girls/women) capacity built - Projects reviewed on GBV risk at the community level - Specific plan on mitigating GBV - Referral mechanism in place 	<ul style="list-style-type: none"> - Reports - Specific Plans on GBV 	- KSCAP officials, contractor	Examination and observation During the construction period	20,000

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	community level is reported related to project implementation					
Sexual exploitation and abuse (SEA) by construction workers	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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. - Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management. - Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights. - Management and Coordination: including integration of SEA in job descriptions, employments contracts, 	<ul style="list-style-type: none"> - SEA plan in place - 	<ul style="list-style-type: none"> - SEA Plan, - World Bank’s Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018) 	<ul style="list-style-type: none"> - KSCAP officials, contractor 	<ul style="list-style-type: none"> - Scrutiny of the SEA plan during the construction period 	47,000

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	performance appraisal systems, etc.; development of contract policies related to SEA, including whistleblower 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					
Occupational Safety and Health	<ul style="list-style-type: none"> - Provision of suitable protective gear – PPE/C. The contractor should provide overalls, helmets, safety boots, earmuffs, nose masks and gloves to the workers. - The contractor should ensure that there are no spills of petroleum, no smoking, no sources of ignition and proper use of warning signs in an explosive environment. - All subproject workers should have insurance and workman's compensation. - Provision of fully equipped first aid kit at the site. - Ensure the availability of Emergency contacts for police, ambulance, etc. - Emergency plans should be communicated and well understood. - Train workers on first aid provision, and fire safety. Provide fire extinguishers and have a dedicated fire assembly point, conduct regular fire safety drills 	<ul style="list-style-type: none"> - No. of PPE/C - WIBA in place - Presence of first aid kit. - Emergency contact availed - Emergency plan in place - No. of workers trained - 	<ul style="list-style-type: none"> - List of PPE/C - WIBA document - Reports on OSH 	- KSCAP officials, contractor	Checkups and examinations during the construction period	60,000
During Operational phase						
Inequity issues on water resource accessibility if suitable measures are not put in place, especially on VMGs	<ul style="list-style-type: none"> - Facilitate formation of project management committee to make sure water resource is equitably accessed by all community members including the VMGs 	<ul style="list-style-type: none"> - No. of community members including VMGs accessing water - Amount of water rationed in liters 	<ul style="list-style-type: none"> - List of beneficiaries - Records showing water usage and water trucked 	- Project Management committee or Water Users association	Examination Frequency. On weekly basis	5,000 per week 15,000 for water trucking

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	<ul style="list-style-type: none"> - Rationing of water during dry season to ensure equal distribution among the community members - In case of shortage, community through the local administration to liaise with department of water for water trucking - 	<ul style="list-style-type: none"> - Liters of water trucked during the dry season 		<ul style="list-style-type: none"> - Department of Water Wajir county 		
Social conflict/community disputes over the water resources may occur, especially during the dry season when water levels dwindle in the water pan.	<ul style="list-style-type: none"> - Establish grievance redress mechanism (GRM) to address any labour dispute anticipated during the construction phase. - Create a project management committee (PMC) to oversee activities at the water pan. - Involve all community members in any discussions on the use of the water pan. - Community to be trained on the utilization of the water efficiently and on matters of peace. 	<ul style="list-style-type: none"> - Availability of GRM - PMC established - Community members trained 	<ul style="list-style-type: none"> - GRM records - By-laws for the PMC - List of PMC members - Training materials available 	<ul style="list-style-type: none"> - KSCAP Wajir county officials 	<ul style="list-style-type: none"> Inspection and observation Frq. Routinely 	10,000 a week
Potential water borne disease outbreak, like typhoid, malaria, cholera	<ul style="list-style-type: none"> - Possibility to Introduce fish fingerlings in the water pan in collaboration with the fisheries department that could consume the mosquito larva thus controlling them. - Sensitize the community on malaria prevention through use of mosquito nets, local spraying and bush clearing near households - The proponent sensitize the community on water purification methods 	<ul style="list-style-type: none"> - Type of fish introduced - Number of community members trained and sensitized - Type and amount of water purifiers provided the community - 	<ul style="list-style-type: none"> - Reports - Training and sensitization documents 	<ul style="list-style-type: none"> - KSCAP Wajir county officials 	<ul style="list-style-type: none"> Inspection of weekly basis 	30,000
Drowning risks in the water pan	<ul style="list-style-type: none"> - The community be sensitized on the potential risk of drowning - The gate to be always locked with a padlock - Involvement of the whole community members in ensuring that the perimeter fence is maintained and not destroyed (encourage community policing). 	<ul style="list-style-type: none"> - Number of community member sensitized - Gate in place - Fence maintained 	<ul style="list-style-type: none"> - Reports 	<ul style="list-style-type: none"> - KSCAP Wajir county officials 	<ul style="list-style-type: none"> Surveillance of the water pan on daily basis 	10,000
During Decommissioning Phase						

Identified Social Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
Occupational Safety and Health during the filling up of the water pan	<ul style="list-style-type: none"> - Provision of suitable protective gear – PPE/C. The contractor should provide overalls, helmets, safety boots, earmuffs, nose masks and gloves to the workers. - The contractor should ensure that there are no spills of petroleum, no smoking, no sources of ignition and proper use of warning signs in an explosive environment. - All subproject workers should have insurance and workmen’s compensation. - Provision of fully equipped first aid kit at the site. - Ensure the availability of Emergency contacts for police, ambulance, etc. - Emergency plans should be communicated and well understood. - Train workers on first aid provision, and fire safety. Provide fire extinguishers and have a dedicated fire assembly point, conduct regular fire safety drills 	<ul style="list-style-type: none"> - No. of PPE/C - WIBA in place - Presence of first aid kit. - Emergency contact availed - Emergency plan in place - No. of workers trained 	<ul style="list-style-type: none"> - List of PPE/C - WIBA document - Reports on OSH 	KSCAP officials, contractor	Checkups and examinations during the construction period	50,000
Totals						73,000

6.3 Potential Negative Environmental Impact Management and Monitoring Plan

Table 9. ESMP (Environmental Impact Management and Monitoring Plan)

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
During the Preparatory phase						
Loss of vegetation during site clearing and excavation of test pits	<ul style="list-style-type: none"> - Limit clearing of vegetation to facilitate access to and survey of site - Control access to site - Cover test pits and refill after sampling - Stockpile soil for reuse 	<ul style="list-style-type: none"> - Number of trees planted - Type of trees planted - Amount of soils excavated and re-used 	- Reports and records	- NEMA CESSCO	At the onset of the project	-
Loss of soils during excavation of test pit						
During Construction Phase						

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
Loss of vegetation/biodiversity	<ul style="list-style-type: none"> Minimal bush clearing should be allowed only at designated sites for construction. Excavations at the site should be confined only to the necessary areas. The excavated materials removed for external disposal will require to be deposited on sites without the risk of being washed down during rains and where it will not compromise other land use activities in those areas; and Re-plant indigenous trees on the area that will be cleared to reduce soil erosion. 	<ul style="list-style-type: none"> Number of trees planted Type of trees planted 	<ul style="list-style-type: none"> Reports and records 	Contractor and PMC	Inspection and examination Freq. at the beginning of the project	40,000
Increased Noise and Vibration Generation, though it will be confined to workers on site since the village is far away	<ul style="list-style-type: none"> Provision of Personal Protective Equipment and clothing (PPE/C) including earmuffs for ear protection Restrict activities that create noise to daytime only. Ensure no running of vehicles engines when not in use Regular servicing and maintenance of vehicles and machinery. Avoid driving construction vehicles through settlements where possible. Notification of communities/settlements about the noise levels that may be created during the construction phase due to heavy machinery use. Provide site personnel with necessary environmental training that aims at reducing noise caused by Project activities 	<ul style="list-style-type: none"> No. of PPE provided to the workers Vehicles and machineries serviced and maintained Messages to the community No. of trainings 	<ul style="list-style-type: none"> Lists of the PPEs Maintenance and servicing log book Pamphlet, flyers Training materials 	Contractor, PMC and KSCAP Wajir staff	Scrutiny of the documents Freq. weekly	20,000
Decrease in Air Quality	<ul style="list-style-type: none"> Locating haul roads, tips, and stockpiles away from sensitive receptors and consider prevailing wind directions. Use of water sprays and mists as dust suppression measures Carry out suitable maintenance on all machinery to be used to avoid the emission of noxious gases. 	<ul style="list-style-type: none"> Amount of water used in dust suppression Machinery and vehicles maintained and serviced 	<ul style="list-style-type: none"> Report and records on the activities Maintenance and servicing log book 	Contractor, KSCAP Wajir staff	Inspection. Freq. routinely	10,000

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	<ul style="list-style-type: none"> ● Provision of suitable PPE/C such as nose masks to the workers and staff on site. ● Ensure vehicle engines are in good condition to reduce high levels of exhaust gases ● Sensitize drivers and machine operators to switch off engines when not in use. 	- No. of drivers sensitized	- Training materials available			
Fuels and Lubricants Spills from the machinery and vehicles may contaminate the environment	<ul style="list-style-type: none"> ● Scooping the affected earth and disposing of contaminated material soundly. ● Proper handling, storage, and disposal of oils and greases and their wastes during construction. ● Proper maintenance of vehicles and other equipment (using petroleum products) to avoid fuels and lubricants spills at the sub-project site. ● Provide a maintenance and greasing yard away from the sub projects area, which is equip with a sump to contain oil spills 	<ul style="list-style-type: none"> - Machinery and vehicles maintained and serviced - Maintenance and greasing yard away from the site 	<ul style="list-style-type: none"> - Report and records on the activities - Maintenance and servicing log book 	Contractor, KSCAP Wajir staff	Observation. Freq. routinely	15,000
Increased Solid Waste	<ul style="list-style-type: none"> ● The Supervising Engineer/CESSCO will ensure that all solid wastes either paper, polythene bags, cement bags, gravel pack bags, excavated materials and remaining gravel packs are either recycled, reused, reduced or disposed of in the designated and at the approved dumpsite. ● Provision of the waste bins/receptacles ● Assign a casual in daily collection of the wastes ● Engage a licensed waste handler to regularly collect and dispose the wastes ● Sensitize workers and communities on solid waste management 	<ul style="list-style-type: none"> - Type of waste generated - Presences of receptacles/bin - Casual worker employed for waste collection - No. of community members sensitized 	<ul style="list-style-type: none"> - Records and reports - Pay roll for the casual worker - Sensitizing materials 	Contractor, KSCAP Wajir staff Department of water engineers/CESSCO	Inspection Freq. routinely during this phase	10,000
During Operational Phase						0
Surface Water Pollution	<ul style="list-style-type: none"> ● The water pan designs has included livestock water troughs and drawing point for people 	<ul style="list-style-type: none"> - Livestock water trough - Fence in place 	<ul style="list-style-type: none"> - Designs - Records 	Contractor, KSCAP Wajir staff	Assessment	50,000

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	<ul style="list-style-type: none"> ● Securing the water pan by fencing and having only one entrance with a gate, ● Proper handling and management of oil spills by the contractor and ● Conservation and management of the catchment area of the water pan. 	<ul style="list-style-type: none"> - Amount of oil spills - Catchment area in place 		Department of water engineers/CESSCO	Freq. routinely during this phase	
Soil Erosion	<ul style="list-style-type: none"> ● Proper compaction of soil during construction ● Control of livestock number in the vicinity of the pan (avail alternative watering point) ● Sensitization of farmers on appropriate soil erosion control measure ● Growing of grass on the embankment and around the pan and in the neighboring farms ● Establishment of community tree nursery ● Growing of trees by the community ● Construction of gabions ● Digging trenches and cut off drains to channel runoff into the river ● A storm water management plan that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention with graduated outlet control structures will be design ● Proper planning of site excavation works such that a section is completed and rehabilitated before another section begins 	<ul style="list-style-type: none"> - Soil erosion measures in place - No. of livestock controlled - Grass grown on the embankment - Trees planted - Nursery bed established 	- Records and reports	Contractor, KSCAP Wajir staff Department of water engineers/CESSCO	Observation Freq. Quarterly and during rainy season	60,000
Siltation of the water pan	<ul style="list-style-type: none"> ● Construction of check barriers along the inlet water course ● Protection and conservation of the water pan catchment through revegetation with indigenous trees and grass ● Sensitization of community on maintenance of the silt traps ● Regular maintenance of the silt traps 	<ul style="list-style-type: none"> - Check barriers in place - Conserved catchment areas - Community and PMC sensitized - Maintained silt trap 	<ul style="list-style-type: none"> - Designs - Records - Training material 	Contractor, KSCAP Wajir staff Department of water engineers/CESSCO	Examination and observation Freq. in six months' time	200,000

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
Breaking of Water pan wall leading to flooding	<ul style="list-style-type: none"> Monitoring and assessment of the water pan walls and project site particularly before the onset of the rains and as the rains progress. Environmental Audit for the water pan annually as required by NEMA. Train the project management committee (PMC) and the local administration on scouting which will lead to early detection and responding to any risk situation/establish ER team Develop Emergency Response Plan Act upon the findings from scouting 	<ul style="list-style-type: none"> Any broken water pan walls EA PMC trained Emergency plan in place Scouts available 	<ul style="list-style-type: none"> Reports Environmental audit Training materials 	Contractor, KSCAP Wajir staff Department of water engineers/CESSCO	Examination and observation. Freq. Annually for EA and Routinely	50,000
During Decommissioning phase						0
Loss of vegetation/biodiversity	<ul style="list-style-type: none"> Avoiding destruction of vegetation. Re-plant indigenous trees and landscaping 	<ul style="list-style-type: none"> Number of trees planted Type of trees planted 	Reports and records	Contractor and PMC	Inspection and examination Freq. at the beginning of the project	10,000
Increased Noise and Vibration Generation, though it will be confined to workers on site since the village is far away	<ul style="list-style-type: none"> Provision of Personal Protective Equipment and clothing (PPE/C) including earmuffs for ear protection Restrict activities that create noise to daytime only. Ensure no running of vehicles engines when not in use Regular servicing and maintenance of vehicles and machinery. Avoid driving vehicles through settlements where possible. Notification of communities/settlements about the noise levels that may be created during the decommissioning phase due to heavy machinery use. Provide site personnel with necessary environmental training that aims at reducing noise caused by Project activities 	<ul style="list-style-type: none"> No. of PPE provided to the workers Vehicles and machineries serviced and maintained Messages to the community No. of trainings 	<ul style="list-style-type: none"> Lists of the PPEs Maintenance and servicing log book Pamphlet, flyers Training materials 	Contractor, PMC and KSCAP Wajir staff	Scrutiny of the documents Freq. weekly	4,000
Decrease in Air Quality	<ul style="list-style-type: none"> Locating haul roads, tips, and stockpiles away from sensitive receptors and consider prevailing wind directions. 	<ul style="list-style-type: none"> Amount of water used in dust suppression 	<ul style="list-style-type: none"> Report and records on the activities 	Contractor, KSCAP Wajir staff	Inspection. Freq. routinely	5,000

Identified Environmental Impact	Proposed Mitigation Measures	Monitoring indicators	Means of Verification	Responsible parties	Monitoring and Time frame	Amount in Ksh.
	<ul style="list-style-type: none"> ● Use of water sprays and mists as dust suppression measures ● Carry out suitable maintenance on all machinery to be used to avoid the emission of noxious gases. ● Provision of suitable PPE/C such as nose masks to the workers and staff on site. ● Ensure vehicle engines are in good condition to reduce high levels of exhaust gases ● Sensitize drivers and machine operators to switch off engines when not in use. 	<ul style="list-style-type: none"> - Machinery and vehicles maintained and serviced - No. of drivers sensitized 	<ul style="list-style-type: none"> - Maintenance and servicing log book - Training materials available 			
Fuels and Lubricants Spills from the machinery and vehicles may contaminate the environment	<ul style="list-style-type: none"> ● Scooping the affected earth and disposing of contaminated material soundly. ● Proper handling, storage, and disposal of oils and greases and their wastes during construction. ● Proper maintenance of vehicles and other equipment (using petroleum products) to avoid fuels and lubricants spills at the sub-project site. ● Provide a maintenance and greasing yard away from the sub projects area, which is equip with a sump to contain oil spills 	<ul style="list-style-type: none"> - Machinery and vehicles maintained and serviced - Maintenance and greasing yard away from the site 	<ul style="list-style-type: none"> - Report and records on the activities - Maintenance and servicing log book 	Contractor, KSCAP Wajir staff	Observation. Freq. routinely	3,000
Totals						477,000
Grand Total						550,000

6.4 Environmental and Social Monitoring Plan (ESMoP)

6.4.1.1 Introduction

The overall objective of environmental and social monitoring is to ensure that mitigation measures are implemented and that they are effective. The activities and indicators that have been recommended for monitoring are presented in the ESMoP. Environmental monitoring will be carried out to ensure that all construction activities comply and adhere to environmental provisions and standard specifications, so that all mitigation measures are implemented.

Monitoring should be undertaken at a number of levels. Firstly, the contractor at work sites should undertake it during pre-construction, construction, under the direction and guidance of the supervision consultant who is responsible for reporting the monitoring to the implementing agencies. It is not the contractor's responsibility to monitor compensation/Relocation issues. It is recommended that the contractor employ local full time qualified environmental inspectors for the duration of the contract. The following aspects will be subject to monitoring:

- Vegetation maintenance around water pan sites,
- Works safety elements, including a log of accidents
- Increased potential of Orote Water Pan;
- Preservation of species in synergy with the water pan;
- Level of coliform and other bacteria in the sampled water not to forget the ppm solid elements;
- Severity to water pan watershed encroachment;
- Number of prosecuted cases of livestock trespasses to the neighboring areas;
- Number of pan equipment vandalism and or illegal drawing points;
- Public safety;
- Malaria and other disease prevention and control;
- Livestock – wildlife - human conflicts management;
- Improved vegetation cover;
- Safety of equipment and property;
- Capacity building and skills improvement of water users;

Environmental monitoring is also an essential component of project implementation. It facilitates and ensures the follow-up of the implementation of the proposed mitigation measure, as they are required. It helps to anticipate possible environmental hazards and/or detect unpredicted impacts over time. Monitoring includes:

- Visual observations;
- Selection of environmental parameters at specific locations;
- Sampling and regular testing of these parameters.

Periodic ongoing monitoring will be required during the life of the water pan and the level can be determined once the water pan is operational.

6.4.1.2 Internal Monitoring

It is the responsibility of the proponent and community members to conduct regular internal monitoring of the project to verify the results of the contractor and to audit direct implementation of environmental mitigation measures contained in the ESMP and construction contract clauses for the project.

The objective of internal monitoring and audit will be:

- To find out any significant environmental hazards and their existing control systems in force.
- Meeting the legal requirements as stipulated in the Environmental Management & Coordination Act.

The responsibility for mitigation monitoring during the operation phase will lie with the Management committee . Environmental monitoring of the following parameters is recommended as a minimum for the project.

6.4.1.3 External Monitoring

Annual Environmental Audits to be conducted in line with NEMA requirements proponents provide NEMA with reports on environmental compliance during implementation as part of their annual progress reports and annual environmental auditing reports. Depending on the implementation status of environmentally sensitive project activities, NEMA will perform annual environmental reviews in which environmental concerns raised by the project will be reviewed alongside project implementation.

Table 10. Project Monitoring and Evaluation

Activity	Time Frame	The role of Beneficiary Community project management Committee, CPCU, NEMA, etc. in monitoring of ESMP	Mechanism of Monitoring ESMP implementation and frequency of monitoring
Internal monitoring	- Monthly	- Orote community members - Local authority (Chief) - KSCAP CESSCO - Water user's association	Inspection, observation and examination
Extremal monitoring	- Quarterly	- CESSCO and - Department of Health, Health officials - The CPCU - Directorate of water services	Checkups, inspection
Environmental Audit	- Annual	- NEMA experts, NEMA director and environment county office	Inspection and observation
Joint project evaluation	- Mid-year, Annual	- CESSCO and - Department of Health, Health officials - Directorate of water services	Examination and inspection
Reporting	- Monthly, Quarterly, Mid-year, Annual reports	- KSCAP CESSCO - Community members - Water user's association - Directorate of water services	Examination and observation
Inter-agency coordination meetings	- Monthly	- KSCAP CESSCO - Community members - Water user's association - Directorate of water services	Scrutiny of documentation, examination
Security meeting	- Weekly	- Local administration - KSCAP CESSCO - Community members - Water user's association - Directorate of water services	Checkups and examinations

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

In conclusion, the proposed project's objective is to excavate a water pan of **32,118m³** to enable the Orote and neighboring communities' access to adequate water for livestock watering, domestic use and sanitation purposes. The water could also be used for irrigation of kitchen garden vegetables to improve food and nutrition security and growing of fodder for livestock. Other positive impacts shall include creation of employment; improved water access and availability, reduced walking distance in search of water, control flooding, improve leadership skills of the community members among others as has been outlined within the report.

Before implementation of the project an environmental and social impact assessment has been undertaken in order to fulfill the legal requirements, obtain background biophysical information of the site, assess and predict the potential environmental and social impacts and associated mitigation measures during the project cycle, suggestions of possible alterations to the proposed design based on the assessment findings were made, public and stakeholder consultation and participation was undertaken, an environmental and social management plan (ESMP) and monitoring plan was developed. The project has been guided by World Bank safeguards regulations and EMCA 1999 (*amended 2015*). During the ESIA various stakeholders including VMGs were consulted, and their views incorporated in the report.

7.2 Recommendations

- Consult all relevant service providers and authorities (i.e. County Administrators, NEMA, amongst others) so as to harmonize the projects infrastructural and socio-economic developments with existing facilities.
- It is recommended that during the project cycle the proponent and contractor shall adhere to ESMP to minimize risks and delays that may occur. This shall also reduce the cost of the project in the long run. The proponent, contractor and the community shall also adhere to WB safeguard regulations and EMCA regulations in the implementation of the project. It is also recommended that the positive impacts that emanate from such activities shall be enhanced as much as possible.
- This project is recommended for approval by WB and the National Environment Management Authority (NEMA) for issuance of an ESIA license subject to annual environmental audits after operating for one year. It is recommended that an Environmental Audit (EA) be undertaken annually.

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14. Wajir County Development Integrated Plan (2018-2022). Ministry of Planning and National Development. Government printer, Nairobi
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ANNEXES

Annex 1: List of Participants








PARTICIPANT LIST

Activity: Public Participation and Stakeholder Consultation Date: 16/3/2021










S/NO	NAME	P/NO/ID/NO	GENGER	DESIGNATION	PHONE NO.	SIGN
1.	Siyat Madun Kassim	2011004338	M	CHIEF (1)	0729597212	
2.	Salatha Madun Ma	34861014	F	Community Member	-	
3.	Ladha Abdi Rashid	21560887	F	"		
4.	Alasa Mohamed Adan	30514975	F	"		
5.	Musdaf Ali Noor	29905007	M	"		
6.	Mohamed Yussuf		M	"		
7.	Ahmed Omar Issack	26851608	M	"	0725 859832	
8.	Omar Billow Ali		M	"		
9.	Hassan Dirs Ibrahim		M	"		




PARTICIPANT LIST

Activity: Public Participation and Stakeholder Consultation Date: 16/3/2021

S/NO	NAME	P/NO/ID/NO	GENGER	DESIGNATION	PHONE NO.	SIGN
10.	Amanah Kusow Hussein	29207320	F	Community member		
11.	Mushima Ahmed Sero	6824797	F	"		
12.	Khadija Kusow Hussein	35183650	F	"		
13.	Hasna Kusow Hussein	39213633	F	"		
14.	Fadhiga Kusow Hussein		F	P.M.C	0722519179	
15.	Salatha Abdi Muktar	26949973	F	Community member		
16.	Nuray Ygas Ibrahim	34307985	F	"		
17.	Muhammad Muktar	21900084	F	"	0726753591	
18.	Shawifa Barda Dajana	2106341	F	"	072749168	





PARTICIPANT LIST

Activity: Public Participation and Stakeholder Consultation Date: 16/3/2021

S/NO	NAME	P/NO/ID/NO	GENDER	DESIGNATION	PHONE NO.	SIGN
19.	SAID ABDILLE ABDI	3920460	M	Community member	0728056681	
20.	Abdi Muktar Barow	2106076	M	"	0759285668	A B O I
21.	Musa Garad Adan	25975342	M	P.M.C		
22.	Elama Osman Hashim	22937468	F	P.M.C	0706105123	
23.	Shalley Mumin Hussein		F	Community member		
24.	Fatuma Husun Abdulle		F	"		
25.	Adia Shalle Farah		F	"		
26.	Shukria Billaw Gurey	22935995	F	"		
27.	Abdullahi Abdi Dakan	2108226	M	"	0740553675	ABDI



OROTE



PARTICIPANTS LIST

ACTIVITY: Public Participation & Stakeholder Consultation for the proposed excavation of Orote water pan DATE: 16/3/2021

S/NO	NAME	P/NO/ID NO.	GENDER	ORGANIZATION	PHONE NO.	SIGN
	ADAN ABDELLAH BARAN	21226929	M	P.M.C-CHAIRMAN	07117383764	
	Said Abdi Biis	39072120	M	IMAM	0707570584	
	MOHAMMED ABAN ABDELLAH	35167291	M	Community member	0721914317	MOHAMED
	MOHAMMED HASSAN BIIS	30516372	M	"		
	NOOR ABBI OSMAN	25912564	M	"	071936653	
	IBRAHIM MOHAMMED	9746277	M	"	0702292543	
	AHMED MOHAMMED A.	26267565	M	"	0797974009	
	ADAN GARAB ADAN	26055182	M	"	0728619740	A. D A N
	MOHAMMED MUBA ALI	26075747	M	"	0111441279	
	SURAI ABDILLE FARAH	22937597	F	"	072570260	
	FALIBA ALI NOOR	29905034	F	"	0711567013	



Orote



PARTICIPANTS LIST

ACTIVITY: Public Participation & stakeholder Consultation For the Proposed DATE: 16/3/2021
Excavation of Orote Water Pan

S/NO	NAME	P/NO/ID NO.	GENDER	ORGANIZATION	PHONE NO.	SIGN
	OSMAN AEL NOOR	4885190	M	COMMUNITY MEMBER	0700602119	
	Roble Osman Ali	39467374	M	'	0768142760	ROBLA
	Khamis Hassan Jiis	26008426	M	'	0795923927	
	Yussuf Abdi Daqane	2109898	M	'	0706666041	
	Farah Bishov Habat	11781611	M	'	-	FARAH
	Mohamed Muktar	21900084	M	'	0726953391	MOHAMED
	Ibrahim Kanyare	27683284	M	'	0110046775	Ibrahim
	Ahat Abdi Alason	9248038	M	'	0711790312	AHATSON
	Abdulahi Ali Gwinda	22936083	M	'	0718674958	AALI
	Rashid Mohamed Gedi	25977574	M	'	0723842659	
	Hussein OSMAN	24443097	M	'	0759080350	HUSSEIN

Annex 2: Consent for land donations,



THE PRESIDENCY

MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Telegrams "DSTRUCTOR",.....
Telephone:.....
E-mail.....
When replying please quote
Ref. No.
and date

OFFICE OF THE CHIEF
Lakolig South LOCATION
P.O. Box *17*
County Commission, CLOAS
17 March 2021

To
Whom It May Concern

This is to confirm the area by the name
Oroka under Lakolig South is under area of my jurisdiction,
therefore, the residents discussed and agreed that the purpose
of digging the dam at Oroka Village Village; the
land is for the community, no one is claiming
individual ownership, the land is belong to a
community,

Any assistance given with the strength of this
letter is highly appreciated.

Yours faithfully
[Signature]
17 March 2021

resilience to climate change risks in targeted small holder farming and pastoral communities in Kenya, and in the event of an eligible crisis/emergency, to provide immediate and effective response". He explained KCSAP implementing wards and area where they give grants including the proposed water pan. Lastly he requested the participants not to shy away their views and concerns as they are critical in generating the ESIA report.

MINUTE 3 16/03/2021: ADDRESS FROM LEAD EXPERT, MR. ELIJAH LWEVO

Mr. Elijah, the lead ESIA expert, explained to the community members that it was a legal requirement that their project undergo an ESIA so as to establish whether it may have any environmental and social impacts. He stated that he would like to know from the community how the project was conceived, their concerns, the positive impacts of the project, the negative impacts of the project and their mitigation and finally establish if there may be any opposition to the implementation of the project. gave a background information about the project, the ESIA process and its role an

Some of the comments, recommendation and questions from the participants and their response from the consultants/ESIA experts are presented in the table below.

Participant's Names	Gender	Comments/Question/recommendation & suggestions	Responses from the ESIA Experts/ Project/team Proponents
Musa Garad Adan	M	Mr. Musa who is a residents of the village wanted to know when the proposed project will start.	Mr Muhumed from KCSAP responded and said that the project has already started with the preliminary works ongoing. After obtaining clearance from the world Bank, the ESIA report will be taken to Nema for licensing. That will be followed by advertising of the project and the tendering process and then commencement of the construction works.
Elama Osman Ibrahim	F	Mrs. Elama Osman expressed her excitement on the project and wanted clarification whether, the Management Committee that was formed during the site identification will remain in office even after the proposed Project starts operating	Mr Muhumed, from KSCAP, responded to Mrs. Elama and said that the decision of the committees lies with the Orote Community with the help of the chief. They can remain or you can change if deemed necessary.
Shukria Billow	F	Mrs.Shukria Billow, wanted to know whether the proposed project will be fenced so that the	Muhumed from KCSAP, also responded to Mrs. Shukria concerns and he said that, the water pan will be

CHIEF
LAWLEY SONNET DECATO
P. O. BOX 25370, NAIROBI
DATE 16/03/2021

		children from the village do not drown into it.	fenced off so that children and even other animals don't get into to avoid the risk of drowning. In addition, the pan will be manned by a get keeper/watchman so as to avoid the risk of children drowning.
Mrs. Abdia Shalle Farah	F	Mrs. Abdia wanted to know whether the proposed project comes with troughs for livestock watering and raised the concern that the proposed project will not come with troughs it will lead to the contamination of the water as the animals will able to go in and drink from the pan and contaminate it with their waste.	In response to Mrs. Abdia Shalle Farah concerns Mr. Elijah who is the ESIA Expert said that the community's health and hygiene is a top priority and therefore, for the resident to enjoy clean and safe water the proposed water pan will have troughs that would be located approximately 80 to 100m away from the pan so that the waste of the animals don't find their way into the pan during rainy seasons and floods. He further added that, the Proposed project will also come with toilets that will be constructed. This is meant to maintain high level of hygiene in the surrounding area. Furthermore, he said the resident should take the responsibility of safeguarding the water pan as it remain their asset after it is completed.

Positive impacts

The following are some the positive impacts raised by the community

- The project will enhance access to relatively safe, clean water for the residence of Orote
- The distances traveled and time spent in search of water will be reduced hence the beneficiaries (especially women and children) using the energy and time on economically and socially viable activities for the families,
- Reducing water-borne diseases by providing improved water supply for domestic use.
- The local residents would benefit from cheap labour from unskilled jobs during the project construction phase. Employment of youths, women and the elderly either directly or indirectly to the project



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26/03/2021

Annex 4: Sample Questionnaires

Public participation questionnaire: Environmental impact assessment study for the (title of the project)

Proposed Construction of Orota Water Pan.

TO WHOM IT MAY CONCERN

Environmental impact assessment consultants would like to conduct an environmental and social impact assessment study for the proposed project.

The environmental impact assessment/audit regulations (2013) require that all the project listed in the second schedule of the environmental management and coordination act 1999 must undertake an EIA and submit the report in the national management authority (NEMA). As an important part of this exercise, consultations are held with the members of the immediate community, interested and affected parties, in order to obtain their views regarding the proposed project.

We therefore kindly, request you to provide us with your views/comments on this project. Your contribution will highly be appreciated.

1. Details of the respondent

Name of the respondent... George Omoti

Occupation... Sub-county Livestock Production Officer - Eldas

Address/phone no. (If any)... 0714 056 895

2. Do you support the implementation of this project? Yes No (tick one)

Do you have any reason for your answer above? Please state

I support the implementation of the project because water is highly necessary for the farmers to improve productivity. Harvesting of the rain water through Pan construction will also improve farmers resistance towards climate change.

3. Please state any positive/negative environmental and social impacts that you anticipate during construction and operational phase of this project.

a) Anticipated **positive impacts** during **construction of project**

- Locals will be employed. This job creation
- Business in the area will also improve during construction

Anticipated **negative impacts** during the **construction phase**

- Generation of solid waste
- Dust will also be emitted during construction

What would you propose as **measures to mitigate** the above **negative impacts**?

- Provision of waste receptacle at the construction site
- Regular sprinkling of water to contain the dust

b) Anticipated **positive impacts** during **operation of the project**

- locals will get access to safe drinking water for livestock and domestic use.
- Time and distance taken to access water will also be reduced.

Anticipated **negative impacts** during **operation of the project**

- Conflicts of water.
- Overgrazing around the project site.

What would you propose as measures to mitigate the above **negative impacts**?

- Project Management Committee to come up with by-laws to solve conflicts.
- Sensitizing the community about the danger of overgrazing

4. Give any relevant additional comments

The area has no permanent source of water thus this intervention is highly needed.

Signature of the respondent... 

Public participation questionnaire: Environmental impact assessment study for the (title of the project)

Proposed Construction of Orite Water Pan

TO WHOM IT MAY CONCERN

Environmental impact assessment consultants would like to conduct an environmental and social impact assessment study for the proposed project.

The environmental impact assessment/audit regulations (2013) require that all the project listed in the second schedule of the environmental management and coordination act 1999 must undertake on EIA and submit the report in the national management authority (NEMA). As an important part of this exercise, consultations are held with the members of the immediate community, interested and affected parties, in order to obtain their views regarding the proposed project.

We therefore kindly, request you to provide us with your views/comments on this project. Your contribution will highly be appreciated.

1. Details of the respondent

Name of the respondent

Occupation

Address/phone no. (If any)

Abdi Shalle Bare

Sub County Water Officer - Eldas

07 20 45 65 32

2. Do you support the implementation of this project? Yes No (tick one)

Do you have any reason for your answer above? Please state

The village has no other water source thus harvesting rain water through the Pan will improve community resistance to droughts

3. Please state any positive/negative environmental and social impacts that you anticipate during construction and operational phase of this project.

a) Anticipated **positive impacts** during **construction of project**

- Job Creation

- Business will also improve

Anticipated **negative impacts** during the **construction phase**

- Air Pollution through dust emission

- Loss of flora & fauna

What would you propose as measures to mitigate the above negative impacts?

- Contractor should sprinkle water regularly
- Revegetate the area after construction works.

b) Anticipated positive impacts during operation of the project

- = Water will be available at affordable price.
- More children will get opportunity to learn.

Anticipated negative impacts during

operation of the project

- Children might be drawn in the pan
- Conflicts because of the resource-use.

What would you propose as measures to mitigate the above negative impacts?

- fencing of the pan.
- Create by-laws that will govern on how the water will be used.

4. Give any relevant additional comments

The area relies on water trucking thus excavation of the water-pan is needed.

Signature of the respondent.....

Public participation questionnaire: Environmental impact assessment study for the (title of the project)

Orofe Water Pan

TO WHOM IT MAY CONCERN

Environmental impact assessment consultants would like to conduct an environmental and social impact assessment study for the proposed project.

The environmental impact assessment/audit regulations (2013) require that all the project listed in the second schedule of the environmental management and coordination act 1999 must undertake on EIA and submit the report in the national management authority (NEMA). As an important part of this exercise, consultations are held with the members of the immediate community, interested and affected parties, in order to obtain their views regarding the proposed project.

We therefore kindly, request you to provide us with your views/comments on this project. Your contribution will highly be appreciated.

1. Details of the respondent

Name of the respondent... SIYAT KASSIM IBRAHIM
Occupation CHIEF
Address/phone no. (If any)..... 0729 597 222

2. Do you support the implementation of this project? Yes No (tick one)

Do you have any reason for your answer above? Please state

I support the implementation of the Pan because the village has no permanent water source and they depend on water trucking.

3. Please state any positive/negative environmental and social impacts that you anticipate during construction and operational phase of this project.

a) Anticipated **positive impacts** during **construction of project**

1. Employment creation.
2. improve business in the area.

Anticipated **negative impacts** during the **construction phase**

- Dust emission
- might bring disease like cholera

What would you propose as measures to mitigate the above negative impacts?

- Sprinkle water
- wear mask

b) Anticipated positive impacts during operation of the project

- Availability of water for home and animals use
- water available at low cost

..... Anticipated negative impacts during
operation of the project

- children will drown
- Conflict over water

What would you propose as measures to mitigate the above negative impacts?

- fencing the Pan
- Resolve Conflict

4. Give any relevant additional comments

we as the community need the Pan, because
no other source and come at high cost.

Signature of the respondent..... *Sumuwa*

Public participation questionnaire: Environmental impact assessment study for the (title of the project)
Orote Water Pan

TO WHOM IT MAY CONCERN

Environmental impact assessment consultants would like to conduct an environmental and social impact assessment study for the proposed project.

The environmental impact assessment/audit regulations (2013) require that all the project listed in the second schedule of the environmental management and coordination act 1999 must undertake on EIA and submit the report in the national management authority (NEMA). As an important part of this exercise, consultations are held with the members of the immediate community, interested and affected parties, in order to obtain their views regarding the proposed project.

We therefore kindly, request you to provide us with your views/comments on this project. Your contribution will highly be appreciated.

1. Details of the respondent

Name of the respondent Farhiya Jelle Abdullahi
Occupation house wife
Address/phone no. (if any) 0722 519 179

2. Do you support the implementation of this project? Yes No (tick one)

Do you have any reason for your answer above? Please state
because our area does not have
other source

3. Please state any positive/negative environmental and social impacts that you anticipate during construction and operational phase of this project.

a) Anticipated **positive impacts** during construction of project

our youth will be employed
more people will come to buy
goods in our shops and kiosks

Anticipated **negative impacts** during the construction phase

There will be a lot of dust and
noise

What would you propose as **measures to mitigate** the above **negative impacts**?

Contractor to sprinkle walk regularly

b) Anticipated **positive impacts** during **operation of the project**

- Water will be affordable
- Little time taken to get water

Anticipated **negative impacts** during

operation of the project

- Influx of people and livestock
- Children may drown

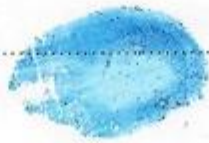
What would you propose as measures to mitigate the above **negative impacts**?

- fence the pan to avoid children drowning
- Local elders and chief to regulate influx of people & livestock

4. Give any relevant additional comments

We request expediation of construction works so that we get water during the long rains.

Signature of the respondent.....



Annex 5. Community Land Resolution and Agreement Form



Kenya Climate Smart Agriculture Project
Office of the County Project Coordinator – KCSAP Wajir.
P.O. Box 33-70100 Wajir.

COMMUNITY LAND RESOLUTION AND AGREEMENT FORM





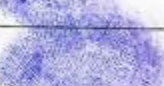
ITEM	DESCRIPTION
Project Name:	Kenya climate smart Agriculture Project.
Name of Investment:	Proposed excavation of Orote water pan
Project Location:	Orote Village, Lakole south location Lakole/Bosir ward, Sidos subcounty
GPS Coordinates:	LAT: 2.361042 LONG: 39.155997
Estimated cost of the investment:	KSH 19,806,070
Source of Funding:	IDA/WCG
Financial Year:	2021

TERMS OF THE AGREEMENT

1. We the residents/users of the investment area (specify) Orote Village in Lakole South Location discussed and agreed that, Orote Shall be site of the proposed Excavation of Orote Water Pan and that:
2. We all are aware of the Kenya Climate Smart Project and this proposed sub-project at Orote Village
3. We all are aware that the land set aside for the investment is community land and no one is claiming individual ownership because it belongs to all of us and negative impacts on particular individuals using the land will be addressed by the community, and no alternative claims will be made later on the land.
4. We all have no problem with the site of the investment and its conversion to public land.
5. We have all agreed unanimously that the project implementation should continue.
6. We will all allow other neighboring and cross-border communities access to the investment as agreed between elders of both communities.
7. We all shall strive to peacefully resolve any conflicts with other communities concerning the investment and that we would strive to peacefully co-exist and resolve any conflict arising out of the investment facility following due process provided by the laws of Kenya.
8. The land to be donated was identified in consultation with all residents and users of the land?
9. We all understand the likely impacts of proposed activities on donated land.
10. We all understand that the community could have refused this investment.
11. We all agreed to this investment and donation of the land without coercion, manipulation, or any form of pressure on the part of public or traditional authorities.
12. We all agreed that we not require any monetary or non-monetary benefits or incentives as a condition for the donation.
13. The land being donated will not reduce the remaining land area to a level below that required to maintain the livelihoods of occupiers and users of land at current levels and will not require the relocation of any household.
14. If any structure will be moved or any access to land be limited as a result of the subproject, the individual affected will be compensated so their livelihood will be unaffected.
15. The land is free of encumbrances or encroachment and is not claimed by any individual and its ownership is not contested.

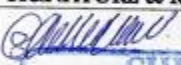

We have been designated by the community of Orote in Lakole South location, Lakole/Basi Ward

Confirm the above information to be true and that we have resolved to abide by ALL terms of this agreement. (Please attach minutes of community meeting, where the community agreed to the use and conversion of this land for this purpose).


S/NO.	NAME	VILLAGE/LOCATION	ID/NO.	SIGNATURE
1.	Farhiya Kusow Hussein	Orote	25896066	
2.	Saladha Maalin Ali	Orote	34851014	
3.	Ahmed Omar Issack	Orote	26951608	
4.	Musa Garad Adan	Orote	25975342	
5.	Elama Osman Ibrahim	Orote	22937468	

Witnessed on this 17th Day of March in the Year 2021 by:

1. Area Chief

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1	SIMAT MAALIM KASSIM	22431975	 


2. Ward Administrator

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1	Muhammad Abdinasir	26037157	


3. Community Land Registrar

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1			

4. County Government (Physical Planning Department)

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1	E. N. MUCHEU	21844692	 COUNTY PHYSICAL PLANNING P. O. BOX 385-70200, W. Date: 17/03/2021

5. Kenya Climate Smart Project , Coordinator

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1	ABDINOOR I. MUSA	21921762	 COUNTY PROJECT COORDINATOR KENYA CLIMATE PROJECT (KCSAP) P. O. BOX 33-70200, WAJIR. DATE: 17/03/2021

6. County Ministry Relevant to the project e.g. Water/Livestock Production etc.

S/NO.	NAME	ID/NO.	SIGNATURE & R /STAMP
1	SABDOW K-OMAR	0425757	 DIRECTOR OF AGRICULTURE WAJIR COUNTY P. O. BOX 33-70200, WAJIR Date:

Annex 6: Screening checklist

ENVIRONMENTAL AND SOCIAL SCREENING CHECK LIST

ESM Sub-projects Screening Checklist

(Sub-projects screening process by benefitting communities/Agencies)

Section A: Background information

Name of County: Wajir County

Name of CPCU /Researcher: Wajir County Project Coordination Unit

Sub-project location: Orote Village

Name of CBO/Institution: Postal Address:

Contact Person: Cell phone:

Sub-project name: excavation of Orote water pan

Estimated cost (Kshs.): Ksh 19,806,070

Approximate size of land area available for the sub-project: 10 acres

Objectives of the sub project: to harvest rain water for purposes of livestock and domestic use. Build community resilience to water challenges.

Activities/enterprises

undertaken: pan excavation
fencing of the water pan

How was the sub-project chosen?

The community identified the project during the PIED process. Department of Water prioritized the site after conducting a survey on water need assessment.

Expected sub project duration: 1 year

Section B: Environmental Issues

Will the sub-project:	Yes	No.
Create a risk of increased soil erosion?	✓	
Create a risk of increased deforestation?	✓	
Create a risk of increasing any other soil degradation soil degradation?		✓
Affect soil salinity and alkalinity?		✓
Divert the water resource from its natural course/location?		✓
Cause pollution of aquatic ecosystems by sedimentation and agro-chemicals, oil spillage, effluents, etc.?		✓
Introduce exotic plants or animals?		✓
Involve drainage of wetlands or other permanently flooded areas?		✓
Cause poor water drainage and increase the risk of water-related diseases such as malaria?	✓	
Reduce the quantity of water for the downstream users?		✓
Result in the lowering of groundwater level or depletion of groundwater?		✓
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?		✓
Reduce various types of livestock production?		✓
Affect any watershed?		✓
Focus on Biomass/Bio-fuel energy generation?		✓

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:	Yes	No
Displace people from their current settlement?		✓
Interfere with the normal health and safety of the worker/employee?		✓
Reduce the employment opportunities for the surrounding communities?		✓
Reduce settlement (no further area allocated to settlements)?		✓
Reduce income for the local communities?		✓
Increase insecurity due to introduction of the project?		✓
Increase exposure of the community to HIV/AIDS?		✓
Induce conflict?		✓
Have machinery and/or equipment installed for value addition?		✓
Introduce new practices and habits?	✓	
Lead to child delinquency (school drop-outs, child abuse, child labour, etc.?)		✓
Lead to gender disparity?		✓
Lead to poor diets?		✓

Lead to social evils (drug abuse, excessive alcohol consumption, crime, etc.)?		✓
--	--	---

Section D: Natural Habitats

Will the sub-project:	Yes	No
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species		✓
Adversely affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, etc.)?		✓
Affect the indigenous biodiversity (Flora and fauna)?	✓	
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly	✓	
Affect the aesthetic quality of the landscape?		✓
Reduce people's access to the pasture, water, public services or other resources that they depend on?		✓
Increase human-wildlife conflicts?	✓	
Agrochemical use		✓
Will the sub-project:		
Involve the use of pesticides or other agricultural chemicals, or increase existing use?		✓
Cause contamination of watercourses by chemicals and pesticides?		✓
Cause contamination of soil by agrochemicals and pesticides?		✓
Experience effluent and/or emissions discharge?		✓
Export produce? Involve annual inspections of the producers and unannounced inspections?		✓
Require scheduled chemical applications?		✓
Require chemical application even to areas distant away from the focus?		✓
Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)?		✓
Use irrigation system in its implementation?		✓

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

Section E: Pesticides and Agricultural Chemicals.

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

1) Pest Control practices

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

Yes No 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
N/A				

--	--	--	--	--

If No, WHY?

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

Application location: Yes..... No.....

Date of application: Yes..... No.....

Pesticide product trade name: Yes.....No.....

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

If No, WHY?

.....

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

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

(ii) 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 and 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..... *N/A*

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? *N/A*
 Yes.....No.....

f) If yes, list the negative effects: *N/A*

- (i).....
- (ii).....
- (iii).....
- (iv).....
- (v).....

(g) Do you use any kind of protective clothing while applying or handling pesticides? Yes No *N/A*
 Why?.....

h) If YES, what kind?

2. Knowledge of pesticide handling and storage (tick one in each row)

a) Do you read labels on the pesticide container before using? *N/A*

Sometimes Always Never

b) How often do you wear protective clothing and other accessories like nasal mask, eye goggles, *N/A*
 and boots when applying the pesticides?

Sometimes Always Never

c) Do you mix pesticides with your hands? *N/A*

Sometimes Always Never

d) Do you observe the pre-harvest waiting periods after applying the pesticides? *N/A*

Sometimes Always Never

e) After spraying, do you wait 12 hours before entering the field? *N/A*

Sometimes Always Never

f) Do you store pesticides in a secure, sound and well-ventilated location? *N/A*

Sometimes Always Never

g) Do you make a cocktail before applying the pesticides? (i.e., mix more than one chemical and *N/A*
 apply them at once?)

Sometimes Always Never

h) Where do you store your pesticides? *N/A*

Why do you store them there?

i) What do you do with your pesticide containers after they are empty?

j) Do you know of any beneficial insects (insects that eat harmful insects)? Yes.....No..... *N/A*

k) If yes, name them:

i)

ii)

iii)

3. Pesticides and Health *N/A*

Do you find that pesticide application is affecting the health of?

a) Persons regularly applying pesticides?

Sometimes Always Never

b) Persons working in fields sprayed with pesticides

Sometimes Always Never

c) Persons harvesting the produce

Sometimes Always Never

4. Options to Pesticides *N/A*

a) From your experience, are you aware of other methods for controlling insects diseases and/or weeds besides pesticides? Yes..... No.....

b) If yes, describe the practices:

i)

ii)

iii)

iv)

5. Information

a) What information do you think you need for improving your crop production and marketing? *N/A*

.....
.....
.....

6. Training *N/A*

a) Have you ever received any training on any of the following topics related to crop production?

Integrated Pest Management Yes..... No.....

No. of times/past yr.

b).Pesticide Usage Yes..... No.....

No. of times/past yr.

c).Pesticide Safety Yes..... No.....

No. of times/past yr.

d).Insect Identification Yes..... No.....

No. of times/past yr.

e).Disease Identification Yes..... No.....

No. of times/past yr.

f).Quality aspects of production Yes..... No.....

No. of times/past yr.....

7) Is there anything else that you want us to know about your crop production? *N/A*

.....
.....
.....
.....

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

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?	✓	
Members of these VMGs in the area who could benefit from the project?	✓	

Why do you store them there?

i) What do you do with your pesticide containers after they are empty?

j) Do you know of any beneficial insects (insects that eat harmful insects)? Yes.....No..... *N/A*

k) If yes, name them:

i)

ii)

iii)

3. Pesticides and Health *N/A*

Do you find that pesticide application is affecting the health of?

a) Persons regularly applying pesticides?

Sometimes Always Never

b) Persons working in fields sprayed with pesticides

Sometimes Always Never

c) Persons harvesting the produce

Sometimes Always Never

4. Options to Pesticides *N/A*

a) From your experience, are you aware of other methods for controlling insects diseases and/or weeds besides pesticides? Yes..... No.....

b) If yes, describe the practices:

i)

ii)

iii)

iv)

5. Information

a) What information do you think you need for improving your crop production and marketing? *N/A*

.....
.....
.....
6. Training N/A

a) Have you ever received any training on any of the following topics related to crop production?

Integrated Pest Management Yes..... No.....

No. of times/past yr.

b).Pesticide Usage Yes..... No.....

No. of times/past yr.

c).Pesticide Safety Yes..... No.....

No. of times/past yr.

d).Insect Identification Yes..... No.....

No. of times/past yr.

e).Disease Identification Yes..... No.....

No. of times/past yr.

f).Quality aspects of production Yes..... No.....

No. of times/past yr.....

7) Is there anything else that you want us to know about your crop production? N/A

.....
.....
.....
.....

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

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?	✓	
Members of these VMGs in the area who could benefit from the project?	✓	

VMGs livelihoods to be affected by the sub project?	✓
---	---

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

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

Section H: Proposed action

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

(iii) Recommended Course of Action

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

..... Please prepare summary
 Project Report for the proposed Pan

CPCU and County Director of Environment (CDE) will provide detailed guidance on mitigation measures as outlined in the ESMF; and Specific advice is required from CDE and 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 NPCU 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 ESIA's, 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 ESIA report at a public place accessible to project-affected groups and local NGOs/CSOs.

Completed by:

Name: Farhyia Jelle Abdallah

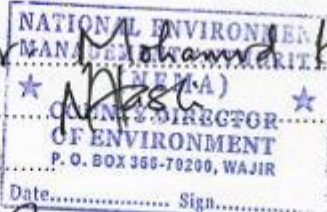
Position / Community: Project Management Committee member

Date: 15/3/2021

Field Appraisal Officer (CDE):

Dr. Muhammad Hashim Ali

Signature:



Date:

22/03/2021

Kindly prepare a Summary Project Report. (S.P.R) for the proposed project.

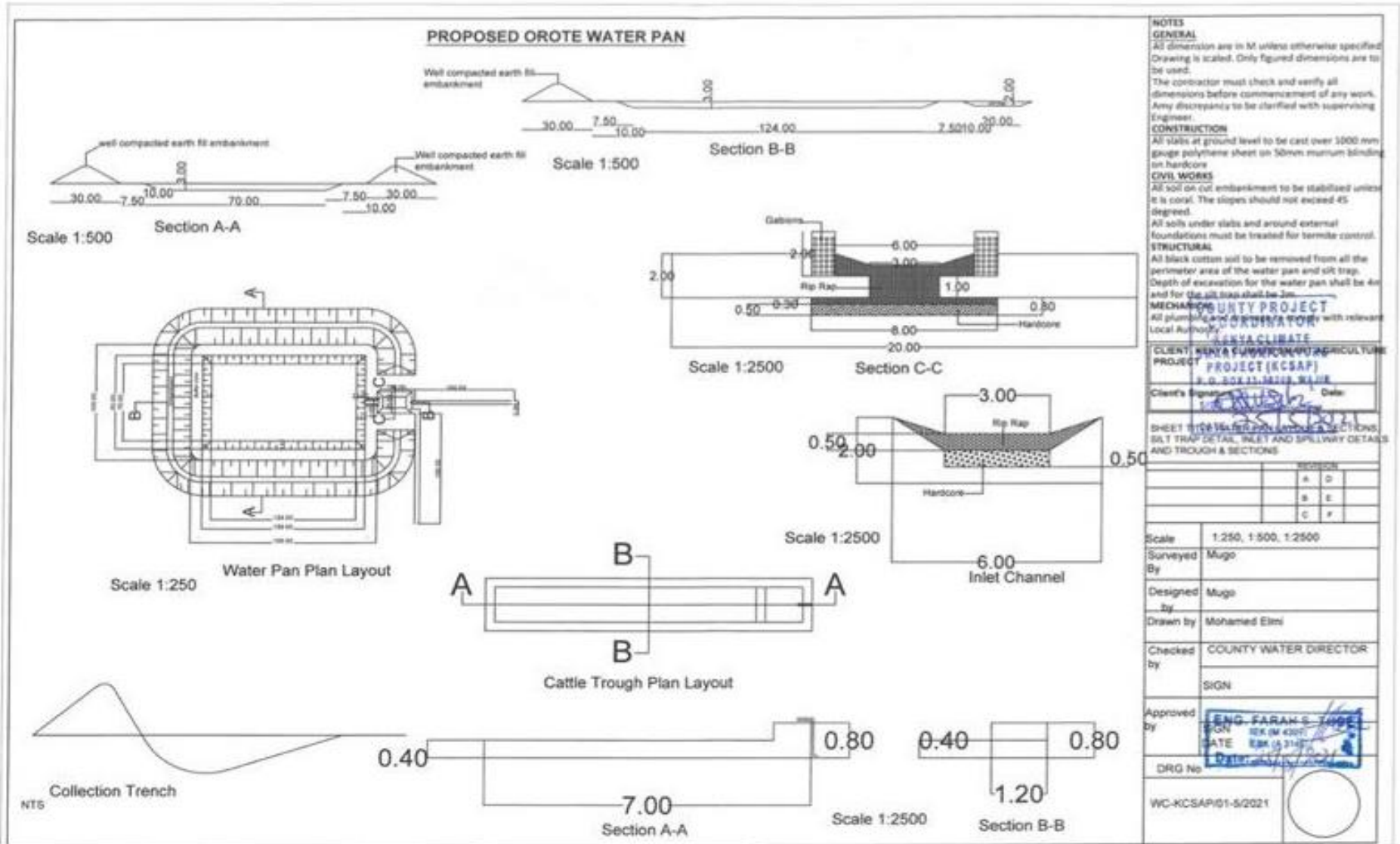
Annex 7: Pictures during SC and PP



Annex 8. Summary Bill of Quantities (BoQ)

DESCRIPTION	AMOUNT
Preliminaries	1,530,975.30
Construction of Water pan and silt trap	10,133,100.00
Construction of inlet and outlet channels	173,840.00
Perimeter Fence	2,441,440.00
Construction of Toilet facility	212,250.00
Installation of pipes, Tank, Stand & Pump	1,591,882.00
Construction of 2 water troughs	177,654.00
Sub total	16,261,141.30
Add 5% contingencies	813,057.07
Sub total	17,074,198.37
Add 16% VAT	2,731,871.74
Grand total	19,806,070.11

Annex 9. Architectural Designs and Layout



NOTES

GENERAL
All dimension are in M unless otherwise specified
Drawing is scaled. Only figured dimensions are to be used.
The contractor must check and verify all dimensions before commencement of any work. Any discrepancy to be clarified with supervising Engineer.

CONSTRUCTION
All slabs at ground level to be cast over 1000 mm gauge polythene sheet on 50mm murrum blinding on hardcore

CIVIL WORKS
All soil on cut embankment to be stabilized unless it is coral. The slopes should not exceed 45 degrees.
All soils under slabs and around external foundations must be treated for termite control.

STRUCTURAL
All black cotton soil to be removed from all the perimeter area of the water pan and silt trap. Depth of excavation for the water pan shall be 4m and for the silt trap shall be 2m.

MECHANICAL
All plumbing and electrical works to be done in accordance with relevant Local Authority.

CLIENT: KINA FARMERS AND AGRICULTURE PROJECT (KCSAP)
P.O. BOX 33, MATAI, WAJUKI

Client's Signature: _____ Date: _____

SHEET TITLE: WATER PAN AND SILT TRAP DETAILS, SILT TRAP DETAIL, INLET AND SPILLWAY DETAILS AND TROUGH & SECTIONS

NO	REVISIONS
A	D
B	E
C	F

Scale: 1:250, 1:500, 1:2500
 Surveyed By: Mugo
 Designed by: Mugo
 Drawn by: Mohamed Elmi
 Checked by: COUNTY WATER DIRECTOR
 SIGN: _____
 Approved By: **ENG. FARAH HANDE** (Stamp)
 DRG No: _____
 WC-KCSAP/01-5/2021

Annex 10: Copy of the Practicing License for the Lead Experts

FORM 7

(r.15(2))



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

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

License No : NEMA/EIA/ERPL/13657

Application Reference No: NEMA/EIA/EL/18145

M/S **Elijah Lwevo**
(individual or firm) of address

P.O. Box 321 - 70200, Wajir

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **6521**

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

Issued Date: **1/5/2021**

Expiry Date: **12/31/2021**


Signature.....
(Seal)

**Director General
The National Environment Management
Authority**

