



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

**FOR
THE PROPOSED BARNGOROR/KAPSITII (KIPSAKYAT) WATER CATCHMENT
CONSERVATION PROJECT IN KAPSITII VILLAGE, KAPLELARTET WARD, SOIN-
SIGOWET SUB-COUNTY IN KERICHO COUNTY**

GPS COORDINATES: 0°19'44.16''S 35°2'21.61''E



PROJECT PROPONENT

**KIPSAKYAT CATCHMENT PROTECTION COMMITTEE
KERICHO**

PROJECT SPONSOR

**GOVERNMENT OF KENYA/COUNTY GOVERNMENT OF KERICHO
WITH SUPPORT FROM THE WORLD BANK**



January, 2022

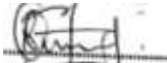
CERTIFICATION
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SUMMERY PROJECT
REPORT

This Environmental and Social Impact Assessment Summery Project Report (ESIA) for the proposed Bargoror/Kapsitii(Kipsakyat) Water Catchment Conservation Project at LR. No. KER/Kaplel/638 in Kapsitii Village, Kaplelartet ward, Soin Sigowet Sub County, Kericho County has been prepared in accordance with NEMA regulations under the guidance and supervision of a registered NEMA Lead Expert. It meets statutory provisions stipulated in EMCA 2015, the Legal Notice No. 32 and the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019. We hereby certify that the details herein are correct and true to the best of our knowledge.

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ACKNOWLEDGEMENTS

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ABBREVIATIONS AND ACRONYMS

C- ESMP	Contract specific Environment and Social Management Plan
CESSCO	County Environment and Social Safeguard Officer
CIDP	County Integrated Development Plan
CSA	Climate Smart Agriculture
CPCU	County Project Coordinating Unit
CPP	Consultation and Public Participation
CPR	Comprehensive Project Report
EMCA	Environmental Management and Coordination Act, 1999
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EMCA	Environmental Management and Coordination Act, 1999
GBV	Gender Based Violence
KCSAP	Kenya Climate Smart Agricultural Project
KCPC	Kapsitii Catchment Project Committee
NEMA	National Environmental Management Authority
PAPs	Project Affected Persons
PPE	Personal Protective Equipment
SEA	Sexual exploitation and Abuse
SOP	Standard Operating Procedure
WRA	Water Resources Authority

EXECUTIVE SUMMARY

The proposed Bargoror/Kapsitii(Kapsakyat) Water Catchment Conservation Project at **LR. No. KER/Kaplel/638** is located in Kapsitii Village, Kaplelartet ward, Soin Sigowet Sub County, Kericho County. It Gulley lies within Latitude: **0°19'44.16''S** and Longitude: **35°2'21.61''E**. The objective of the project is to rehabilitate the eroded and degraded land through gulley erosion and protect the water catchment in the area. This is in line with KCSAP Project Development Objectives (PDOs of increasing agricultural productivity and building resilience to climate change risks in the targeted smallholder farmers. The project supported by the County Government of Kericho and the National Government under the Kenya Climate Smart Agriculture Project (KCSAP) through the funding from the World Bank. Its activities are in line with KCSAP development objectives of up-scaling Climate-Smart Agriculture (CSA) Practices and supporting smallholder farmers to adopt integrated climate-smart Technology, innovation and Management Practices (TIMPs) while increasing agricultural productivity, increasing resilience to climate change and reduction of GHGs. The project is estimated to benefit intended to benefit a total of 2600 beneficiaries (1,150 males, 1,450 females). The specific intervention measure proposed in this project is mainly installation of gully control & land rehabilitation structures to accelerate restoration process works. Over the years, Kapsitii village has suffered severe degradation caused by increased soil erosion in the surrounding catchment area with the degraded area estimated at 200 acres. The cost of the project is estimated at **Kenya Shillings 14,500,000**.

This Environmental and Social Impact Assessment (ESIA) Summery Project Report is based on the recommendation of the County Director of Environment (CDE), Kericho County following the environmental and Social Safeguards screening report which classified the project as low risk as stipulated in the National Environmental Management Authority (NEMA) legal notice 31 and 32 of 2019. The main objective of the ESIA was to identify existing and potential environmental and social impacts and concerns that the interested and/or affected parties have with the proposed development intervention, as well as the associated prevention and mitigation measures for the negative impacts as stipulated in the proposed Environmental and Social Management & Monitoring Plan (ESM & MP) in chapter 8. The ESIA, was conducted in accordance with the Legal requirement stipulated in the Environmental Management and Coordination Act (EMCA) of 1999 and its subsequent supplements; the Environmental (Impact Assessment and Audit) (Amendment) Regulations 2019, among other pertinent legal and institutional frameworks regulating major development. The World Bank safeguard policies were taken into consideration during project impact assessment including Operation Policy (OP)/Bank Procedure (BP) for Environmental Assessment (4.01); OP/BP for Physical Cultural Resources (4.11) and OP/BP for Public Disclosure (17.50).

The standard method of ESIA was used, this included Environment screening, desk review, scoping, site visit and public participation and stakeholders' consultation. Screening helped to recommend the appropriate instrument, Environmental scoping that provided the key environmental issues. Desk studies and reviews of critical planning documentation such as design report for the proposed gulley rehabilitation and other documents provided useful information for completion of this report. The ESIA process was achieved through public participation and consultation exercise involving 2 key informant interviews, 1 stakeholders' engagement on 3rd

September 2021 where 23 people attended comprising of 16 males and 7 females. In attendance were 2 differently abled persons. During the public participation meeting data was collected using structured questionnaires where a total of 40 questionnaires were distributed out of which 34 questionnaires were successfully filled and returned.

Negative environmental impacts include temporary water pollution, Disturbance of flora and fauna, Injuries and accidents, Loss of vegetation and impacts on flora and fauna, Soil erosion and soil pollution, Air quality deterioration, Vibration and noise nuisance, Occupational accidents and risk of injury to workers, Risk of accidents and injury to the public. Negative social impacts include, encroachment to private farms by the project without land consent, Sexual exploitation and Abuse (SEA), Gender based violence and sexual Harassment (GBV&SH), child abuse and child labour, spread of COVID 19 in the community and among workers, risk of increased spread of HIV/AIDS and Sexually transmitted diseases, increased labor burden on women, water borne diseases, loss of grazing land, increased inequity as well as risk of accidents.

Measures to mitigate these impacts are as follows: Solid waste, there is need to provide collection facilities and encourage waste segregation, recycling of recyclable wastes such as paper, metals, and plastic. To mitigate public and occupational health and safety the proponent will provide suitable personal protective equipment during construction to avoid muscular strains, ensure fencing of the water pan, water treatment. To mitigate on the use of pesticides, farmers will be trained on safe and effective use of pesticides including disposal of used pesticides and containers. The proponent will also undertake surveillance, monitoring of water quality and regular desiltation measures. To minimize dust and air emission during construction, ensure regular servicing and maintenance of vehicles and machinery. The proponent will ensure that all COVID 19 prevention measures are enforced e.g. keeping social distance, wearing masks rightly, sanitizing and washing of hands regularly. All the issues were addressed by various stakeholders during public participation including the expert and the CESSCO. The CPCU and the contractor will in coordination with the local leadership undertake community awareness on GBV and put in place grievance redress mechanisms (GRM) for tracking and resolving any emerging issues during the project implementation. The approximate cost of implementing the environmental and social management and monitoring plan(ESMMP) is **Kenya Shillings 875,000** during construction and **Kenya Shillings 400,000** annually for operations and maintenance.

Based on the assessment the project will result in positive impacts which far much outweigh the anticipated negative impacts. The negative impact shall be mitigated through the comprehensive measure as outlined in the ESMMP. It is the view of the experts that the project be allowed to proceed on condition that all concerned parties fully implement the proposed mitigation measures for the negative impacts. The experts further recommend approval by the National Environmental Management Authority(NEMA) subject to full implementation of ESMMP and annual environmental audits. On approval the ESMMP should be shared with the selected contractor, the proponent and other relevant stakeholders for implementation. The Environmental and Social Safeguards and Compliance Officer in consultation should relevant stakeholders and institutions monitor and report on the implementation ensure compliance. Regular monitoring should be conducted to track the implementation and take appropriate timely corrective measures.

CHAPTER ONE INTRODUCTION

1.1 Background Information

The proposed Barngoror/Kapsitii water catchment project is located in Kapsitii Village, Kaplelartet ward, Soin-Sogowet Sub County, Kericho County. The project was proposed by Kapsitii Catchment Protection Committee. The area has undergone high rain water run-off and soil erosion due to lack of soil conservation practices. Several gullies have formed over time due to massive water run-off in the Kapsitii watershed. During the dry spell water access for both livestock and domestic use. The existing water sources (water pan) has since silted. Water conflicts often arise between agricultural, livestock and domestic consumers, particularly during 5 months (November to March) of dry spell every year.

The overall objective of the project is to stabilize the gully, build resilience to climate related risks, poverty alleviation and environmental sustainability. Specifically, the project intends to rehabilitate the eroded and degraded land through gully erosion and protect the water catchment in the area particularly through installation of gully control and land rehabilitation structures to accelerate restoration process, implement appropriate sustainable land management practices e.g. vegetative cross-slope barriers, terraces, agro-forestry and Promote construction of external water harvesting and conservation techniques mainly water-pans. The main components of the project include twin water pans of capacities 2000 cubic meters and 2850 cubic meters, soil conservation structures(gabions) and gully rehabilitation of approximately 183 meters. The other structures include community watering point, livestock drinking troughs and sanitation facilities (toilets and bathrooms) The proposed project is expected to benefit 2600 beneficiaries (1,150 males, 1,450 females). The project is estimated to cost approximately *Kenya Shillings 14.5 million*.

1.3 Project Justification

The project contribute to the KCSAP project development objective of increased productivity through effective soil erosion control that will lead to increased yields of agricultural value chains e.g. crop and milk yields among smallholder farmers in the catchment; increased resilience to climate change through restoration of degraded areas and installation of water harvesting systems thus increasing the capacity of the land to support agricultural production despite any changes in climatic conditions and ; Reduced of GHGs through improved planting of vegetation to increase land cover thereby acting as carbon sinks for the GHGs that are the main culprits in global warming phenomenon.

The proposed project will help reverse the trend of environmental degradation by stabilizing the gully and help to build resilience to climate related risks and increase environmental sustainability. The Specific reasons for supporting the implementation of the proposed project include: Fully protected farmlands against soil erosion: soil control structures implemented in all farms in the catchment; minimized incidences of soil erosion in the catchment; halted gully formation and existing one put on healing process; Reduced Water run-off and flooding of low lying areas; Increased land productivity e.g. crop yields, livestock land carrying capacity and ; increase in vegetation cover in the catchment

1.4 Justification of ESIA Summery Project Report

Since the proposed project falls under the category of the second schedule of EMCA CAP 387, its implementation calls for consideration of likely adverse environmental, social, cultural and economic impacts. This Environmental and Social Impact Assessment (ESIA) Summery Project Report has been conducted following recommendation of the County Director of Environment(CDE) based on the environmental and social safeguards screening report. The assessment considered all the impacts of the project from construction, operation and decommissioning.

This Environmental Impact Assessment (ESIA) Summery Project Report has been prepared in accordance with the new regulation 7 (Environmental (Impact Assessment and Audit) regulations, 2003, vide legal notice of 2019) which provides for preparation and submission of Summary Project reports for low or medium risk projects (as classified under legal notice 31 of April 2019) and prepare a comprehensive Environmental and Social Management and Monitoring Plan (ESMMP).

1.5 The Objectives of ESIA Summery Project Report

- To comply with the Environmental (Impact Assessment and Audit) Regulations, 2003, Regulation 6, which requires that an application for an Environmental Impact Assessment (EIA) license
- Study the baseline environmental conditions in the project area, describe the existing status of the sub-watershed and gullies;
- Identify the environmental and social issues/risks associated with the existing conditions; such as the physical, biological and socio-economic environment;
- Study the project conditions and requirements in terms of location, construction and operational requirements;
- Study the positive and negative impacts associated with the gully rehabilitation works on the traditional ‘society living within the influence of the study area;
- Study the gender and social issues in the project area in-so-far as the water sections influence the lives of the women, children, the elderly and the disabled, and quantify the benefits, which would accrue to them during and after the project.
- Assess environmental and social impacts of the project and suggest suitable mitigation measures for adverse impacts;
- Prepare an environmental and social management and monitoring plan (ESM&MP) for implementation and monitoring of mitigation measures along with budgetary estimates, institutional and reporting requirements.

1.6. Methodology of ESIA Summery Project Report

1.6.1 ESIA Approach

This ESIA study was based on the available baseline information and reports on Kapsitii Gully Rehabilitation. This ESIA Study Report was prepared in accordance with the relevant legal requirements as stipulated in the Environmental Management and Coordination Act (EMCA) of 1999 and its subsequent supplements “*The Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019*” and the World Bank Safeguard Policies for submission to the National Environmental Management Authority (NEMA) for approval and issuance of license.

The ESIA study process entailed screening, scoping, desk review of documents pertinent to the proposed project, field survey including administration of a questionnaire, project data synthesis, public participation and stakeholder's consultation and preparation of ESIA project report.

1.6.2 Screening

The environmental law (EMCA, 1999) provides that all projects that fall under second schedule must be subjected to an ESIA. Thus, screening was done to establish whether or not an Environment and Social Impact Assessment was necessary. The screening team was composed of the Project's County Environmental and Social Safe-guards Officer (CESSCO), County Director of Environment and the Sub County Agriculture Officer, Soin-Sigowet Sub-County.

1.6.3 Scoping Process

This was done to identify significant issues allied with the project and the reasonable and feasible project alternatives. The process involved discussions with the client and proponents, face-to-face interviews with the identified stakeholders and survey of the site.

1.6.4 Desk review of Documents

The ESIA team reviewed all the relevant available documents on project activities and components from the client. The team also reviewed all the available and relevant internal environmental guidelines put in place by the proposed project and recognized guidelines and standards on ESIA.

1.6.5 Field Survey

The ESIA team conducted field visits to the proposed project site and consulted the stakeholders to obtain further information. The team established the nature of the surroundings including: existing infrastructure, economic and social set up of the local communities whose normal daily activities will be and/or likely to be affected by the implementation of the proposed Kapsitii Gulley Rehabilitation project. Data collection was carried out during a public participation on 3rd September 2021 through questionnaires and standard interview schedules, use of checklists, and field observations and photography.

1.6.6 Project Data Synthesis

The ESIA team thereafter synthesized the collected data, interpreted it and use it to prepare the environmental and social management plan (ESMP) encompassing the potential negative environmental impacts, mitigation measures and monitoring indicators on the proposed Kapsitii Gulley Rehabilitation Project. The ESM&MP is incorporated in in chapter 8 of this ESIA report.

1.6.7 Public Participation and Stakeholder Consultation

The ESIA team organized and convened public consultation meetings for all stakeholders. The team engaged the Project management committee and the area chief of Kapsitii to convey the consultation theme and appropriate public consultation venues. During these forums on the 3rd September 2021 that was held at the project site (next to the Gulley), the ESIA team in close consultation with the client shared the project information in terms of its implementation and predicted impacts. During the exercise, All COVID-19 guidelines were observed.

1.7 Organization of the ESIA Report

This ESIA has investigated and analyzed anticipated environmental impacts of the proposed development in line with the World Bank Social Safeguards and EMCA Environmental (Impact Assessment and Audit) Regulations, 2003. Consequently, the report is organized into nine substantive chapters. Chapter one present the introductory chapter, Chapter 2 gives project description, Chapter 3 presents the environmental and social baseline Information of the study area while Chapter 4 present relevant legislative and regulatory framework. Chapter 5 presents the outcome of the public consultation and participation process, Chapter 6 identifies and discusses the anticipated impacts and mitigation measures of the project, Chapter 7 analyses the various alternatives to the project and. Chapter 8 presents the environmental and social management and monitoring plan (ESMMP), while Chapter 9 wraps with the conclusions and recommendation followed by references and appendices.

CHAPTER TWO

NATURE OF PROJECT

2.1 Introduction

The proposed project involves water catchment conservation through rehabilitation of Bargoror/Kapsitii Gulley by installing gully control & land rehabilitation structures to accelerate restoration process.

2.3 Project Design

The proposed project will entail the following structures and measures: Two (2) Flood Control water pan; vegetative Cross-Slope Barriers. Soil and water conservation structures and Gully Control & Land Rehabilitation Structures; auxiliary structures (Community watering point, cattle drinking trough, toilets and bathrooms) and; fence with lockable gate to ensure safety of the water pan

2.4 Proposed Project Activities

2.4.1 Preconstruction Activities

- a) **Survey and design:** This entails site visit by the survey to mark the boundaries of the project site and the engineer to prepare a design report and the drawings for the proposed project.
- b) **Site meeting:** This will be necessary to introduce the selected contractor to the site and to the community.
- c) **Establishment of Publicity Sign:** Once the contractor is selected, he/she will be expected to erect publicity sign and maintain a publicity sign as directed by the Client's Engineer
- d) **Mobilization of the required machinery** to the site and setting up of the site camp

2.4.2 Construction Activities

- a) **Setting-out the site:** This will entail setting out the site for all the structures i.e. the Water pan reservoir, spillway, embankment and collection channel in the presence of the client's appointed Engineer
- b) **Construction of temporary toilets for workers on site:** This entails construction of toilets to be used by workers during construction phase of the project.
- c) **Construction of water pans:** This will entail desilting and rehabilitation of two (2) water pans of capacities 2000 cubic meters and 2850 cubic meters. The main activities include
 - o Clearing the area surrounding the existing pan and cart away the material 100m away or as directed by the site Engineer
 - o Emptying the Water-pan by excavating a 3m wide channel to let the water flow from Water-pan 1 to Water-pan 2.
 - o Removal of Old Embankment
 - o Excavation of the core trench of 100 m long x 4m wide to a hard ground to a depth not less than 1m deep

- Backfilling the excavated embankment with suitable materials in layers of 150mm at the same time compacting using sheep foot roller to at least 95% MDD while maintaining the final top crest at 3m wide or as directed by the site Engineer
 - Excavating the reservoir area for water Pan 1 to 1356m asl from the original ground level and use suitable material for building the embankment with side slopes of 2:1 upstream and 2:1 downstream
 - Establishment of Grass Cover on the Embankment
 - Construction of the draw off system for water pan 1
 - Excavating the reservoir area for water Pan 2 to 1356m asl from the original ground level and use suitable material for building the embankment with side slopes of 2:1 upstream and 2:1 downstream
 - Construct the embankment for water pan 2 while Compacting in layers of 150mm using a sheep foot compactor to attain the recommended 95% MDD
 - Establishment of Grass Cover on Embankment: This entails establishment on the entire downstream face of the embankment with a suitable grass to stabilize the soil against erosion immediately and during the settlement period.
- d) Construction and laying of Gabions across the eroded area over a stretch of 300m:**
This will entail the following: -
- Excavating a trench measuring 5m wide by 1.5m deep and 70m long or as indicated on the given drawings to receive gabion boxes and to be stone pitched to form the upper spillway channelling water to the second Water- pan.
 - Laying two lines of gabions 1000mm x 1000mm and enclosing 3000mm channel as spillway to a total length of 150m as per the given drawings
 - Stone pitching at a distance of 70 m and covering an area of 270m² between the pan normal water level and the second bottom of the basin with 200mm hard-core.
- e) Fencing the water pan:** A chain-link fence with a lockable gate will be erected around the two water pans for safety purposes. Fencing of the pan will prevent access and reduce the risk of small children and livestock falling into the water pan.
- f) Construction of Livestock Trough, Communal Water Point and Toilet:** This entails constructing Community watering point with four taps, livestock drinking trough of external measurements 11.55m x 1.5m complete with a ball valve and a 75mm thick reinforced concrete cover connected to the 100mm diameter pipe by a 50mm diameter pipe and Rehabilitating the existing washrooms and bathrooms.
- g) Gully Rehabilitation:** This will entail Construction and laying of Gabions across the eroded area over a stretch of 300m. The main activities include: -
- Excavation of a total of 386m of trenches in readiness to receive 2m x 1m x 1m gabion baskets to be laid to reduce the soil erosion of the highly erodible soil
 - Laying of 2mx1mx1m gabion boxes in readiness to complete the filling of the boxes with suitable hard core stones.
 - Filling the laid gabion boxes with suitable hard core stones 150mm to 250mm sizes and finish by closing and sealing the gabion boxes lids

2.4.3 Operation and Maintenance activities

- Implementation of appropriate sustainable land management practices e.g. vegetative cross-slope barriers, terraces, agro-forestry
- **Implementation of in-situ water harvesting & conservation techniques** e.g. Retention ditches, deep tillage, CA, earth bunds etc.
- Promote construction of external water harvesting & conservation techniques e.g. Water-pans, Cut-off drains etc.
- **Planting grass cover and Trees:** Protection activities including soil conservation, erosion control, drainage work and planting of trees, shrubs and grasses is important. It is essential that a good creeping grass type (i.e. kikuyu, couch or star grass) is established on all bare earth surfaces as soon as possible after project completion.
- Desilting of the water pans to ensure sustainability
- Project supervision, monitoring and evaluation

2.5 Equipment and Machines

2.5.1 Materials

The main materials include cement, soft gravel material, sand, gabion boxes, natural stones, excavated soil and draw off pipes.

2.5.2 Equipment

The equipment will include an excavator, trucks, concrete mixer, vibrator, heavy duty hammer, gabion tensioner

2.6 Expected Outputs

- a) Fully protected farmlands against soil erosion: soil control structures implemented in all farms in the catchment;
- b) Minimized incidences of soil erosion in the catchment;
- c) Halting of gully formation and repair of the existing watershed gullies;
- d) Reduced Water run-off and flooding of low-lying areas;
- e) Increase in land productivity e.g. livestock land carrying capacity and livelihood diversification through introduction of irrigated agriculture;
- f) Increased household income through higher Crop and milk yield attained by introducing improved fodder for better livestock nutrition;
- g) Reduced land degradation by harnessing water run-off and turning it from “problem water” to productive input for livestock and crop production;
- h) Increased vegetation covers in the catchment by introducing water-efficient agro-forestry tree species for water and environmental conservation.

2.7 Project Cost

The total project cost excluding the cost of implementing the ESMMP is ***Kshs 14,500,000***

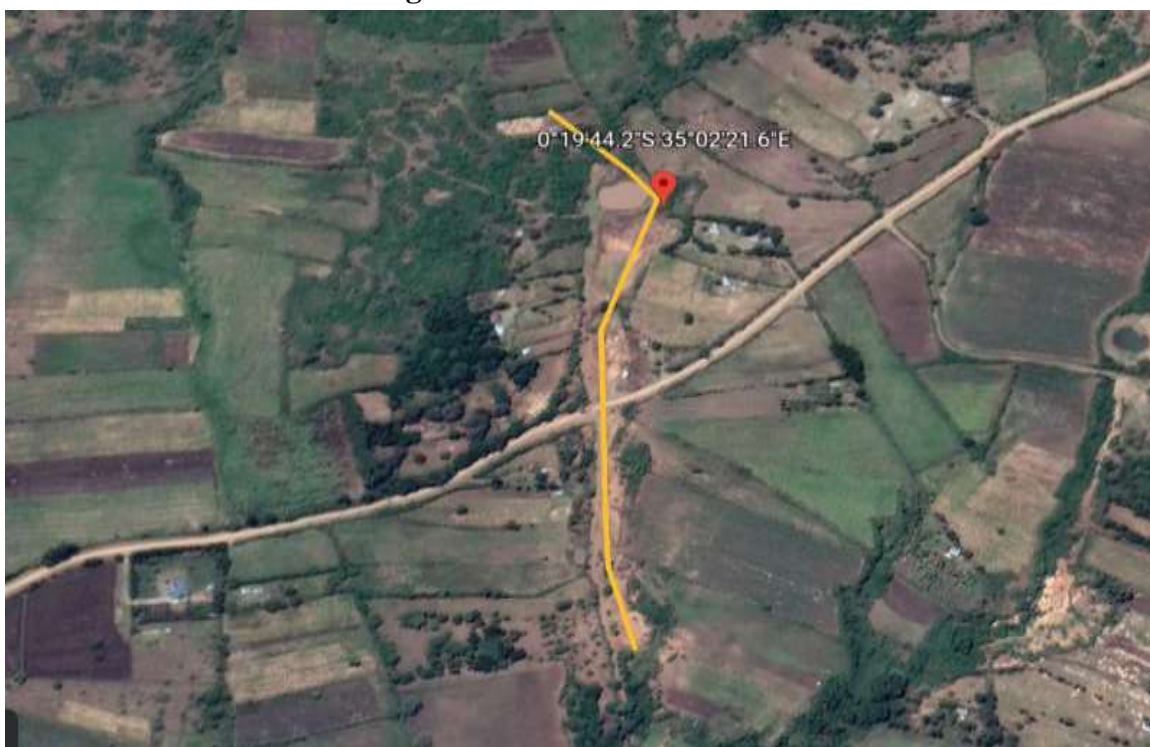
CHAPTER THREE THE PROJECT LOCATION

3.1 Introduction

The section gives the project location and description of the physical and socio-economic environments of the proposed project area.

3.2 Project Location

Bargoror/ Kapsitii water catchment and conservation project is located in Kapsitii village, Kaplelartet ward, Soin-Sigowet Sub County, Kericho County. It's located on GPS coordinates: Latitude: **0°19'44.16''S** and Longitude: **35°2'21.61''E**



*Figure 3.1: Location and stretch of Bargoror/Kapsitii Gulley and water catchment Conservation Project
Source: Google Earth*

3.3 Land Ownership

Kapsitii Gulley cuts on a 2acres land located on land registration; LR No. **LR. No. KER/Kaplel/638** The water pan exists on the same land along the gulley stretch. The land is a private land owned by Kamanga Family headed by Emily Chemutai. The family has donated the land to be used by the community for the project as per the land donation agreement (Annex 2). The total farmlands to benefit under the proposed water catchment project is 650 farmlands and estimated to occupy 200 acres.

3.4 Site Description

3.4.1 Kapsitii Gulley

The gulley stretches for a distance of 386 meter and cutting upto 2m deep. The community has put efforts to curb advanced erosion by putting gulley control structures such as gabions which are not adequate. Along the gulley is a flood control water pan which needs repairs.



Figure 3.2: The current status of the flood control water pan located along the gully



Figure 3.3: Current effort, Gulley Control Structures

3.4.2 Physical Environment

a) Environmentally Sensitive Area to be affected

The project is not likely to affect any endangered species of flora and fauna. Land use is cultivated agricultural land all the way across the watershed except few shrubs. People have majored in growing of sugar cane, beans, maize and sorghum. The cultivation methods used is the local agricultural practices which is straight row leaving area therefore susceptible to erosion. The water pans along the gully risk being silted further by the agricultural activities in the area as pointed out that siltation has been contributed by cultivation and inadequate soil conservation measures. To protect the water pan along the gully from further siltation after the project, the community has already agreed to monitor and implement mitigation measures suggested.

b) Geology, Soils and Land Degradation

In the study area soils are fairly developed with satisfactory traces of good organic matter. The drainage condition of these soils ranges from well to poorly drained depending on the site. Most of the low-lying parts of Kapsitii area are possible flood plains and have clay soils. The land along the water course has been degraded by the runoff forming deep gulleys.



Figure 3.4: Soil and geological structures at the proposed project site



Figure 3.5: Deep gulleys cut by storm water



3.6 : Photo showing indigenous trees

c) Wildlife:

The area is predominantly under agricultural activities and no wildlife conservation activities occur in the entire area. The area is characterized by shrubs but farming has greatly reduced the biodiversity of the area with no notable wild animals seen during the field survey except birds.

d) Vegetation Type:

The proposed project area shows that the area was once under grassland and scattered bushes, however clearly human activities has already taken a toll on the natural vegetation that gave way several years ago, most of the vegetation available currently is mostly exotic and at some instances shrubs and thorns have colonized land thus characterizing an arid environment. Along the Kapsitii water catchment area tree species like *Maerua* sp., *Acacia tortilisare* **dominant** and now exotic trees: eucalyptus, cypress and wattle trees are the main vegetation here.



Figure 3.7: Type of vegetation near the water pan at the proposed site

e) Climate:

Kapsitii area is a relatively a warm to cool area with average daily temperatures that vary from 10⁰C to 28⁰C. Low temperatures are experienced during wet seasons while moderate temperatures occur during the months of December to February when the short rains have tailed off. The project area lies in the Rift Valley at 2200m above sea level. It falls under ecological zone II. The area receives an average annual rainfall of 800 -1200mm. Rainfall distribution bimodal over the year, and is the first rainy season starts in April and second rain season in October. Rainfall intensity is very high leading to very high volumes of runoff which we intend to store for use during dry season. The average annual temperature is 20 degrees Celsius. The rainfall pattern is bimodal with long rains occurring from March to August and short rains from October to December. Average precipitation is between 900mm annually. The rains mostly fall in the afternoons to evenings.

f) Hydrology:

The water catchment area for Kapsitii/Barngoror watershed is over 16 Km². The main recharge of the water pan is Kapsitii seasonal Stream which emanates from Barngoror Catchment area.



Figure 3.8: View of the current status of Kapsitii Water Pan

3.4.3 Socio Economic Environment

a) Demography and Livelihood

The estimated population of Kapsitii area 2600 people and 500 households. Based on this population the projected water demand is high. Out of this population, 1150 are males and 1450 females. The area has approximately 97 VMGs. The water requirement will be for domestic use and agricultural production through irrigation. The villages fully depend on the water resource for livelihood. There is no known physical cultural resource along the project routing that would be adversely impacted by the project. Most people in the project area are small scale farmers and small-scale business persons.

b) Education

The project area is fairly provided with educational facilities. These include 3 primary schools and 2 ECDs within the project area and there are nearby secondary schools.

c) Economic Environment

Sugarcane growing forms the main cash crop in the project area. Maize and potatoes are the main agricultural enterprises in the area, goat rearing and dairy farming also practiced in most parts of the Sub-location. Cultivation of other food crops mainly tomatoes, African Leafy vegetables, Kales, Beans, and Banana is also done. The major livestock enterprises are Dairy and Poultry rearing; with most farmers keeping both pure breed and cross-bred livestock. The number of livestock in the area depending on the water is estimated at 10,000. The greatest limitation to agricultural production in the area is unreliable rainfall and lack of permanent sources of water.



Figure 4.5.1: Livestock being led to drink water at the water pan

3.5 Supportive Environmental Infrastructure

a) Road Network

The area is connected by a murrum road which is fairly well maintained and is therefore accessible

b) Communication

The project area is fairly covered with all-weather rural murrum roads that connect the area to the Soko huru-Kapsorok-Sigowet Road. Very few PSVs are available at the entry to the tarmac roads and Boda boda motorcycles are the major means of transport from the villages to the tarmac points. The area is also well served by mobile network.

c) Electricity Connectivity in Kapsitii

The area is well served with electricity supply from Kenya Power and some residents have installed electricity in their premises for both commercial and domestic use. Though a gravity system is envisaged for the area, the proposed project stands to benefit from green energy pumping system when the residents not reached by the gravity system are considered to benefit from the project and incorporated in it.

3.6 Conformity to Land Use Plan and Zonation Plan

The area is widely agricultural land with most farm having sugar cane and maize as the main crops. Rearing of dual purpose cattle is dominant in the area. The project site already has a water pan which is being rehabilitated. The gully is along a water course form the hilly areas of Kapsitii. The development therefore conforms to the land use plan since the main reason for rehabilitation of the water pans and the gully is to stabilize the soil by controlling erosion and provide reliable source of water for livestock which in the long run would enhance agricultural productivity.

CHAPTER FOUR

PUBLIC PARTICIPATION AND STAKEHOLDERS' CONSULTATION

4.1. Introduction

Public consultation with regard to the proposed project was conducted as required in the Environmental Impact Assessment and Audit Regulations of 2003 (amended 2019). The community members had been informed earlier by the area chief on the tentative day of visit and had selected those to represent them. All the set MOH guidelines on prevention of COVID-19 in Kenya were observed during the public consultation exercise. Hand sanitizing and masks were issued to all participants prior to commencement of the forum.

4.2 Objective of Community and Stakeholders Consultation

The main objectives of community and stakeholder consultation was to:

- Provide clear and accurate information about the project to the community;
- Obtain the main concerns and perceptions of the population and their representatives regarding the Kapsitii/Kipsakyat Catchment Protection Project
- Increase long term project sustainability and ownership;
- Obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures; and
- Identify local leaders with whom further dialogue can be continued in subsequent stages of the project.

The consultation was vital and served to:

- Explain to the public the nature of the proposed project, its objectives and scope;
- Give stakeholders an opportunity to present their views, concerns and issues regarding the proposed project; and
- Obtain suggestion from residents on possible ways that they fill potential negative impacts can be effectively mitigated.

4.3. Methodology of Public Participation

The environmental and social assessment public participation exercise was conducted through 1 major ESIA Public participation forum (Baraza) which was held at the proposed site on 3rd September 2021 with 23 participants (16 males, 7 females). In attendance were 2 differently abled persons representing the VMGs in the village. During the meeting 2 Focus Group Discussions and 2 Key informant interviews were conducted. Data collection was mainly through the use of structured questionnaires. A total of 20 questionnaires were administered out of which 14 questionnaires were successfully filled and returned (Annex 7).



Figure 4.1: Ongoing Public consultation with the area residents at the proposed project site on 3rd September 2021



Figure 4.2: Ongoing consultation with the project management committee and the residents at the proposed site

In general, the following steps were followed in carrying out the entire CPP process: -

- ✓ Administration of questionnaires to different target groups and local community members in the administrative area for the proposed project site (*Annex 5*).
- ✓ Technical Meetings at various levels with different target groups including the CPCU and CPOE.

4.4. Key Issues Raised in Public Consultation and Responses

The consultation on the 3rd March 2021 was done at the proposed site to collect baseline data on the proposed project including land ownership, population, settlement patterns and concerns regarding the project (*Annex 3*) The following were agreed by all community members during the forum:

- a) **Noise pollution from construction works:** Machines and vehicles engines to be shut off while not in use or in motion.
- b) **Temporary disturbance of source of water:** The community currently relies on the water pan for a range of activities such as cattle drinking, they promised to give the contractor time to work and use the available alternative sources of water.
- c) **Water volume during drought-**Another concern on sustainability was water volumes at the water pan during drought season-The reply from the CESSCO was that the design of the water pan indicates that the water any recharge.
- d) **Safety during construction:** The community will work with the contractor to ensure full cooperation in terms of safety measures in place so as to avoid chances of risk of injuries or other safety issues
- e) **Water Pan safety:** The current water pan is open without a fence and posing risk to community members, children and livestock. They requested that fencing be done around the water pan for safety measures.

CHAPTER FIVE

ANTICIPATED IMPACTS AND MITIGATION MEASURES

5.1 Introduction

This section highlights the mitigation measures for the expected negative impacts of the proposed project. The potential impacts and the possible mitigation measures have herein been categorized under two broader categories, Environmental and Social and analyzed into three categories: Construction, Operational and Decommissioning Phases.

5.2 Environmental and Social Impacts during Construction Phase Impacts

5.2.1 Positive Impacts

a) Creation of Employment opportunities for residents of the project area

The proposed project will provide short term employment opportunities to the local community. During the construction of the proposed project, there will be employment opportunities for both professionals and unskilled workers. Semi-skilled, unskilled laborers and formal employees are expected to obtain gainful employment during the period of construction. The creation of employment opportunities is beneficial both from the economic and social point of view. Economically, people employed will earn income which they will use to improve their livelihood. Socially these people will be engaged in productive employment and minimize social ills.

b) **New business opportunities for the local community** who will benefit from supply of essential items to the workers on site. The items food for workers on site

c) **Increased Income:** The construction works will provide a market for the locally available materials while the services required by the construction workers will boost the local businesses. Project implementation in the proposed area will increase employment opportunities hence improved incomes.

d) Infusion of skills and knowledge to the locals through interactions with the outsiders

5.2.2 Negative Environmental Impacts and Mitigation Measures

a) Soil erosion and soil quality degradation

Construction activities and heavy machines have the potential to loosen soils as a result of removal of vegetation, particularly on steep area. Soil quality degradation is also likely to occur during construction as a result of disposal of construction materials on the adjacent lands.

Mitigation Measures:

- Excavated earth should be held on locations of the site not susceptible to storm water runoff.
- The earth removed for external disposal should be deposited carefully on selected sites without the risk of being washed away during heavy rains and where such deposits will not compromise other land use activities in the areas affected
- Re-vegetation of exposed areas around the site should be carried out rapidly in order to mitigate erosion of soil through surface water runoff and wind erosion
- Construction of silt trap structures like terraces and check dams upstream

b) Dust Emission/Air quality degradation

Dust will be emitted due to any excavation activities, movement of vehicles and related earthworks. Particulate matter pollution is likely to occur during earthworks. This is likely to affect site workers and the residents, in extreme situations leading to respiratory problems and eye site problems.

Mitigation Measures

- Construction workers will be provided with dust masks to mitigate against occupational health risks of inhaling exhaust gases and dust.
- Regular sprinkling of water to be done on open surface and dusty grounds
- Employees involved in the construction work to be provided with dust masks;
- Contractor to enforce strict use of personal protective clothing

c) Vibration and Noise pollution

The proposed project will most likely result in noise emission as a result of machines like excavators used on site during construction. Noise could impact negatively on the workers involved in the construction work. Noise can also be a nuisance to the local community near the site if works begins early in the morning to late in the night.

Mitigation Measures

- Maintain the levels of noise pollution from the machinery in accordance to the manufacturer's specifications
- All construction work to be limited to daytime only;
- Immediate neighbors to be notified in advance on the date of commencement of construction work.
- All employees likely to be exposed to ear noise to be provided with ear protectors;
- Contractor to ensure strict enforcement on use of ear protectors

d) Loss of flora and fauna

Excavation activities will lead to further loss of vegetative cover at the site of the construction camp for the workers who are likely to be engaged in the actual construction activities. This impact is however not expected to be significant.

Mitigation Measures

- Clearing of vegetation shall be kept to a minimum
- Trees should be trimmed rather than removed wherever possible
- Upon completion of works the area surrounding the water pan should be revegetated to form the buffer
- Sensitization of construction work-force on environmental conservation and ecological protection

e) Generation of Solid Waste

During the construction phase various activities will be carried out and involve the excavation. Waste during the construction period will arise from spoil during excavation work, waste PVC pipes, deleterious material from aggregate screening; maintenance and repair of machinery; workers domestic waste as well as waste water

Mitigation Measures

- Solid waste to be disposed only at licensed disposal sites;
- Provision of solid waste collection facilities (waste bins)
- Sensitization of construction workers on proper disposal of solid wastes
- The contractor will maintain all site vehicles and equipment to a serviceable state.
- Provision of temporary septic pit for workers on site
- Liaise with the County Government of Kericho and local NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes

f) Risk of leaks and spills

Petroleum hydrocarbons present both an environmental and fire risk. The storage of petroleum hydrocarbons on site presents a hazard source and the release of hydrocarbons into the environment could result in significant impacts on a variety of receptors. The pathway for pollution is soil or water, and the primary receptors include the sub-soil and groundwater. Other receptors include air (from fuel vapors) and people (through dermal contact, inhalation or ingestion). The major source is from refilling of excavators and other machinery on site. It is however worth noting that the risks of a major oil spillages occurring are minimal.

Mitigation Measures

- Take adequate measures on spilled substance on water and land
- Ensure minimal spillage and if there is spillage then scooping and adequate dumping is required
- Water from cleaning of equipment should be not be discharged into water courses.
- Regular maintenance of site equipment and machinery should be carried out to ensure any leakages are detected and controlled. The motor vehicles and heavy equipment should be serviced according to manufacturer's requirements to limit the exhaust emissions.
- Safety procedures for fuel storage and re-fueling should be well understood and implemented by site staff
- Oil residuals including waste oil, lubricants, used filters, should be carefully collected and stored for safe disposal, in order to prevent migration of contaminant hydrocarbons into storm water or groundwater resources.

5.2.3 Social Impacts during Construction Phase

(a) Occupational Health and Safety Issues

Construction works and movement of trucks delivering materials will create dust, air and noise pollution which are likely to impact on public health. Oil waste from vehicle is likely to impact on public health if it finds its way into the water sources. Sanitation and hygiene during construction is likely to result into outbreak of diseases such as typhoid, hepatitis and intestinal worms. It is expected that employees are likely to encounter occupational health risks due to accidents at the construction site. Because of construction activities, workers are exposed to risks of accidents and injuries. Injuries can arise from use of tools and equipment during excavations to lay pipes as well as from general site preparation. The injuries can include cuts and bruises.

Mitigation Measures

- Erect an appropriate project signboard as directed by the proponent and put warning signages in open areas
- Erect the appropriate safety signage along the open excavated pipe-route for cautioning against risk of fall and possible injury.
- Put barricade tapes to in all excavated areas
- Provide adequate first-aid facilities in the project sites to handle medical emergencies during construction
- Discourage unauthorized idlers at ongoing excavation sites.
- Provide adequate PPE's to workers during construction
- Training all worker on OHS measures

(b) Labour Influx Effects

During construction the project will attract jobseekers and hawkers with possibility of thieves intruding into the area. This therefore leads to concentration of people in one area drawn from diverse social backgrounds often resulting to a number of issues such as strain on various resources especially water resources, grievances from local community members over job opportunities, sexual exploitation and abuse, unwanted pregnancies among other social issues. To mitigate against possible social ills associated with labour influx during construction phase and conflicts thereof, the contractor will adhere to the following mitigation plan;

Mitigation measures to Labour Influx effects

- The contractor awarded the Project will develop a labour Management Plan (LMP) in consultation with local leaders.
- The contractor will ensure effective community engagement and strong grievance mechanisms on matters related to labour, with a discrete mechanism for safely and confidentially reporting issues of SEA and GBV at the community level triggered by the Project
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx, the contractor should engage a local community liaison person who is also trained in PSEA.
- The contractor will ensure proper records of labour force on site while avoiding child and forced labour
- The contractor will ensure comply to provisions of Workplace Injuries and Benefits Act (WIBA) 2007
- The contractor will develop and implement a children Protection Strategy, this strategy will ensure that no child under the legal age of 18 years in employed to the Project.
- The contactor should institute a security plan e.g. through a register for all visitors and workers.
- The contractor will Adopt and adapt Nyumba Kumi strategies

(c) Spread of COVID-19 amongst community members during construction

During project execution (civil works), large numbers of workers will be required to assemble together in consultation engagements, meetings, toolbox talks and even at work sites; varied

number of workforce including suppliers of material and services are also expected to come in from various places in the country which may be COVID-19 hot spots; and interaction of workers with the project host community will happen as workers find accommodation close to work sites, and/or return to their homes after works. The potential for the spread of any infectious disease like COVID-19 by projects is high. There is also the risk that the project may experience large numbers of its workforce becoming ill and will need to consider how they will receive treatment, and whether this will impact on local healthcare services including the project host community.

COVID-19 Mitigation Measures

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

Mitigation measures

- Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including workers and visitors
- Avoid concentrating of more than 15 persons or workers at one location. Where more than one person is gathered, maintain social distancing of at least 2 meters
- All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening.
- The project shall put in place means to support rapid testing of suspected workers for covid-19;
- Install hand-washing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used;
- Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of work stations, door knobs, hand rails

(d) Gender Based violence and Sexual Harassment

While such cases are difficult to assess, there is likelihood of cases of GBV during construction and operation phase of the project. This impact is triggered during Project Construction Phase when the Contractor fails to comply provisions gender inclusivity requirements in hiring of workers and entire Project Management as required by Gender Policy 2019 and 2/3 gender rule. Failure to protect Human Risk Areas Associated with, Disadvantaged Groups, interfering with Participation Rights, and interfering with Labour Rights.

Mitigation measures

This mitigation is triggered by gender inclusivity requirements in hiring of workers and entire Project cycle

Mitigation measures on Human Rights and Gender requirements which oblige the contractor to:

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

(e) Child Abuse

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

Mitigation Measures to Child Protection

- The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated by the Project including on SEA...
- All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behaviour
- Children under the age of 18 years should not be hired on site as provided by Child Rights Act (Amendment Bill) 204.
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children to workers' home, unless they are at immediate risk of injury or in physical danger.
- Refrain from physical punishment or discipline of children).
- Refrain from hiring children for domestic or other labor, which is inappropriate given their age, or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.

- Comply with all relevant local legislation, including labor laws in relation to child labor specifically provisions of Kenya’s Employment Act Cap 226 of 2007 Part VII on protection of children against exploitation.

(f) Sexual Exploitation and Abuse (SEA)

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

Mitigation Measures to Risk of SEA

- Develop and implement an 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 whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

(g) Spread of COVID-19 amongst community members during consultations

During consultations for ESIA, various activities will be undertaken. For efficient and meaningful engagement, a wide range of individual participants, groups in the local community and other stakeholders will be involved. The consultations will involve verification of PAPs covering the occupants of the affected area and vulnerable persons and groups; awareness raising, sensitization of PAPs and gauging attitude to the project; training and capacity building for livelihoods restoration grievance redress, execution of site - specific Surveys among others. The activities will lead to close interaction between the proponent and the community members leading to a high risk of spreading Covid–19 amongst community members during the consultation process. To minimize the social risk, measures will be required to ensure social distancing and appropriate communication measures. The mitigation measures will be

supervised by a communications / stakeholder engagement / social safeguards expert in the project proponents' team.

COVID-19 mitigation measures

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

5.3 Environmental and Social Impacts during Operations Phase

5.3.1 Positive Impacts

a) Increased agricultural productivity: Water from the water pan will be used for majorly for production food and horticulture through irrigation. It is also expected that productivity of milk will be enhanced because of the increased production of pasture through irrigation. This will enhance productivity and income of the residents around the project area.

b) Improved food security

Availability of water will promote production of high horticultural value crops. This will increase access to food and improve nutrition beside income generation and employment among VMGs such as women and the youth. The increase in cropping intensity/sequential cropping will also improve food security in the community.

c) Livelihood diversification

The proposed project will enhance livelihood diversification through sustainable land management and natural resource management interventions, including small scale irrigation projects and farm level conservation works. Diversification will contribute towards employment creation, income generation and food security in the village under the project area.

d) Resilience to climate risks

Irrigation is one of the most reliable strategy in adaptation to extreme weather events such as droughts. There is high risk of crop failure for rain fed agriculture in the subproject area. The

proposed project and eventually irrigated agriculture increases coping and building better from droughts by the community and reduces their vulnerability to livelihood shocks in the short and long term. Increased access to water will mitigate against droughts and open opportunities for irrigation ensuring food security and nutritional security as well as income stabilization among farmers.

- e) **Improved wellbeing of women and children:** At the household level, women and children bear the burden of fetching water. Other than the time spent in getting water from long distances, these practices has far reaching consequences on their health and wellbeing. Improved water accessibility would translate to time saving by the women. Time saved thus would be invested in agricultural production and other engagements that could bring financial benefits to the family.
- f) **Floods Control:** The conservation of the land at Kapsiti will help to mitigate against the floods in the lower areas.

5.3.2 Negative Environmental Impacts and Mitigation Measures

a) Soil erosion and siltation

During the operational phase of the project, farming near the water pan is likely to increase sedimentation of the water pan. This is likely to result from the surface run off. Siltation is likely to occur if the proper measures are not put in place at the water catchments to trap the silt from entering the water pan.

Mitigation Measure

- Use erosion control techniques which disperse erosive energy and avoid concentrating it e.g providing good vegetative cover will disperse the energy of rain drops and contour drainage will slow down surface runoff.
- Planting indigenous tree species along the catchments of water pan.

b) Water quality and deterioration

The key environmental issue during irrigation in Kapsitii area will be the increased use of agricultural biocides (Insecticides, herbicides, fungicides etc.) and fertilizers due to expected intensification of agricultural activities in the project area. This might also find their way into the water pan and thus impact negatively the downstream ecosystems. The pollution of surface water by agricultural chemicals would lead to the deterioration of water quality while increased nutrient levels in the water which then would results in algal blooms, proliferation of aquatic weeds and eutrophication.

Mitigation Measures

- Improved waste management should be considered for the upper catchment area.
- Periodically sample water, test, treat and release
- Discourage use of untreated water from the water pan for domestic use
- Planting grass and indigenous tree species at the catchments and around the water pan
- Sensitization of farmers around the water pan on safe use of pesticides in crop production

c) Loss of water through evaporation

Water loss would occur due to high temperatures in the project area and inadequate vegetation coverage leading to high evaporation rates. The implications of the evaporation would be more pronounced on increased surface area of water exposure. While this has not been quantified at this point, it is expected to be relatively significant

Mitigation Measures

- Planting Indigenous trees and shrubs that have low water dissipation capacity should be encouraged around the water pan buffer zone to minimize loss of water through evapo-transpiration processes

(d) Degradation of irrigated land

Water logging, use of pesticides and nutrient leaching as well build-up of salts (salinity) will occur during the operation of the scheme

Possible mitigation measures include

- Farmers to be sensitized on regular soil testing as a monitoring tool to track changes and timely management of any adverse changes.
- Provide adequate drainage for disposal of excess water to avoid water logging and salt built up.
- Sensitize and train farmers on alternative good husbandry practices such as organic farming, safe and effective of agrochemicals.

5.3.3 Negative Social Impacts during operation and Mitigation Measures

a) Danger of drowning

Water pan is open without a fence. Children are the most vulnerable to drowning if they resort to drawing water directly from the pan. Livestock are also at the risk of drowning if they drink water directly from the water pan. Other community members drawing water for domestic use are also at the risk if adequate measures are not put in place to restrict the water access points in the water pan.

Mitigation Measures

- Community sensitization and awareness creation
- Erecting a perimeter fence around the water pan with a gate which should be kept under lock and key by Kapsitii Project Management Committee
- Construction of domestic water drawing point and a cattle trough.

(b) Water use conflicts

During this phase, many people in the surrounding would want to use water for different purposes. Some of the likely use include domestic, livestock and irrigation. Since the intended purpose of the project is to provide water for irrigation for production of food crops and horticulture. There is likely to be a conflict if proper measures are not put in place to manage the usage among the various members of the community.

Mitigation Measures

- Sensitization on water conservation techniques

- The community to set and follow the water abstraction and be supervised by Kapsitii Project Management Committee.
- Farmers training on water use
- Establishment of Water User Committee

(c) Risk of Water Borne diseases

Water logging may promote the breeding of mosquitoes. Working in the fields without gumboots may also transmit schistosomiasis among farmers and the community.

Mitigation measures include

- Farmers to provide for drainage to prevent disease outbreak
- Sensitise and educate the community about the prevention of water borne diseases
- Sensitise the community not to use untreated water for domestic purposes
- Farmers and the community to wear gumboots when working in the water-logged areas

5.4 Decommissioning Phase

Decommissioning will be based on review of cost, health, safety and ecological risk factors. The monitoring will be a continuous, methodologically and technically standardized process involving *in situ*, and laboratory analysis of physiochemical variables. Both groundwater quantity (e.g., groundwater level and recharge rates) and quality monitoring (analysis of selected physical and chemical variables) will apply. The applicable limits are spelt under water quality regulations and World Health organization (WHO). Decommissioning will apply if any of the parameters pose risk to the health and safety of the users.

5.4.1 Positive impacts in Decommissioning Phase

Some of the positive impacts resulting from decommissioning of the project include:

- a) **Restoration of the environment to its original State:** Decommissioning the site will mean that the site be restored to nearly its original status for example landscaping and growing of trees. This will mean that the environment will stop experiencing further interference associated with developments.
- b) **Job opportunities accruing from restoration works:** The activities will require manual labor as well as other workers in order to restore the site and eventually creating jobs and generating income.
- c) **Habitat restoration:** Effects such as water logging, disturbance for microhabitats and loss of biodiversity will be reversed with decommissioning.

5.4.2 Negative Environmental Impacts during Decommissioning Phase

(a) Generation of solid waste

The demolition exercise will entail removal of structures that will lead to accumulation of solid wastes that will emanate from the following activities:

- Demolition and removal of all the concrete works
- Demolition and removal of all the sanitary utilities
- Demolition and removal of the wooden and roofing materials
- The scrap metal and plastic water tanks

Proposed mitigation and management measures

To control the generation of noise and ensuring compliance with relevant noise standard include:

- Contractor to Provide Personal Protective Equipment and clothing (PPE/C) to those actively engaged in the works at the site
- Contractor to provide for waste collection equipment
- Contractor to organize with a NEMA registered waste management handler and County government of Kericho for waste collection and disposal

(b) Noise and dust pollution

Blasting or use of heavy machinery will produce a lot of dust and noise during restoration works.

Proposed Mitigation measures.

- Put off idle machinery to reduce noise pollution.
- Use of machinery that are fitted with appropriate mufflers to reduce noise
- Use of ear muffs by workers to reduce impacts of excess noise.
- Control the speed of running machines
- Sprinkle water on the ground surface to reduce dust

(c) Oil spills/Fuels and Lubricants

Oils and grease spillage on the ground may cause contamination to the soil and groundwater. Proposed mitigation and management measures are:

- Proper maintenance of vehicles and other equipment (using petroleum products) to avoid fuels and lubricants spills at the project site.
- The contractor should properly handle, storage, and disposal off oils and greases and their wastes during construction by ensuring that servicing is strictly done at designated servicing yard or external petroleum station

(e) Air Pollution

The potential sources of air pollution include emission from trucks and other vehicles employed in decommissioning.

Proposed mitigation measures are

- Ensure that maintenance on all machinery is done regularly to avoid the emission of noxious gases.
- Drivers and machine operator to avoid unnecessary running of motor vehicle engines and machinery when not in use

5.4.3 Negative Social Impacts during Decommissioning Phase

(a) Loss of livelihoods and income: This will happen when the water pan is abandoned and unable to support irrigated agriculture anymore.

Proposed Mitigation measures

- Sensitize/prepare the public on how to cope with loss of livelihoods through trainings

- Sensitize the farmers to diversify livelihood enterprises.

(b) Displacement of farming population

Decommissioning of the project will render some people jobless and may opt to relocate to other areas. This may strain families especially children.

Proposed mitigation measures

- Families and the community at large should be sensitized early enough on the impending decommissioning.
- Families should be supported in identifying new opportunities.

(c) Food insecurity

As the project is decommissioned, there will be no water supply to support farming in the area the community will suffer big losses in terms of losing their main source of food.

- Sensitize and train farmers on livelihood diversification

(d) Occupational Health and Safety risks

Human labour and machinery will be used in demolition works with possibilities of injuries to workers. Possible mitigation measures include;

- ✓ The work site will be registered with Directorate of Occupational Safety and Health (DOSH) and the contractor will be required to ensure all necessary records on workers are kept during construction phase by providing PPEs, registration of workers, train workers on emergency preparedness and response while ensuring all SOPs on Covid 19 containment are adhered to

CHAPTER SIX

ENVIRONMENTAL & SOCIAL MANAGEMENT AND MONITORING PLAN (ESM&MP)

6.1 Introduction

An environmental management/monitoring plan has been developed to assist the proponent in mitigating and managing environmental impacts associated with the life cycle of the project. The ESMMP has been developed to provide a basis for an Environmental Management System (EMS; ISO 14001 principles) for the project. It is noteworthy that key factors and processes may change through the life of the project and considerable provisions have been made for dynamism and flexibility of the EMP. As such, the EMP will be subject to a regular regime of periodic review.

The ESMMP Involves construction, operational and decommissioning phases of the proposed hatchery project respectively. The EMP will be used as checklist in future environmental audits.

6.2 Monitoring and Audit

6.2.1 Monitoring of ESMMP Implementation

There should be continuous monitoring and follow-up on the project activities to ensure that the ESMMP is implemented and that its objectives are achieved. The implementing staff, the community, and the contractor should ensure that the mitigation measures are put in place as outlined in the ESMMP.

6.2.2 Auditing the ESMMP

The proponents of the project should conduct annual environmental audit audits to ensure the systems are operating effectively. The initial environmental Audit should be conducted within the first year of implementation. The audit needs to ensure that the auditing procedure is in place to ensure that;

- Variations to the ESMMP and non-compliance and corrective actions are documented
- The appropriate environmental training for personnel is undertaken
- Emergency procedures are in place and effectively communicated to the personnel
- A register of major accidents is in place and other documentation related to the ESMMP
- The appropriate corrective and preventive action is taken by the contractor once instructions have been issued.
- The environmental management of the proposed project should strengthen the mobilization of the beneficiary communities with regard to environmental and health aspects and render the proposed community water project sustainable.

6.3 Environmental and Social Management and Monitoring Plan (ESM&MP) for the Construction Phase

(a) Environmental Management and Monitoring Plan during Construction						
Environmental impact	Proposed Mitigation Measures	Monitoring Indicator	Responsibility	Means of Verification	Frequency/ Time Frame	Est. Cost (KShs.)
Clearance of vegetation, soil erosion and loss of biodiversity	<ul style="list-style-type: none"> ○ Replant disturbed areas with grass and indigenous tree species to replace the lost plants ○ Use excavated earth materials for backfilling ○ Re-vegetation of excavated areas ○ Channeling of surface. ○ Disposal of excess excavated material on designated locations 	<ul style="list-style-type: none"> ❖ No. of seedlings replanted and surviving. ❖ Catchment and soil conservation Management plans ❖ Reduced Erosion ❖ Reduced suspended dust 	Design Engineer and Contractor,	Requisition invoices Site observation Implementation plans Site supervision report	2 months	100,000
Air quality degradation/Dust emissions	<ul style="list-style-type: none"> ○ Regular sprinkling of water to be done on open surface and dust grounds unless paving is done; ○ Employees involved in the construction work to be provided with dust masks; ○ Contractor to enforce strict use of personal protective clothing ○ Workers shall be trained on dust minimization techniques; 	<ul style="list-style-type: none"> ❖ Water sprays and mists ❖ No. of designated hauling/stockpiles areas ❖ No of suitable PPE/. ❖ No of drivers trained/advised ❖ No. of times water is sprinkled during excavation 	Contractor	Work Progress Report	weekly	70,000
Vibrations and Noise Pollution	<ul style="list-style-type: none"> ○ Maintain the levels of noise pollution from the machinery in accordance to the manufacturer's specifications ○ All construction work to be limited to daytime only ○ Immediate neighbors to be notified in advance on the date of commencement of construction work. ○ All employees likely to be exposed to ear noise to be provided with ear protectors 	<ul style="list-style-type: none"> ❖ No. of workers provided with dust mask and other PPES ❖ No. of trainings conducted 	❖ Contractor	Work Progress Report	Daily and weekly monitoring	-

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Loss of flora and fauna	<ul style="list-style-type: none"> ○ Clearing of vegetation shall be kept to a minimum ○ Trees should be trimmed rather than removed wherever possible ○ Upon completion of works the area surrounding the water pan should be revegetated to form the buffer ○ Sensitization of construction work-force on environmental conservation and ecological protection 	<ul style="list-style-type: none"> ❖ The extent of habitat diversity retained ❖ Incidences of invasive species ❖ Number of sensitization meetings on the importance of wildlife conservation 	Contractor	Incidence Report Attendance list Photos	1 month	75,000
Risk of spills and leaks	<ul style="list-style-type: none"> ○ Take adequate measures on spilled substance on water and land ○ Ensure minimal spillage and if there is spillage then scooping and adequate dumping is required ○ Water from cleaning of equipment should be not be discharged into water courses. ○ Regular maintenance of site equipment and machinery should be carried out to ensure any leakages are detected and controlled. The motor vehicles and heavy equipment should be serviced according to manufacturer’s requirements to limit the exhaust emissions. ○ Safety procedures for fuel storage and re-fueling should be well understood and implemented by site staff ○ Oil residuals including waste oil, lubricants, used filters, should be carefully collected and stored for safe disposal, in order to prevent migration of contaminant hydrocarbons into storm water or groundwater resources. 	<ul style="list-style-type: none"> ❖ No oil spills cases reported ❖ Number of machines maintained 	Contractor	Maintenance records Incident occurrence books	monthly	50,000

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Generation of Solid waste	<ul style="list-style-type: none"> ○ Solid waste to be disposed only at licensed disposal sites; ○ Provision of solid waste collection facilities (waste bins) ○ Sensitization of construction workers on proper disposal of solid wastes ○ The contractor will maintain all site vehicles and equipment to a serviceable state. ○ Provision of temporary septic pit for workers on site ○ Liaise with the County Government of Kericho and local NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes 	<ul style="list-style-type: none"> ❖ Quantity of wastes generated, reused or recyclable ❖ No of litter bins ❖ Waste disposal site ❖ Licensed waste handler in place ❖ No of trainings done on solid waste management 	Contractor	<ul style="list-style-type: none"> ❖ Tracking documents ❖ Receipts ❖ Attendance ❖ Register ❖ Photos ❖ Licenses/ MOU ❖ Observation ❖ Interviews 	monthly	200,000
(b) Construction phase Social Management & Monitoring Plan						
Occupational Health and Safety (OHS)	<ul style="list-style-type: none"> ○ The Contractor to place labels and warning signs in areas posing risk of injury or accidents ○ The contractor labels and warn the public on the danger of construction activities ○ The contractor to provide all workers with full protective gear (PPEs) ○ The contractor to train and provide First-aid Kit to the workers ○ The contractor to have Incident and Accident Registers on site for recording of injuries or any OHS incidence ○ Contractor to prepare a contingency/emergency management and preparedness plan for accident response. ○ Employ drivers who are well trained. 	<ul style="list-style-type: none"> ❖ No of Labels and warning signs ❖ No of workers using PPEs on use by those involved at the site ❖ Trained officers on First-aid Kit ❖ Incidents reported ❖ Number of COVID-19 sensitizations conducted and Records of participants etc. ❖ Emergency contacts at the site 	Contractor	<ul style="list-style-type: none"> ● Purchase receipts ● Reports ● Attendance register ● Contingency plan for accident response in place 	Weekly	50,000

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	<ul style="list-style-type: none"> ○ Providing Emergency plans, communicating them to be understood. ○ Train workers on administering first aid ○ Contractor to hire a qualified health and safety officer to oversee OSH issues. ○ Discourage unauthorized people from the project site 	<ul style="list-style-type: none"> ❖ Records of testimonials of drivers ❖ No of persons insured 				
Social conflict	<ul style="list-style-type: none"> ○ Involve local administration and other social groups like the church in social mediation and moderation ○ Notify all the affected persons of any incident ○ Implement an effective and efficient grievance redress mechanism where all conflicts related to the project are addressed. 	<ul style="list-style-type: none"> ❖ No. of cases/ incidents/conflicts addressed 	Contractor	<ul style="list-style-type: none"> ● Incident Register 	1 month	-
Increase in incidences of HIV/AIDS and STIs	<ul style="list-style-type: none"> ○ Contractor to sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases to be instituted and implemented as part of the Contractor’s Health and Safety Management Plan (CHSMP) to be enforced by the Supervising Engineer. ○ Periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor’s Staff. ○ Controlled access to Contractor’s Workforce Camps by outsiders. ○ Contractor to provide standard quality condoms at the construction site during the construction period. 	<ul style="list-style-type: none"> ❖ Number of worker and community sensitized ❖ Availability of condom dispensing equipment ❖ Number of meetings held for workers and community 	Contractor	<ul style="list-style-type: none"> ● Attendance registers ● Site visits ● Records of dispensed condoms 	monthly	50,000
Spread of COVID-19 amongst workers	<ul style="list-style-type: none"> ○ The Contractor will develop a SOPs for managing the spread of Covid-19. The SOPs shall be in line with the World Bank guidance on COVID-19, 	Availability of: <ul style="list-style-type: none"> ❖ SOP(s), ❖ Training material, 	All the Project components	<ul style="list-style-type: none"> ● SOPs, 	monthly	60,000

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	<p>Ministry of Health Directives, and site-specific project conditions.</p> <ul style="list-style-type: none"> ○ Mandatory provision and use of appropriate Personal Protective Equipment (PPE) ○ Maintain social distancing at least 2 meters. ○ All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs. ○ The project shall put in place means to support rapid testing of suspected workers for covid-19. ○ Install handwashing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used. ○ Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, doorknobs, handrails etc. 	<ul style="list-style-type: none"> ❖ PPE, ❖ Sanitizing facilities, ❖ Installed handwashing equipment 	Supervising Eng. & Contractor(s)	<ul style="list-style-type: none"> ● Project assessment reports, ● Purchase orders/receipts, ● Photos 		
<p>COVID 19 Spread of COVID-19 amongst community members during consultations processes</p>	<ul style="list-style-type: none"> ○ Electronic means of consulting stakeholders and, holding meetings, whenever possible, shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced; ○ Avoid concentrating of more than 15 community members at one location. ○ Maintaining social distancing at least 2 meters 	<ul style="list-style-type: none"> ❖ Availability of SOP(s), Training material, PPE, sanitizing facilities ❖ Availability of SOP(s), Training material, PPE, sanitizing facilities ❖ No. of participants registered online. ❖ Evidence of use of electronic media for information 	All the Project components Communication / engagement expert in the Team	<ul style="list-style-type: none"> ● Purchasing orders, ● Receipts 	Monthly	70,000

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	<ul style="list-style-type: none"> ○ The team will be provided with appropriate PPE such as masks for them and for the number of people they intend to meet; ○ Hold meetings in small groups, mainly in form of FGDs ○ Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants. 	dissemination/engagement e.g. printed electronic mails, addresses of video links created etc				
Labor risks including labor influx	<ul style="list-style-type: none"> ○ Local community members will be given priority in employment opportunities, in casual and unskilled labour. ○ Train the community on the project requirements and product. ○ Training of PMC, SAIC, CESSCOs and Community on policing of the project 	<ul style="list-style-type: none"> ❖ Register of workers engaged in the project. ❖ Number of trainings for PMC, SAIC, CESSCOs and Community policing of the project ❖ Report on local administration on GBV incidences monitoring, assessment, prevention, and control. ❖ Proportion of workers who are locals 	Contractor	<ul style="list-style-type: none"> ● Training reports ● Workers register ● Copies of ID cards 	1 month	50,000
Risk of social conflict	<ul style="list-style-type: none"> ○ Ensure national labour codes & WB policies are included in the Tender Document. ○ Contractor to sensitize the workers on code of conduct. ○ Develop and implement local hiring rules in consultation and partnership with the local community 	<ul style="list-style-type: none"> ❖ Evidence of national labour codes & WB policies in Tender Document. ❖ No of signed code of conduct by the workers ❖ Community user's development plan developed 	Contractor Local Project management committee	<ul style="list-style-type: none"> ● Minutes ● Reports ● Attendance registers 	1 month	10,000

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Increased risk of illicit behavior and crime	<ul style="list-style-type: none"> ○ Sensitize community and workers on expected code of conduct ○ The proponent to ensure that the contractor prioritize the employment of locals and only use the immigrant workers where the skills or capacity lacks. ○ The Contractor to ensure that comprehensive data on all workers involved in the project during construction is kept (register of all workers kept on site). 	<ul style="list-style-type: none"> ❖ No. of workers Sensitized on national code of conduct ❖ Register of all worker on site/ Proportion of locals in the workforce ❖ Review report on workers behavior 	Contractor	<ul style="list-style-type: none"> ● Minutes ● Reports ● Attendance registers 	1 month	10,000
Sexual Exploitation and Abuse by project workers against community members	<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). 	<ul style="list-style-type: none"> ❖ SEA Action Plan ❖ Code of Conduct ❖ Number of staff trainings ❖ SEA FP ❖ Community Liaison trained in PSEA ❖ IEC materials for workers’ sites and community ❖ Discrete SEA reporting pathway 	Contractor GBV Expert	<ul style="list-style-type: none"> ● SEA action plan ● Attendance registers 	1 month	30,000
Gender-based Violence (GBV) at the community level	<ul style="list-style-type: none"> ○ The contractor will implement provisions that ensure that GBV at the community level is not triggered by the Project, including: ○ Effective and on-going community engagement and consultation, particularly with women and girls; ○ Review and updating of specific project components that are known to heighten GBV risk at the community level, e.g. compensation 	<ul style="list-style-type: none"> ❖ Number of SEA action plans prepared ❖ Code of conduct prepared ❖ Number of staff trainings on SEA held. ❖ -Number of PSEA community liaison trainings carried out ❖ Number of IEC materials available 	Supervision Consultant GBV Expert	<ul style="list-style-type: none"> ● GBV plans ● Attendance registers ● GBV action plans 	1 month	50,000

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	schemes; employment schemes for women; delivery of water supplies; etc.					
Theft, vandalism and destruction of infrastructure	<ul style="list-style-type: none"> ○ Ensure the general safety and security of the site by providing day and night security guards ○ Ensure only authorized personnel get access to the site during construction. ○ Develop mechanism to address all complaints at the site. ○ Fence the site 	<ul style="list-style-type: none"> ❖ No. of items vandalized or stolen ❖ No. of cases/complaints on vandalism registered 	Contractor Project management committee	<ul style="list-style-type: none"> • Registers 	monthly	100,000

6.4 Environmental and Social Management and Monitoring Plan for Operation Phase

(a) Operation phase Environmental Management & Monitoring Plan						
Environmenta l impact	Proposed Mitigation Measures	Monitoring Indicator	Responsibilit y	Means of Verification	Timelines	Est. Cost (KShs.)
Soil erosion and Siltation	<ul style="list-style-type: none"> ○ Use erosion control techniques which disperse erosive energy and avoid concentrating it e.g providing good vegetative cover will disperse the energy of rain drops and contour drainage will slow down surface runoff. ○ Planting indigenou s tree species along the catchment of the water pan ○ Periodic desilting of the water pan by the community spearheaded by the management committee 	No. of soil conservation structures established Length of soil conservation structures	KPMC	Soil and land management plan and Report	O&M	10,000
Environmental degradation from use of pesticides	<ul style="list-style-type: none"> ❖ Formulate an IPM guideline ❖ Train farmers on safe use of pesticides ❖ Procure PPE demo kits and hold demonstrations at farm level 	Number of Trainings Held Attendance list of participants during the training sessions	❖ KPMC, CPCU, Farmers	Minutes and records of training Invitation register Proceedings of the training	Continuou s	200,000

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		Committees on IPM formed				
Water quality degradation	<ul style="list-style-type: none"> ○ Improved waste management should be considered for the upper catchment area. ○ Periodically sample water, test, treat and release ○ Discourage use of untreated water from the water pan for domestic use ○ Planting grass and indigenous tree species at the catchments and around the water pan ○ Sensitization of farmers around the pan on safe use of pesticides in crop production 	<p>Number of water testing done</p> <p>Number of farmers trained on safe use of agrochemicals</p>	<ul style="list-style-type: none"> ○ KPMC ○ Farmers ○ Agricultural officers 	<p>Water testing report</p> <p>Number of trainings, certificates</p>	Through out the Operational period	10,000
Loss of water through evaporation	<ul style="list-style-type: none"> ○ Planting Indigenous trees and shrubs that have low water dissipation capacity should be encouraged around the water pan buffer zone to minimize loss of water through evapo-transpiration processes ○ Introduce economic and financial initiatives towards water saving and responsible utilization at consumer points 	Number of trees planted	KPMC Farmers	Requisition Documents Records of tree planting	Operational period	-
Water Logging and Soil Degradation	<ul style="list-style-type: none"> ○ Sensitization on regular soil testing to track changes and timely management of any adverse changes ○ Provide adequate drainage for disposal of excess water to avoid water logging and salt built up ○ Sensitize and train farmers on alternative good husbandry practices such as organic farming, safe and effective of agrochemicals 	<ul style="list-style-type: none"> • Sensitization forums conducted <p>Number of drainages provided</p>	KPMC Farmers	Physical examination for drainages	Through out	-
Water use conflict	<ul style="list-style-type: none"> ○ Sensitization on water conservation techniques ○ Farmers training on water use 	❖ Existence of a IWRUA	KPMC,	GRM	Operational period	Nil

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	<ul style="list-style-type: none"> ○ Establish IWRUA to formulate and register rules on use, control through participatory process with ○ Establish a Grievance Redress mechanism (GRM) 	Number of grievances adressed	Local Administration GRM Expert			
Danger of drowning	<ul style="list-style-type: none"> ○ Community sensitization and awareness creation ○ Erecting a perimeter fence around the water pan with a gate which should be kept under lock and key by water pan management committee ○ Establish a project management committee. ○ Employing a guard ○ Construction of domestic water drawing point and a cattle trough. 	<ul style="list-style-type: none"> ❖ sensitization and awareness Presence of a guard 	KPMC, Local Administration	Minutes	Operational period	Nil
Occupational Health and Safety risks	<ul style="list-style-type: none"> ○ Provide adequate first-aid facilities in the project sites to handle medical emergencies whenever necessary ○ Discourage unauthorized idlers at the site ○ Should there be an accident, the injured person should be given first and immediately taken to the hospital and investigation initiated immediately 	First aid kit provided	KPMC	Incidence Register/ Report	weekly	10,000
(b) Operational phase Social Management & Monitoring Plan						
Social conflict (Water use conflicts)	<ul style="list-style-type: none"> ● Involve local administration and other social groups like the church in social mediation and moderation ● Notify all the affected persons of any incident ○ Implement an effective and efficient grievance redress mechanism where all conflicts related to the project are addressed. 	<ul style="list-style-type: none"> ○ No. of cases/incidents/conflicts registered and addressed 	<ul style="list-style-type: none"> ○ Proponent 	<ul style="list-style-type: none"> ● Incident Register 	1 month	-
Human-livestock conflict.	<ul style="list-style-type: none"> ○ The proponent in collaboration with the department of livestock should sensitize herders and the general community on possible conflicts that may arise 	<ul style="list-style-type: none"> ● Number of cases reported in the community. 	Local administration Farmers WRA	<ul style="list-style-type: none"> ● Reports on resolved cases 	Operation and maintenance phase	50,00

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	<ul style="list-style-type: none"> ○ Fence off the farms to minimize conflicts between crop farmers, livestock and wildlife ● Provide livestock watering troughs outside the farms to avoid livestock and wildlife straying into crop farms 		Livestock Extension Officers			
Risk of social conflict	<ul style="list-style-type: none"> ○ Sensitize the community on equity sharing of water resources. ○ Develop and implement plan for water use with the local community ○ Sensitize community on expected code of conduct while sharing resource 	<ul style="list-style-type: none"> ● Community user's development plan developed ● No. of community Sensitization forums held on code of conduct and resource sharing 	KPMC	<ul style="list-style-type: none"> ● Minutes ● Reports ● Attendance registers 	1 month	10,000
Gender based violence	<ul style="list-style-type: none"> ○ Train the project beneficiaries on human rights and consequences of gender-based violence ○ Sensitize the community on the importance of sharing resources in families to reduce tension ○ Awareness creation and sensitization of workers and the local communities on the associated dangers and preventive measures 	<ul style="list-style-type: none"> ○ Number of sensitization meetings ○ Number of trainings on GBV ○ Cases of gender-based violence reported 	Social services officer Agriculture staff Local administration . Community.	<ul style="list-style-type: none"> ❖ Incidence Report ❖ Attendance list 	monthly	50,000
Theft, vandalism and destruction of infrastructure	<ul style="list-style-type: none"> ● Ensure the general safety and security of the site by providing day and night security guards ● Ensure only authorized personnel get access to the site during construction. ● Develop mechanism to address all complaints at the site. ● Fence the site 	<ul style="list-style-type: none"> ● No. of items vandalized or stolen ● No. of cases/complaints on vandalism registered 	Contractor Project management committee	<ul style="list-style-type: none"> ● Registers 	monthly	50,000

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Water borne diseases	<ul style="list-style-type: none"> The members of the community should be sensitized on preventive and control measures of water borne diseases Boil or treat drinking water The Ministry of public health should ensure regular spraying within the project area to control mosquitoes Regular flushing of stagnant water to destroy breeding grounds for mosquitoes Construction of pit latrines should be encouraged to control diseases. 	<ul style="list-style-type: none"> No. of incidences (cases) reported No. of mosquito nets distributed No. of disease surveillance conducted No. of individuals boiling and treating water for drinking 	<ul style="list-style-type: none"> Community PHO 	<ul style="list-style-type: none"> Incidence Report Surveillance Report Report of domestic water use 	Project implementation	50,000
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6.5 Environmental and Social Management and Monitoring Plan for Decommissioning Phase

(a) Decommissioning phase Environmental Management & Monitoring Plan						
Environment al impact	Proposed Mitigation Measures	Monitoring Indicator	Responsibility	Means of Verification	Timelines	Est. Cost (KShs.)
Generation of solid waste	<ul style="list-style-type: none"> The wastes produced should either be reduced reused or recycled Provide facilities for proper handling and storage of demolition materials to reduce the amount of waste caused by damage Use materials that have minimal packaging to avoid the generation of excessive packaging waste. 	<ul style="list-style-type: none"> Quantity of solid waste generated Number of waste disposal bins/skips provided Registered waste collector engaged 	Contractor	Tracking documents Waste transport Licenses Inventory of waste management	Weekly	-
Noise pollution	<ul style="list-style-type: none"> Reduce noise by sensitizing drivers in the project Use manual labor as much as possible. Restriction of activities to daytime Workers within the vicinity of high-level noise to be provided with adequate PPE. 	<ul style="list-style-type: none"> No of sensitization meetings No. of PPE procured 	Contractor	Sensitization Report Attendance list	Weekly	-

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	<ul style="list-style-type: none"> ○ No idling of vehicles and machinery if not in use, they should be switched off. 					
Air Pollution	<ul style="list-style-type: none"> ○ Ensure that maintenance on all machinery is done regularly to avoid the emission of noxious gases. ○ Drivers and machine operator to avoid unnecessary running of motor vehicle engines and machinery when not in use 	<ul style="list-style-type: none"> ○ Number of vehicles and machines maintained 	Contractor	Maintenance records	Weekly	-
(b) Decommissioning phase Social Management & Monitoring Plan						
Loss of livelihoods and incomes	<ul style="list-style-type: none"> ○ Sensitize the community on how to cope with loss of livelihoods through trainings ○ Sensitize the farmers to diversify livelihood enterprises. 	<ul style="list-style-type: none"> ○ Number of sensitization forums held 	❖ KPMC	Minutes	1 week	-
Occupational Health and Safety (OHS)	<ul style="list-style-type: none"> ○ The Contractor to place labels and warning signs in areas posing risk of injury or accidents ○ The contractor labels and warn the public on the dangers associated with decommissioning activities ○ The contractor to provide all workers with full protective gear (PPEs) ○ The contractor to train and provide First-aid Kit to the workers ○ The contractor to have Incident and Accident Registers on site for recording of injuries or any OHS incidence ○ Contractor to prepare a contingency/emergency management and preparedness plan for accident response. ○ Contractor to hire a qualified health and safety officer to oversee OSH issues. ○ Discourage unauthorized people from the decommissioning sites 	<ul style="list-style-type: none"> ○ No of Labels and warning signs ○ No of decommissioning workers using PPEs on use by those involved at the site ○ Trained officers on First-aid Kit ○ Incidents reported ○ Emergency contacts at the site 	❖ Contractor	Purchase receipts Reports Attendance register Contingency plan for accident response in place	Weekly	50,000

Barngoror/Kapsitii (Kapsakyat) Water Catchment Conservation Project, Summery project Report- January 2022

Social conflict	<ul style="list-style-type: none"> ○ Involve local administration and other social groups like the church in social mediation and moderation. ○ Notify all the affected persons of any incident ○ Implement an effective and efficient grievance redress mechanism where all conflicts related to the project are addressed. 	<ul style="list-style-type: none"> ○ No. of cases/ incidents/conflicts addressed 	<ul style="list-style-type: none"> ○ Contractor 	Incident Register	1 month	-
Increase in incidences of HIV/AIDS and STIs	<ul style="list-style-type: none"> ○ Contractor to sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases to be instituted and implemented as part of the Contractor’s Health and Safety Management Plan (CHSMP) to be enforced by the Supervising Engineer. ○ Periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor’s Staff. ○ Controlled access to Contractor’s Workforce Camps by outsiders. ○ Contractor to provide standard quality condoms at the construction site during the construction period. 	<ul style="list-style-type: none"> ○ Number of worker and community sensitized ○ Availability of condom dispensing equipment ○ Number of meetings held for workers and community 	<ul style="list-style-type: none"> ❖ Contractor ❖ KPMC 	Attendance registers Site visits	monthly	80,000
Spread of COVID-19 amongst workers	<ul style="list-style-type: none"> ● The Contractor will develop SOPs for managing the spread of Covid-19. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives, and site-specific project conditions. ● Mandatory provision and use of appropriate Personal Protective Equipment (PPE) ● Avoid concentrating of more than 15 workers at one location. ● Maintain social distancing at least 2 meters. ● All workers and visitors accessing worksites every 	Availability of: <ul style="list-style-type: none"> ○ SOP(s), ○ Training material, ○ PPE, ○ Sanitizing facilities, ○ Installed handwashing equipment. 	<ul style="list-style-type: none"> ○ All the Project components ○ Supervising Eng. & Contractor(s) 	SOPs, Project assessment reports, Purchase orders/receipts, Photos	monthly	60,000

	<p>day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs.</p> <ul style="list-style-type: none">• The project shall put in place means to support rapid testing of suspected workers for covid-19.• Install handwashing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used.					
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CHAPTER SEVEN

CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The findings from the assessment of environmental and social issues for the proposed Kapsitii Catchment Conservation Project show that the positive impacts will accrue from the project are significant when compared to the anticipated negative impacts. The project design has taken into consideration measures to reduce/ minimize some of the identified negative impacts while ensuring compliance to all the applicable laws, regulations and standards. A detailed mitigation measure for each of the negative impacts are provided in the ESMP. Based on the findings the ESIA concludes that construction of the Kapsitii Catchment Conservation project will not result into significant negative impacts that can compromise the environmental and social wellbeing of the Kapsitii community.

7.3 Recommendations

It is the view of the experts that the proposed project be allowed to go ahead provided the specified mitigation measures are implemented to as outlined in the ESMP. The project is thus recommended for NEMA approval and implementation subject to an annual audit. On approval *the ESMMP should be shared with the Contractor and the same should be required to prepare Contractor-Specific Environmental and Social Management Plan (C-ESMP)*. The CPCU through the CESSCO in consultation with relevant stakeholders should monitor and report on the implementation of the ESMMP

REFERENCES

- 1) Republic of Kenya: Environmental management and Coordination Act, 1999,
- 2) Republic of Kenya; The Water Act 2002
- 3) World Bank Environmental and Social Safeguard Policies
- 4) Kapsitii Project Design Report by County Government of Kericho,
- 5) Republic of Kenya: National Water Master Plan,
- 6) Environmental Management and Coordination Act (EMCA) 1999 and amendments of 2019.
- 7) Public Health Act Chapter 242 Laws of Kenya. Government printer, Nairobi.
- 8) Water Act Law of Kenya. Kenya Gazette supplements no. 107 (Acts No 9) Nairobi October, 2002
- 9) Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. Government printer,
- 10) Physical and land use Planning Act, 2019. Laws of Kenya.
- 11) Land Acts 2011 Laws of Kenya
- 12) County Government Act, 2012.

ANNEXES

Annex 1 : Environmental & Social Safeguard Screening Checklist

KCSAP KERICHO COUNTY -ESS SCREENING CHECKLIST

ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST
ESM SUB-PROJECTS SCREENING CHECKLIST
(SUB-PROJECTS SCREENING PROCESS BY BENEFITTING
COMMUNITIES/AGENCIES)


Section A: Background information

Name of County... <i>Kericho County</i>	
Name of CSU/Monitoring Officer/Researcher/ESSO: <i>Okal Jacob O.</i>	
Sub-project location... <i>Kapsitii Village, Kaplelatet Ward</i>	
Name of CBO/Institution.....	
Postal Address:.....	
Contact Person..... <i>Daniel Ngeny</i> Cell phone:... <i>0729 683873</i>	
Sub-project Name... <i>Barngoror/Kapsitii Catchment Conservation Scheme to rehabilitate degraded lands</i>	
Estimated cost (KShs.)... <i>26 million</i>	
Approximate size of land area available for the sub-project..... <i>2 Acres</i> ...	
Objectives of the subproject... <i>To enhance the capacity of land to support agricultural production and productivity.</i>	
Activities/enterprises undertaken... <ul style="list-style-type: none"> • <i>Establishment of land and water conservation structures</i> • <i>Promotion of water harvesting techniques</i> 	
How was the sub-project chosen?... <i>Public participation during the development of CIDP 2018-2022 and prioritization during the PICD process</i>	
Expected subproject duration:... <i>1 year</i>	

Section B: Environmental Issues

Will the sub-project:	Yes	No
Create a risk of increased soil erosion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create a risk of increased deforestation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create a risk of increasing any other soil degradation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect soil salinity and alkalinity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Divert the water resource from its natural course/location?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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KCSAP KERICHO COUNTY -ESS SCREENING CHECKLIST

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

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

Section C: Socio-economic Issues

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

KCSAP KERICHO COUNTY –ESS SCREENING CHECKLIST

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? <i>NB: If the answer is yes, the sub-project should not proceed.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adversely affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, protected areas including national parks, reserves or local sanctuaries, etc.)? <i>NB: If the answer is yes, the sub-project should not proceed.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect the indigenous biodiversity (flora and fauna)? <i>NB: If the answer is yes, the sub-project should not proceed.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly? <i>NB: If the answer is yes, the sub-project should not proceed.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect the aesthetic quality of the landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduce people's access to the pasture, water, public services or other resources that they depend on?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Increase human-wildlife conflicts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use irrigation system in its implementation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

SECTION E: Pesticides and Agriculture Chemical

Will the sub-project:	Yes	No
Involve the use of pesticides or other agricultural chemicals, or increase existing use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cause contamination of watercourses by chemicals and pesticides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cause contamination of soil by agrochemicals and pesticides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Experience effluent and/or emissions discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Export produce? Involve annual inspections of the producers and unannounced inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require scheduled chemical applications?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require chemical application even to areas distant away from the focus?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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KCSAP KERICHO COUNTY -ESS SCREENING CHECKLIST

(iii) Recommended Course of Action

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

- CPCUs and CDE will provide detailed guidance on mitigation measures as outlined in the ESMF; and
- Specific advice is required from CDE¹, Lead Officer 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 EIAs, if recommended, must be carried out by experts registered with NEMA and be followed by monitoring and review. During the process of conducting an EIA the proponent shall seek views of persons who may be affected by the sub-project. The WB policy set out in OP 4.01 requires consultation of sub-project affected groups and disclosure of EIA's conclusions. In seeking views of the public after the approval of the sub-project, the proponent shall avail the draft EIA report at a public place accessible to project-affected groups and local NGOs/CSOs.

Completed by: *Okal Jacob O*

Position / Community: *CESSCO KCSAP Kericho County*

Date *8th September 2020*

Field Appraisal Officer (CDE/NEMA) Recommendation

*Conduct an Environmental and
social impact assessment in
accordance with EICA no. 8 1999.*

Signature: *[Signature]*

Date *18/9/2020*



KCSAP KERICHO COUNTY -ESS SCREENING CHECKLIST

Note:

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

Annex 2: Land Ownership Documents: Title Deed

DOCUMENTATION OF LAND CONTRIBUTION (ANNEX 3 OF ESMF)
FOR
THE KIPSAKYAT WATER CATCHMENT CONSERVATION PROJECT

The following agreement has been made

On
15th day of DECEMBER 2021

Between
KIMANCA FAMILY the Owner)

and
TABOITA COMMUNITY (the Recipient).

1. That the Owner holds the transferable right of ha. of land
LR. NO. 638 KER/KOPET in KALONGET / TABOITA SUB-LOCATION
2. That the Owner testifies that the land is free of squatters or encroachers and not subject to other claims.
3. That the Owner hereby grants to the Recipient this land for the construction and development of KIPSAKYAT Water Catchment Conservation Project for the benefit of the villagers and the public at large.
4. That the Owner will not claim any compensation against the grant of this land.
5. That the Recipient agrees to accept this land (LR NO: 638 of 0.8 Ha) for the purposes mentioned. 6. That the Recipient shall construct and develop the KIPSAKYAT Water Catchment Conservation Project and take all possible precautions to avoid damage to adjacent land/structure/other assets.
7. That both the parties agree that the KIPSAKYAT Water Catchment Conservation Project so constructed/developed shall be public premises.
8. That the provisions of this agreement will come into force from the date of signing of this deed.

Signature of the Owner(s):		
1. Name <u>EMMILY CHEMOTAI CHEBOKEN</u>	Signature <u>[Signature]</u>	Date <u>15/12/2021</u>
2. Name <u>CHEQUITUI A. YEGON YEGON</u>	Signature <u>[Signature]</u>	Date <u>15/12/2021</u>
3. Name <u>JONATHAN K. PIP</u>	Signature <u>[Signature]</u>	Date <u>15/12/2021</u>
4. Name <u>ESTHER KIECH</u>	Signature <u>[Signature]</u>	Date <u>16/12/2021</u>
5. Name _____	Signature _____	Date _____

Signature of the Recipients (..... Project Management Committee):

1. Name CHEW/IN BII Signature [Signature] Date 15/12/2021
Position/Designation CHAIRMAN
2. Name TANU PHILEMON Signature [Signature] Date 15/12/2021
Position/Designation SECRETARY
3. Name CHRISTOPHER ROTICH Signature [Signature] Date 15/12/2021
Position/Designation COMMITTEE

Witnesses (Area Chief, Assistant Chief or Ward Administrator):

1. Name Solomon Ye Yeeon Signature [Signature] Date 15/12/2021
Position/Designation ASSISTANT CHIEF
2. Name _____ Signature _____ Date _____
Position/Designation _____
3. Name _____ Signature _____ Date _____
Position/Designation _____



Attestation by Advocate

Name _____ Signature/Stamp _____ Date _____

Confirmation of County Lands Office

Name _____ Signature/Stamp _____ Date _____

Confirmation of KCSAP County Project Coordinating Unit

Name _____ Signature/Stamp _____ Date _____

Annex 3: Attendance List during Public Participation

ATTENDANCE LIST

ACTIVITY: PUBLIC PARTICIPATION FOR THE PROPOSED BARGOROR/KAPSITII
WATER CATCHMENT CONSERVATION PROJECT

DATE: 03/01/2021

No.	Name	Organization	Telephone	Signature
1.	Soleman K. Yegon	Asst. Chief	071103631	
2.	Rodan Ngenod	Kolonget	075766655	
3.	CAROLINE LANGAT	KAPSITII	0125725149	
4.	Martha ChirChir	Chalul	0729683555	
5.	Evaline ChirChir	Tabaita	0992408119	
6.	Florence Langat	Kapsiti	072016024	
7.	Philemon K. Lop	Kapsiti	072539605	
8.	CHERITUT BTI	KAPSITI	0759110608	
9.	STANLEY ROTICH	TABAITA	0721503742	
10.	ANDREW NGENY	KAPSITII	0724010674	
11.	Leubank Langat	Kapsiti	0714317158	
12.	Samuel Kwei	Kapsiti	072097124	
13.	John Bett	Chalul	0728768922	
14.	Kipkimi Erich Bii	Kibugoi	0722135225	
15.	Samuel Lop	Kapsiti	0707769532	
16.	Philemon Yegon	Kapsiti	0713161110	
17.	Daniel Ngeny	Kapsiti	0729683873	
18.	Masshack Jigei	Tabaita	0717183290	
19.	Philemon Tanwi	Kolonget	0714244511	
20.	Lily Langat	Tabaita	0797707778	
21.	Leab Ngenod	Kapsiti		

22 DAVID KIPDOK KIBUGAI 0729649254

23 ISAAC KOEI KIBUGAI 0714333216

Philemon Yegon
2-1-2021

Annex 4 : Minutes of Public Participation

MINUTES OF ESIA PUBLIC PARTICIPATION FOR THE PROPOSED BARNGOROR/KAPSITII WATER CATCHMENT CONSERVATION PROJECT IN KAPSITII VILLAGE, KAPLELARTET WARD, SOIN-SIGOWET SUB-COUNTY IN KERICHO COUNTY HELD AT THE PROPOSED SITE ON 3RD SEPTEMBER 2021

MEMBERS PRESENT

(Attached as an Appendix)

AGENDA

1. Introductions and opening remarks
2. Purpose of the meeting
3. Project Brief
4. Positive Impacts anticipated by Community
5. Concerns, Questions and Responses
6. Suggestions
7. A.O.B. & adjournment

PRELIMINARY

The meeting started with a word of prayer from one of the community members at 11:10 AM. The meeting was held in Kapsitii village on **3rd September, 2021**. The meeting was hosted and chaired by area Chief. A total of **40 community members (13 Female, 27 Male)** attended the ESIA public meeting. The meeting started at 11:20 AM.

MIN. 1 - 3/09/2021: INTRODUCTION & OPENING REMARKS

The area Chief welcomed the attendants for a round of introductions. He highlighted the positive impacts of some the past projects implemented by the donor through a former project LVEMP in the area. Also echoed the benefits witnessed from Kenya Climate Smart Agricultural Project in other areas. Thereafter he welcomed the CESSCO Mr. Jacob Okal, who was accompanied the Sub County Agricultural Officer and the ESIA Consultant to the site, to introduce himself and to talk about the purpose of that day's meeting. Mr. Okal explained the objectives of the KCSAP program and the need of conducting ESIA and emphasized that public participation was a statutory requirement as per the Constitution of Kenya. He then introduced the Agricultural Officer and the ESIA Expert and welcomed him to take over the session.

MIN. 2 - 3/09/2021: PURPOSE OF THE MEETING

The ESIA Expert explained to the participants that consultation and public participation process is a requirement by the Kenyan Constitution and a mandatory procedure stipulated in the Environmental Management and Coordination Act (EMCA) CAP 387 Section 58. According to section 59, and the second schedule of EMCA (Amendments 2019), the proposed Barngoror/kapsitii water catchment conservation project, must undergo Environmental and Social Impact Assessment that includes conducting public meetings for the stakeholders, project affected persons, local community/surrounding enterprises or interested and affected parties. The resulting summary project report must be submitted to the National Environment Management Authority (NEMA) for public and technical review, approval and subsequent issuance of relevant license to enable commencement of project implementation. The consultant also underscored the need to meet the operational safeguards which require that the project submits a summary project report prior to facilitation.

The main objective of the consultation meeting was to

1. Gather comments, suggestions and concerns of the interested and affected parties in the proposed project, and incorporate them in the summary project report (SPR).
2. Disseminate and inform the public and stakeholders about the project with Special reference to its key components and description
3. Create awareness among the public on the need for the ESIA for the proposed project

MIN. 3 – 3/09/2021: PROJECT BRIEF

Mr. Okal Welcomed the Agricultural Officer to brief on project before allowing the ESIA Expert to continue. He started by briefing the community members about the proposed project. With translations from one of the community members, he explained the project design including the gully rehabilitation, the water pan capacity and the expected activities during construction and operation. He also emphasized that the project will be owned by the community and called upon members to support the efforts of the project management committee to ensure sustainability. He then ushered the ESIA Expert to continue with the impacts of the project.

The ESIA team Leader welcomed the attendants to raise their comments, concerns and suggestions in regard to the proposed water catchment conservation and Rehabilitation of the Gully.

MIN. 4 - 3/09/2021: POSITIVE IMPACTS ANTICIPATED BY MEMBERS FROM THE MEETING

The community welcomed the project. They particularly noted that the residents suffered a severe shortage of water in the area for both domestic and livestock use. Most of this was as a result of the degradation in the area that has overwhelmed the community thus seeking intervention through writing proposal that could help in water catchment conservation and rehabilitation of the deep gully.

Some of the positive impacts raised by members are listed below:

1. **Andrew Ngeny:** The proposed water pan will make water accessibility easy. The village will further conserve the environment by planting more indigenous trees especially in the upper catchment
2. **Stanley Rotich:** Sighted that the village had been wasting a lot of time in search of water and especially during drought season and more so women and children who suffered the most. He added that the proposed project is long overdue and should commence immediately to alleviate their suffering.
3. **Leah Ngeno:** She was glad that the availability of a nearby water source will give the women time to rest and concentrate on other responsibilities.
4. **Philemon Rop:**
 - He gave the land degradation history and explained that the gully was cutting majorly on their family land which has become unproductive and continuously becoming dangerous as the galley increases.
 - Land ownership will also be retained to the community since the place is currently inhabited by gully and not beneficial to the family. He said the family has agreed in unison to give consent to the project and were in the process of signing the consent documents.
 - By planting trees around the pan location, soil erosion will greatly be reduced.
 - The presence of pan water will make small scale irrigation possible.
 - The community will also be able to store water during prolonged drought periods.

MIN 5 - 3/09/2021: CONCERNS, QUESTION & ANSWER SESSION AND RESPONSES

The ESIA Consultant gave community members opportunity to raise questions and concerns on the project and their possible impacts with translations done by the Area agricultural officer where native Kipsigis language was used. The ESIA expert, Sub County Agricultural officer and Kericho CESSCO were available to answer and provide relevant explanations to the satisfaction of participants where possible. The concerns and the feedback given is summarized in the Table below.

- f) **Noise pollution from construction works:** Machines and vehicles engines to be shut off while not in use or in motion.
- g) **Temporary disturbance of source of water:** The community currently relies on the water pan for a range of activities such as cattle drinking, they promised to give the contractor time to work and use the available alternative sources of water.
- h) **Water volume during drought-**Another concern on sustainability was water volumes at the water pan during drought season-The reply from the CESSCO was that the design of the water pan indicates that the water any recharge.
- i) **Safety during construction:** The community will work with the contractor to ensure full cooperation in terms of safety measures in place so as to avoid chances of risk of injuries or other safety issues
- j) **Water Pan safety:** The current water pan is open without a fence and posing risk to community members, children and livestock. They requested that fencing be done around the water pan for safety measures.

MIN 6 - 3/09/2021: SUGGESTIONS FROM MEMBERS IN ATTENDANCE

- The members recommended that unskilled and semi-skilled workers needed for the construction be recruited locally. Skilled workers can be recruited from outside the project area.
- The ESMP should include the need for appropriate PPE such as gloves, gumboots to prevent injuries and accidents
- Ensure the workers/employees of the proposed project are insured through WIBA for adequate compensation due to injury while at work.

MIN 7 – 3/09/2021: A.O.B AND ADJOURNMENT

There being no other business, the meeting ended with a word of prayer from one of the community members at 1:20PM.

Minutes By:

Paul Karanja, ESIA Expert

Signature:



Date: 5/9/2021

Annex 5: Sample Questionnaires

APPENDIX I

**ESIA PUBLIC PARTICIPATION QUESTIONNAIRE FOR THE PROPOSED
SANGOROR/KAPSITII CATCHMENT CONSERVATION SCHEME TO
REHABILITATE DEGRADED LANDS**

The EIA/EA Experts are carrying out Environmental and Social Impact Assessment for the **proposed Sangoror/Kapsitii catchment conservation scheme to rehabilitate degraded lands in Soin/Sigowet Sub County, Kericho County**. In order to ensure environmental sustainability of the project, the proponent wishes to meet the requirements of Environmental Management and Coordination Act (EMCA, 1999) under the jurisdiction of National Environmental Management Authority (NEMA) in the object of Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019, the Legal Notice No. 32 and Schedule 2 of EMCA 1999.

Kindly give us your opinion regarding the project's environmental impacts.

SECTION 1: RESPONDENT'S DETAILS

NAME: Andrew A. Ngeeny TEL: 0724 010674
ID. NO: 6980984 RESIDENCE: Kapsitii SIGN: [Signature]

Gender Male Female
Age 18-30 30-45 Above 46


SECTION 2: QUESTIONS ON PROJECT AWARENESS

Are you aware of the proposed project intended for catchment conservation scheme to rehabilitate degraded lands?

(Yes) (No)

What is the approximate distance between your home/residence/workplace and the proposed project site?

<100m 100-200m 200-500m >500m



Do you support the activities of the proposed project and should the project be implemented as proposed?

Yes No

IF No, Kindly state why

SECTION 3: QUESTIONS ON IMPACTS

What positive impacts do you think will result from the implementation of the proposed project?

Waste for growing fruits
Availability of water for domestic use.

In your own view, are there any negative Social or Environmental impacts associated with the proposed project?

(a) Yes

(b) No

If Yes, please list them

What do you suggest should be done to minimize any negative impacts during the following stages?

(i) Conservation and rehabilitation phase

To build gabions/terracing
establishment of seed nursery to minimize
use of top soil from the selected areas.

SECTION 4: PERSONAL OBSERVATION

Give any other information that may be necessary concerning the proposed Project.

The Dam should also if possible be tap to
the household to minimize overflowing & hence
Refresh water.

THANK YOU FOR YOUR COMMENTS

APPENDIX I

**ESIA PUBLIC PARTICIPATION QUESTIONNAIRE FOR THE PROPOSED
SANGOROR/KAPSITII CATCHMENT CONSERVATION SCHEME TO
REHABILITATE DEGRADED LANDS**

The EIA/EA Experts are carrying out Environmental and Social Impact Assessment for the **proposed Sangoror/Kapsitii catchment conservation scheme to rehabilitate degraded lands in Soin/Sigowet Sub County, Kericho County**. In order to ensure environmental sustainability of the project, the proponent wishes to meet the requirements of Environmental Management and Coordination Act (EMCA, 1999) under the jurisdiction of National Environmental Management Authority (NEMA) in the object of Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019, the Legal Notice No. 32 and Schedule 2 of EMCA 1999.

Kindly give us your opinion regarding the project's environmental impacts.

SECTION 1: RESPONDENT'S DETAILS

NAME: REUBEN KAPNETI OH LANGAT TEL: 0714317158

ID. NO: 22733147 RESIDENCE: KAPSITII SIGN: [Signature]

Gender Male Female
Age 18-30 30-45 Above 46

SECTION 2: QUESTIONS ON PROJECT AWARENESS

Are you aware of the proposed project intended for catchment conservation scheme to rehabilitate degraded lands?

(Yes) (No)

What is the approximate distance between your home/residence/workplace and the proposed project site?

<100m 100-200m 200-500m >500m



Annex 6: Lead and Associate Expert's Practicing License

FORM 7 (r.15(2))



nema
mazingira yetu | ulimwengu | waziye yetu

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/15509
Application Reference No: NEMA/EIA/EL/20047

M/S **Raphael Kipkurui Ngetich**
(individual or firm) of address
P.O. Box 426-20210, Litein

is licensed to practice in the
capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **2712**
in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **6/17/2021** Expiry Date: **12/31/2021**

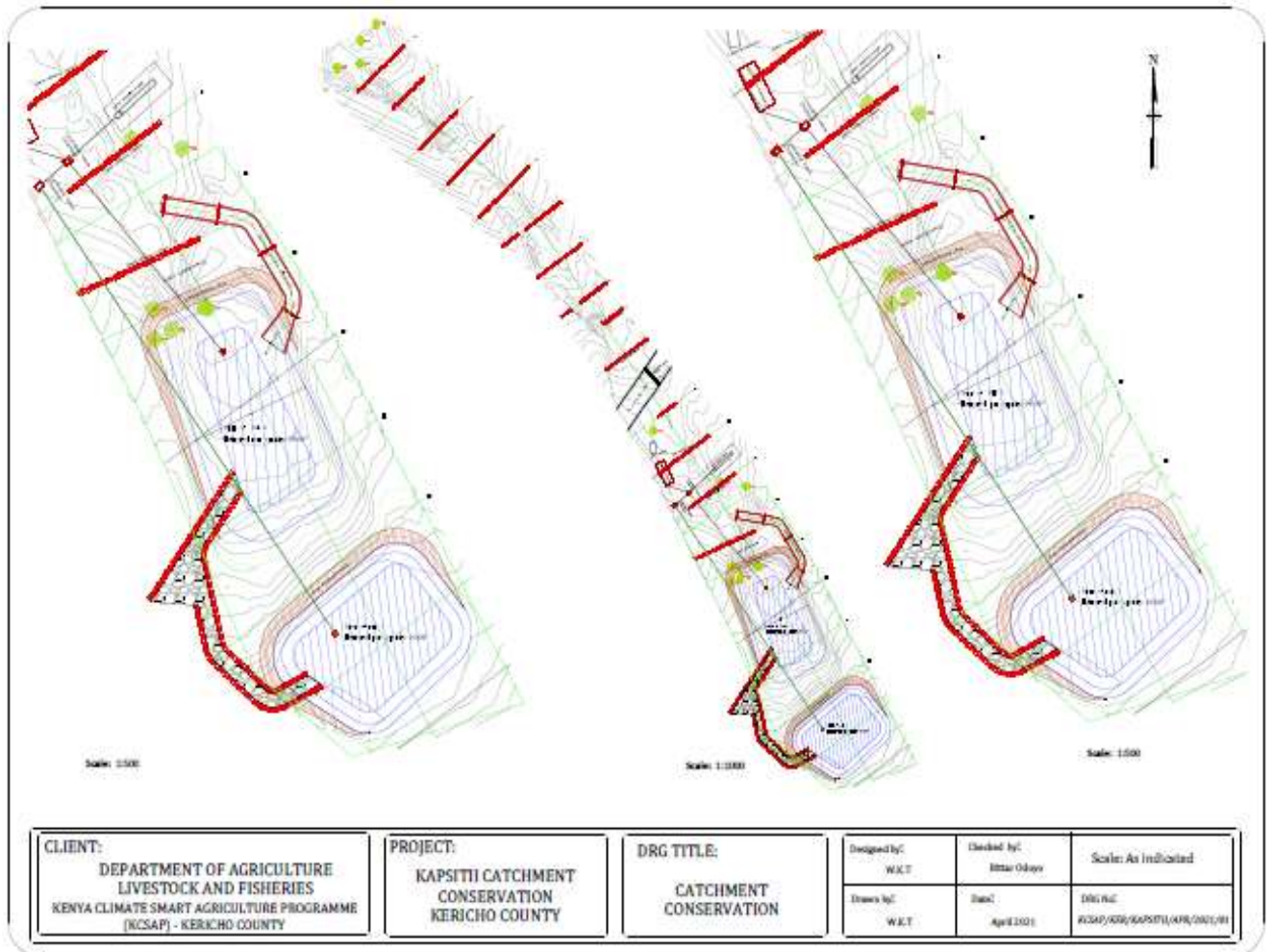


Signature.....
(Seal)
Director General
The National Environment Management
Authority



Annex 7:Design Drawings

Annex 7.1: Topo map and contours of the pan



Annex 7.2: Spillway and embankment cross section

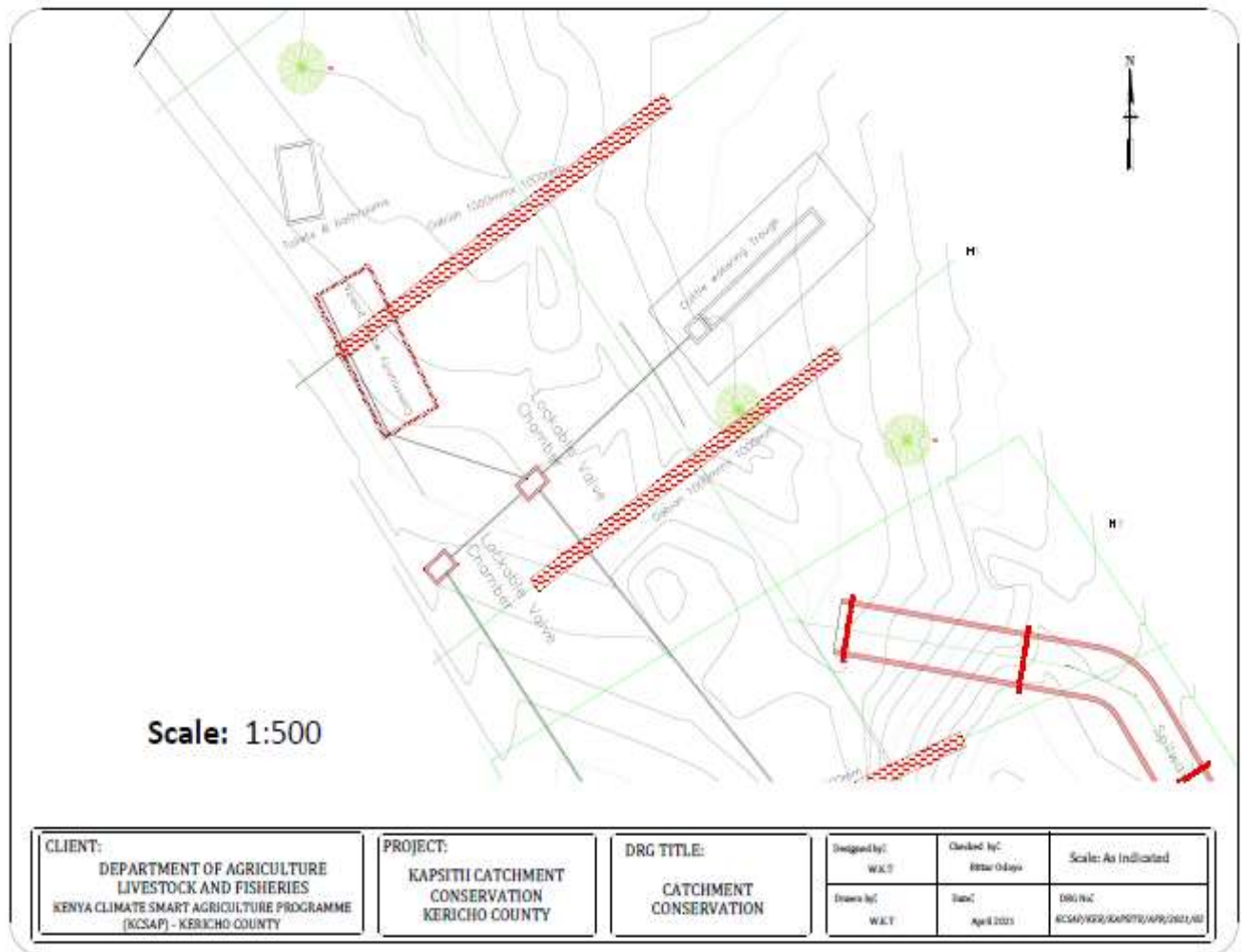
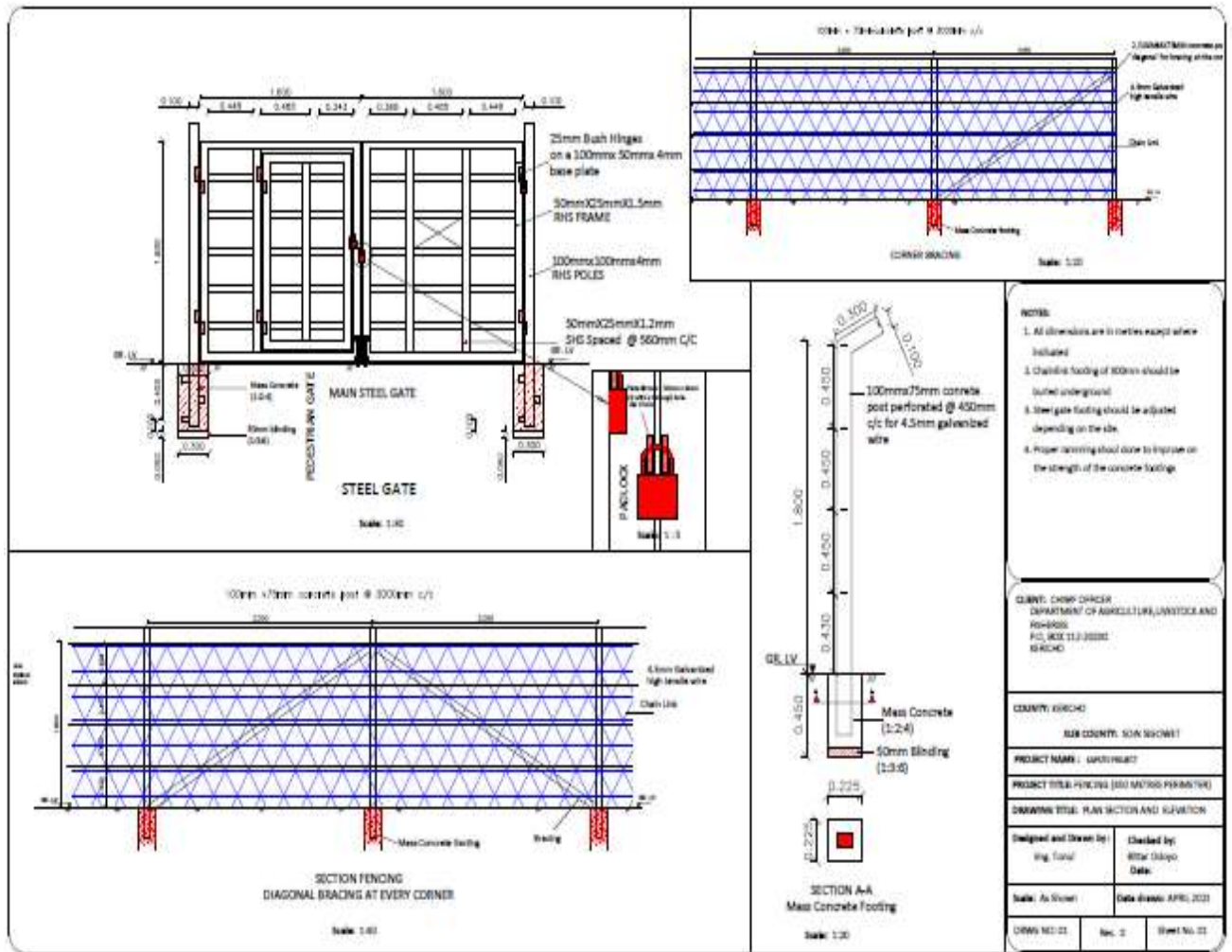
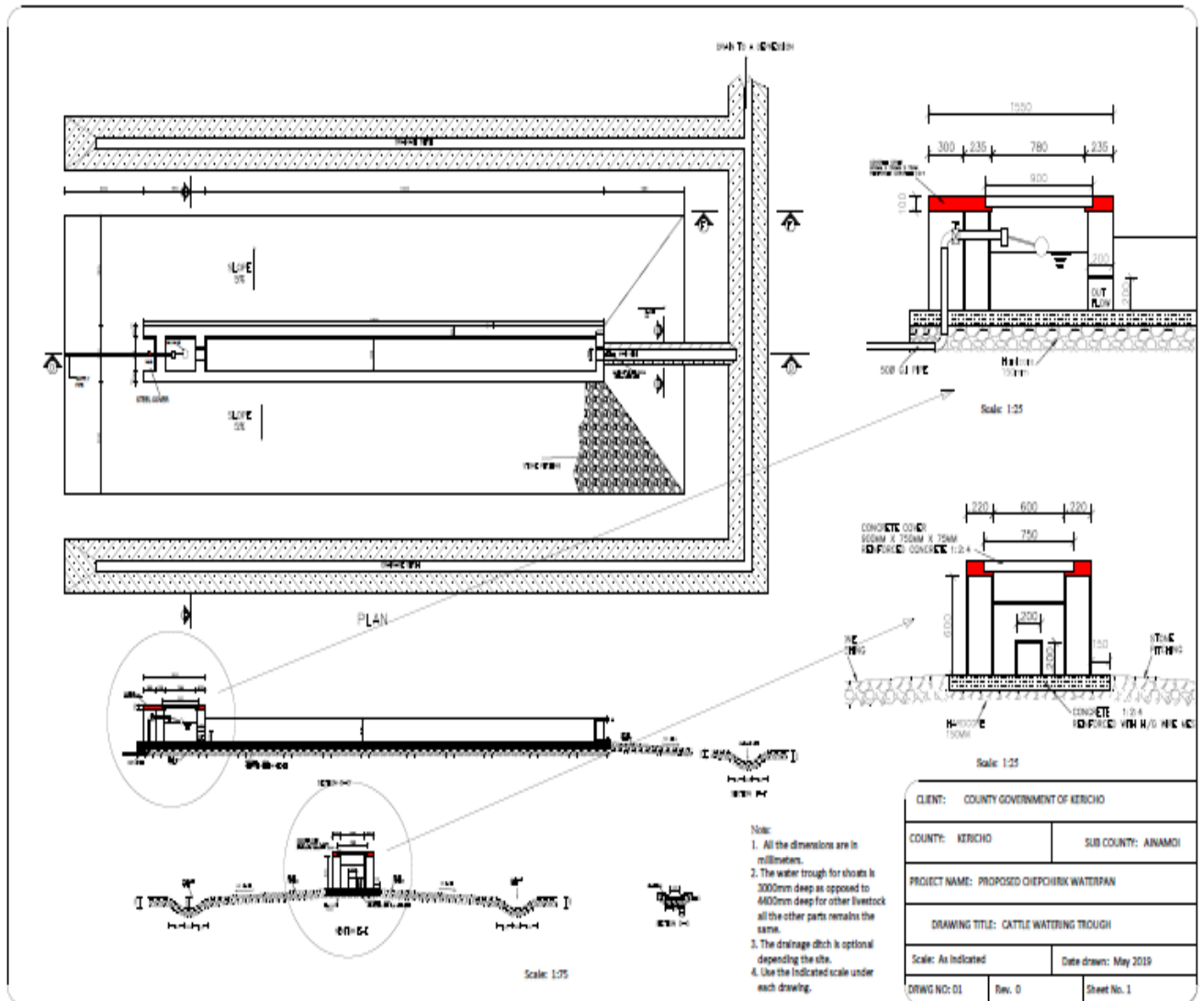


Figure 7.3: Fence design



Annex 7.4: Cattle trough drawing



Annex 7.5: Intake drawing

