Republic of Kenya

KCSAP
Kenya Climate Smart Agriculture Project

ENVIRONMENTAL AUDIT FOR CHEMOROROCH WATER PAN IN BOMET COUNTY, SOTIK SUB COUNTY-NDANAI/ABOSI WARD

NEMA/PR/BMT/5/2/496 and LNC No. 0050867

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SUBMITTED TO:

THE COUNTY DIRECTOR,

NATIONAL ENVIRONMENTAL AUTHORITY, BOMET

MAY 2022

CERTIFICATION

This Environmental Audit Report for Chemororoch Water Pan in Ndanai/Abosi Ward, Sotik sub-county, Bomet county was conducted and report prepared by NEMA registered experts.
The expert's registration details are as follows;

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On Behalf of Kenya Climate Smart Agriculture Project (KCSAP), Bomet County.

ACKNOWLEGEMENT

We acknowledge the warm reception, cooperation and guidance provided by the KCSAP, County Project Coordinator (CPC), the CPCU Team Leader and his team. The well-organized preparation for the site meetings and facilitation to see the work completed on time. We also appreciate the efforts of Mr Stephen Mutai(CESSCO) for the field coordination and facilitation during the site visit and the invaluable information by the County Director of Environment. We appreciate the various stakeholders from the Ndanai/Abosi Ward, Sotik Sub-County, Bomet county for their inputs and recommendations during the site visit.

Thanks to all those who participated in one way or another and may God bless you all.

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ABBREVIATIONS AND ACRONYMS

BP	Bank Procedure
˚C	Degree Celsius
CESSCO	County Environment Social Safeguard Coordination Officer
CPC	County Project Coordinator
CPCU	County Project Coordination Unit
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMCA	Environmental Management Coordination Act
ESMMP	Environmental Social Management and Monitoring Plan
GBV	Gender Based Violence
KCSAP	Kenya Climate Smart Agricultural Project
Km	Kilometre
NEMA	National Environment Management Authority
OP	Operational Policy
SERC	Standards and Enforcement Review Committee
SGBV	Sexual and Gender Based Violence

EXECUTIVE SUMMARY

It is a requirement by law that an environmental audit be conducted on various infrastructural developments that will have an impact on the community and the general environment. The Chemororoch Water Pan have not had an environmental audit since its inception. The EA study has been carried out in accordance with the regulations and guidelines on Environmental Impact Assessment (EIA) and Environmental Audit (EA) set out by NEMA, as stipulated under subsection 31-39 of EMCA, 1999. The study aims to assist the Chemororoch Community Group to comply with the requirements of EMCA, 1999 and the Environmental (Impact Assessment and Audit) Regulations, 2003.

The purpose of the audit was to examine environmental aspects of the operations and environmental awareness with a view of determining the pan's immediate and long term effects on the environment and come up with an effective ESMMP that will address any environmental and social issues that may arise. The environmental audit report is on the findings of an environmental self-audit of the operations and activities of Chemororoch water pan located in is in Ndanai/Abosi ward of Sotik Sub county Bomet County. The pan is located about 15 km to the east of Sotik town.

During the audit the following issues were addressed; Public participation was done on 5th May, 2022 through a meeting with the community members of the pan and management committee at the site, where 28 members including immediate neighbours participated. Questionnaires were administered to 12 randomly selected members. Consultations were done with representatives from various departments at the County of Bomet including the Bomet County's Kenya Climate Smart Agriculture Project (KCSAP) Coordinator, County Environment Management Director office. Among the key areas of interest during the audit were on spillway, silt trap, embankments, water troughs, conservation measure within the embankment and around the pan, domestic, livestock and irrigation water use, Social issues like water use conflicts, diseases and water pollution. From the consultation process, it was evident that the proponent is committed to take all necessary precautions to ensure that the pan users are not predisposed to accidents and risks of contracting water borne diseases. The pan management committee also promised to improve on efficient water use, put in place appropriate hygiene measures and waste management system. The infrastructural developments in the pan were also found to be within the recommended specifications. The social issues of concern mentioned during public participation were water use conflicts, unpaid food service to the construction workers and lack of fund for operations and maintenance.

The people were happy with benefits that the pan has brought by ensuring all year round water availability for domestic use and provision for livestock. The management is committed to observe the recommendations of the audit and to implement the Environmental Management Plan.

Chemororoch Water Pan Community Management Committee has complied with the relevant statutory requirements and has implemented the Environmental Management Plan that was recommended during the Environmental Social Impact Assessment of the year 2019.

No major issues were noted during the audit. The proponent should adhere to the proposed Environmental Social Management Monitoring Plan (ESMMP).

CHAPTER ONE

INTRODUCTION

1.1 Background

The Kenya Climate Smart Agriculture Project (KCSAP) aims at increasing Agricultural Productivity and building resilience to climate change risks in the targeted small holder farming and pastoral communities in Kenya, and in the event of an Eligible crisis or emergency, to provide immediate and effective response. To contribute in achieving this objective, Bomet County has laid a number of community driven sub projects to help attain this objective. It's from this background that the community from Chemororoch village mobilized themselves, raised a proposal to seek donor support for the rehabilitation of Chemororoch water pan which was considered.

The Chemororoch water pan is in Ndanai/Abosi ward of Sotik Sub county, Bomet County. The nearest major town is Sotik Town, the Bomet County head-quarters while the nearest shopping Centre to the project area is Ndanai. It is approximately 15Km from Sotik Town and 5Km from Ndanai Trading Centre. The land measures about 2.5 ha. The site also serves as drainage area for run-off water from the surrounding catchments including road discharges.

1.2 Annual Environmental Audit

The Environmental (Impact Assessment and Audit) Regulations of 2003 section 34 requires a proponent of a project to take all practical measures to ensure the implementation of the environmental management plan comply with regulatory requirements. This is done by:

(a) Carrying out a self-auditing study on a regular basis
(b) Preparing an environmental audit report after each audit and submitting the report to NEMA annually or as may be prescribed by NEMA; and
(c) Ensuring that the criteria used for the audit is based on the environmental management plan developed.

1.3 Objectives of the audit

The objectives of this assignment are:

(a) Carry out an environmental self-audit in line with the legal and regulatory requirements.
(b) Make recommendations for remedial measures.
(c) Prepare a list of required corrective activities.

The self-audit evaluated the following:

(a) Compliance of the operations and activities.
(b) Environmental efficiency of the Firm (Material usage and management of solid and liquid wastes);
(c) Evaluate existing environmental management plan;
(d) Potential technology improvements.

1.4 Audit methodology

1.4.1 Audit procedure

A detailed desk study was carried out, including a review of the laws and regulations of Kenya as applicable to the pan. From this desk study, an audit methodology, scope, audit plan and proposed outputs were developed.

The environmental audit was conducted on 5th April, 2022. The water pan management presented an overview of all the activities and processes. The various operational licenses were provided and a tour of the pan was undertaken.

1.4.2 Audit scope

This environmental audit covers Chemororoch water pan is in Ndanai/Abosi ward of Sotik Sub county, Bomet County. The nearest major town is Sotik Town, the Bomet County head-quarters while the nearest shopping Centre to the project area is Ndanai. It is approximately 15Km from Sotik Town and 5Km from Ndanai Trading Centre.The following issues were addressed:

i) Environmental impacts
   - Soil and water contamination by waste/chemical
   - Soil erosion on the water pan embankment
   - Siltation
   - Loss of vegetation
   - Eutrophication
   - Introduction of invasive species

ii) Social impacts
   - Waterborne diseases
   - Danger of drowning
   - Livestock/crop conflict
   - Human/ wildlife conflict
   - Outsiders/strangers accessing the water pan
   - Water use conflict
   - Sexual exploitation and sexual harassment
   - Sustainability measures

The findings described in this report are based on information provided by the Water pan community, site visit, observations at the time of audit and, where applicable, reference to public documents.

CHAPTER TWO

2.0 PROJECT DESCRIPTION

2.1 Location

The Chemororoch water pan site is located between geographic co-ordinates latitude 0^0 55' 54"S; Longitude 35^0 23' 20" Altitude at about 15 km to the east of Sotik town. Chemororoch water pan is in Ndanai/Abosi ward of Sotik Sub county. Sotik- wards are Chemagel, Kapletundo, Ndanai/Abosi, Kipsonoi and Rongena/Manaret. The nearest major town is Sotik Town, the Bomet County head-quarters while the nearest shopping Centre to the project area is Ndanai. It is approximately 15Km from Sotik Town and 5Km from Ndanai Trading Centre.

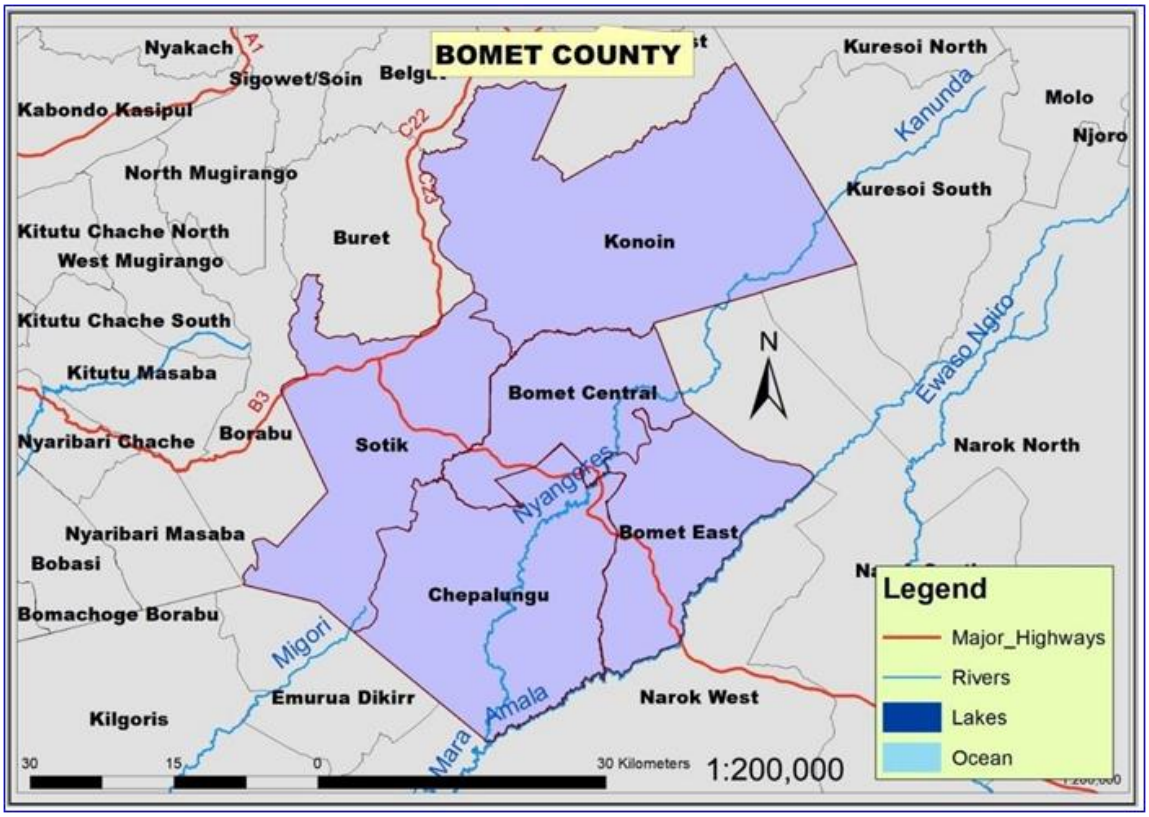

Figure 1: Bomet County Map Showing Various Sub-Counties

2.2 Ownership

The pan is situated on Public Land measuring 2.5 hectares which was set aside for development of a water pan.

2.3 Topography and Geology

The topography and size of the watershed influences how much and how quickly rain water reaches the river, Steep Sloped basins are often associated with quick response to rainfall events in terms of flashy runoff, while a flat basin is not. The topography is generally flat with shallow and wide river valleys and depressions, generally undulating with wide river channels that drain gently into the lower flat land.

2.4 Vegetation and Land Cover

Vegetation affects the hydrologic abstractions and runoff volumes through canopy interception, evaporation and evapo-transpiration dynamics. The vegetation in the Chemororoch sub-basin varies from the source areas to downstream as follows: highlands are heavily forested, comprising of woodlands, bush land and scrubland. However, human activities have significantly reduced the land under this type of vegetation with only small pockets remaining.

2.5 Agro-ecology and Land use

Land use and land cover affects the runoff characteristic of the basin, the land treatment practices, affect infiltration processes and therefore affects groundwater. The modification of land surface by the various land uses has varying effects on the runoff characteristics of a given drainage area, as it affects the hydrologic abstractions and runoff volumes. The most activities done are Agricultural practices that includes animal rearing, growing of crops and other small agricultural activities.

2.6 Project Water Source

The main water source for the proposed water pan is the surrounding area which is perennial though low flows are experienced during the dry season. We have collected/generated and analyzed the hydrological data with the aim of assessing the availability of water for water supply. There is no gauging station on within the catchment area.

2.7 Climate of the area

The climate of this area may be described as mid highland type characterized by moderate to cool weather conditions where temperature range from 18-32^{0}C during the day and 11-15^{0}C during the night. The common type of rainfall experienced here is conventional with little of the relief type on the higher grounds. The vegetation type ranges from savannah to forest vegetative covers. Just like most places in the larger Bomet County, rainfall is bimodal with long rains falling at the month of April to May whereas short rains in the month of October to December. It may however be noted that climate change has had some effect of the climatic patterns of the area.

Ground water is potentially recharged from hilltops where it is anticipated that inflows get into aquifers and pass on through porous formations depending on porosity levels.

2.8 Socio Economic Environment

The major attributes of socio-economic environment include land use economic activity that include crop farming and livestock keeping. Also community services and public finance, transportation, health and safety are among the socioeconomic activities. There are other several economic activities within the neighbourhood that include trading centres, hospitality and service provision. There are also several churches in the neighbourhood.

2.9 Health and Safety

There have been no notable health and safety concerns in the neighbourhood. The project should therefore be implemented in such a manner that it will improve on the current setup to allowable standards. In this regard, a number of measures were put in place during the construction and operational phases to uphold the safety and health of the workers, the occupants and the neighbouring community.

2.10 Transportation

The transportation system provides access to movement and trade. The systems that offer access to movement and trade within the project region are roads. The proposed project site will make use of the existing roads including the tarmac road, Murram roads and the earth access road serving the project site which is in a relatively good condition.

CHAPTER THREE

3.0 COMPLINCES WITH POLICY, LEGAL AND REGULATORY FRAMEWORK

3.1 Policy

The Kenya Government's environmental policy aims at integrating environmental aspects into national development plans. The broad objectives of the national environmental policy include:

i. Sustainable use of natural resources to meet the needs of the present generation while preserving their ability to meet the needs of future generations;
ii. Integrate environmental conservation and economic activities into the processes of sustainable development;
iii. Optional use of natural land and water resources in improving the quality of human environment;
iv. Meet national goals and international obligations by conserving bio-diversity, arresting desertification, mitigation effects of disasters, protecting the ozone layer and maintaining an ecological balance on earth.

3.2 Policy Framework

3.2.1 Kenya Constitution 2010

Article 42 states "every person has the right to a clean and healthy environment, which includes the right a) to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69, and b) to have obligations relating to the environment fulfilled under Article 70". Chapter 5 provides the main pillars on which the 77 environmental statutes are hinged and covers "Land and Environment" and includes the aforementioned articles 69 and 70. Part 1 of the Chapter dwells on land, outlining the principles informing land policy, land classification as well as land use and property. Part 2 of the Chapter provides for a clear outline of the state's obligation with respect to the environment. In conformity with the Constitution of Kenya 2010, every activity or project undertaken within the Republic of Kenya must be in tandem with the state's vision for the national environment as well as adherence to the right of every individual to a clean and healthy environment.

Relevance: The proponent has implemented most of the proposed mitigation measure proposed in the ESMMP in the ESIA project report for Kodera water pan hence clean and heathy environment as provided for in the Constitution 2010.

3.2.2 Vision 2030

Kenya Vision 2030 is the long-term development blueprint for the country and is motivated by a collective aspiration for a better society by the year 2030. The aim of Kenya Vision 2030 is to create "a globally competitive and prosperous country with a high quality of life by 2030". It aims to transform Kenya into "a newly-industrializing, middle income country providing a high quality of life to all its citizens in a clean and secure environment". The overall goal of the Environment, Water and Sanitation Sector as outlined in the Vision is to attain a "clean, secure and sustainable environment" by 2030. Devolution under Vision 2030 is expected to play a key and enhanced role in ensuring economic and social wellbeing of the communities.

Relevance: The project has supplied water for livestock hence has enabled increased livestock productivity thereby enhancing the economic and social wellbeing of the community.

3.2.3 National Water Policy

The overall objective of the National Water Policy is to lay the foundation for the rational and efficient framework for meeting the water needs for national economic development, poverty alleviation, environmental protection and social wellbeing of the people through sustainable water resource management. The policy addresses issues relating to water supply and sanitation facilities development, institutional framework and financing of the sector. According to the policy, in order to enable sustainable water supply and sanitation services, there is need to apply alternative management options that are participatory through enhanced involvement of others in the provision of these services but particularly the private sector.

Relevance: The project has contributed to the objectives of this policy through provision of water for livestock and domestic use.

3.2.4 National Environment Policy, 2013

This Policy sets out important provisions relating to the management of ecosystems and the sustainable use of natural resources. The policy further acknowledges that natural resources are under immense pressure from human activities particularly for critical ecosystems including forest, grasslands and arid and semi-arid lands. The policy seeks to develop an integrated approach to environmental management, strengthening the legal and institutional framework for effective coordination, promoting environmental management tools.

Relevance: The contractor implemented the mitigation measure during construction while the proponent has endeavored to implement the proposed mitigation measures as outlined in the Chemororoch water pan ESIA project report. This is aimed at promoting coordination of environmental management of the project such that sensitive ecosystems are not damaged by the subsequent project activities.

3.3 Legal and Institutional Framework

3.3.1 The Environmental Management and Co-ordination Act, 1999 (the act)

The Act received Presidential assent on 6 January 2000 and was gazetted on 14 January 2000. The main objective of the Act is to:

- Provide a framework legislation for over 77 statutes in Kenya that contain environmental provisions;
- Provide guidelines for the establishment of an appropriate legal and institutional framework for the management of the environment in Kenya;
- Provide guidelines for environmental impact assessment (EIA), environmental audit (EA) and monitoring, environmental quality standards and environmental protection orders.

3.3.2 Administrative structures

In 2001, the Government established the administrative structures to implement the Act. The two main administrative structures are:

i. The National Environmental Council (the council)

The Council is responsible for policy formulation and directions for the purposes of the Act. The Council also sets national goals and objectives and determines policies and priorities for the protection of the environment

ii. The National Environmental Management Authority (NEMA)

The responsibility of NEMA is to exercise general supervision and co-ordination over all matters relating to the environment and to be principal instrument of government in the implementation of all policies relating to the environment.

In addition to NEMA, the Act provides for the establishment and enforcement of environmental quality standards to be set by a technical committee of NEMA known as the Standards and Enforcement Review Committee (SERC).

iii. Requirements for environmental assessment and audits

The Second Schedule to the Act specifies for which an EIA and environmental audit must be carried out.

According to the Act, Section 68, all projects listed in the Second Schedule of the Act must undertake an environmental audit, keep accurate records and make annual reports to NEMA.

The Environmental Impact Assessment and Audit Regulations state the following:

Regulation 31 (1): An environmental audit study shall be undertaken for ongoing projects commenced prior to the coming into force of the regulations, in June 2003.

Regulation 31 (3): In the case of an on-going project, NEMA shall require the proponent to undertake:

an initial environmental audit study followed by subsequent environmental control audit studies as may be necessary at such times as shall be agreed upon by the Authority and the proponent;

An initial environmental audit study to provide baseline information upon which subsequent environmental control audit studies shall be based.

3.3.3 Environmental Management and Co-ordination Act (Waste Management) Regulations 2006

These are described in Legal Notice No. 121 of the Kenya Gazette Supplement No. 69 of September 2006. These Regulations apply to all categories of waste as provided in the Regulations. These include:

Industrial wastes;

Hazardous and toxic wastes;

Pesticides and toxic substances;

Biomedical wastes;

Radio-active substances.

These Regulations outline requirements for handling, storing, transporting, and treatment / disposal of all waste categories as provided therein.

Relevance: The management committee and farmers irrigating crops shall undertake integrated pest management to ensure the application of pesticides, fertilizers and herbicides are controlled on their farms that are within the catchment of the pan to prevent contamination of water.

3.3.4 Environmental Management and Co-ordination, (Water Quality) Regulations 2006

These are described in Legal Notice No. 120 of the Kenya Gazette Supplement No. 68 of September 2006. These Regulations apply to drinking water, water used for agricultural purposes, water used for recreational purposes, water used for fisheries and wildlife and water used for any other purposes. This includes the following:

Protection of sources of water for domestic use;

Water for industrial use and effluent discharge;

Water for agricultural use;

These Regulations outline:

Quality standards for sources of domestic water;

Quality monitoring for sources of domestic water;

Standards for effluent discharge into the environment;

Monitoring guide for discharge into the environment;

Relevance: As per the ESMMP the pan management committee shall undertake regular monitoring of water quality. Water will be checked for waste and water sources will be monitored. The pan water is used for livestock use only.

3.4 The Sexual Offences Act, 2006

This Act protects people and employees from any unwanted sexual attention or advances by staff members. This act ensures the safety of women, children and men from any sexual offences which include: rape, defilement, indecent acts. This law will govern the code of conduct of the Contractor's staff and provide repercussions of any wrong doing

Relevance: The ESMMP provides for the implementation of a SGBV action plan with an Accountability and Response Framework as part of the Construction-ESMMP (C-ESMMP) and administration of the whole project cycle.

3.5 Water Act No. 43 of 2016

The Act provides for the regulation, management, development and use of water resources, and water and sewerage services. It has provisions for formulation of five-year integrated water services strategy with plans, programs for protection, conservation, control and management of water resources; establishment of water sector institutions.

Relevance: The water pan has adhered to the regulations in the water act. The act addresses issues on conservation of water, water abstraction rights and water harvesting and storage to satisfy human and livestock needs, and to protect ecosystems to secure ecologically sustainable development, including the responsibilities of county governments and public private partnerships.

3.6 The Occupational Safety and Health Act, 2007

The Act makes provision for the health, safety and welfare of persons employed in work places. The provisions require that all practicable measures be taken to protect persons employed in a workplace from dust, fumes or impurities originating from any process within the facility. For developments such as water pans, dams and water projects, the Act is important as it requires project.

Relevance: The provision was adhered to during the construction and during the operation phases and expected to continue. The proponent to have adequate management procedures of occupational safety and health at the work places during operations and maintenance of the pan. For safe activities on site the proponent and project managers should ensure the all doing works health and safety measures are adhered to at all times.

3.7 National Policy for Prevention and Response to Gender Based Violence 2014

The policy seeks to ensure; a coordinated approach in addressing GBV and effective programming; enhanced enforcement of laws and policies towards GBV prevention and response; increase in access to quality and comprehensive support services across sectors; and improve sustainability of GBV prevention and response interventions.

GBV is based on socially ascribed (gender) differences between males and females. Gender can be seen as the allocation of roles, attitudes and values that are deemed by the community to be appropriate for each sex. These roles define power relations between men and women regarding who makes decisions and who owns resources. They are learned and reinforced through interactions in the home and community.

Relevance: The water pan community management committee will ensure that there is no aspect of GBV based on the roles of the weak and vulnerable members of the society. The following measures will be undertaken

i. Capacity building for GBV response including training
ii. Establish an elaborate communication strategy incorporating all actors including the public, service providers, government agencies and non-state actors so as to effectively respond to GBV.

3.8 County Government Act, 2012

This act stipulates the functions for county government in article 186 of the Kenyan constitution 2010 and Fourth schedule. The functions include agriculture and livestock husbandry, control of air pollution, noise pollution and implementation of specific government policies on natural resources and environmental conservation including soil and water conservation. This act is relevant as it guides the proponent develop the conservation measures to conserve water and the environment in the project area.

Relevance: The proponent was required under this Act to plant trees in the water catchment during project and sensitizing of workers and farmers on soil and water conservation during the various project phases of the project. This has not been complied with to a larger extent and therefore the proponent should ensure compliance as outlined in the ESMMP in the Chemororoch ESIA project report.

3.9 World Bank Environmental and Social Safeguards

The following World Bank environmental safeguards (Operational Policy (OP) /Bank Procedure (BP)) will guide the environmental audit

3.9.1 OP/BP 4.01 (Environmental Assessment)

The policy describes an environmental assessment (EA) process for the project. The breadth, depth, and type of analysis of the EA process depend on the nature, scale, and potential environmental impact of the project. The policy favours preventive measures over mitigation or compensation measures, whenever feasible.

The operational principles of the policy require the environmental assessment process to undertake the following:

- Evaluate adequacy of existing legal and institution framework including applicable international environmental agreements. This policy aims to ensure that projects contravening the agreements are not financed.
- Stakeholder consultation before and during project implementation
- Engage service of independent experts to undertake the environmental assessment
- Provide measures to link the environmental process and findings with studies of economics, financial, institutional, social and technical analysis of the proposed project.

Develop programmes for strengthening of institutional capacity in environmental management. The requirements of the policy are similar to those of EMCA which aims to ensure sustainable project implementation.

Relevance: Most of the requirements of this safeguard policy have been responded to in this EA report by evaluating the impact of the project, its alternatives, existing legislative framework and public consultation.

3.9.2. OP/BP 4.04 Policy on Natural Habitats

The policy is designed to promote environmentally sustainable development by supporting the protection, conservation, maintenance and rehabilitation of natural habitats and their functions. The policy seeks to ensure that World Bank-supported infrastructure and other development sub-projects take into account the conservation of biodiversity, as well as the numerous environmental services and products, which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported sub-project can damage natural habitats (land and water area where most of the native plant and animal species are still present).

This safeguard policy requires a precautionary approach to natural resources management and requires the conservation of critical environments during project development. In order to ensure conservation and project sustainability, this policy requires that:

- Project alternatives are sought when working in fragile environments. Key stakeholders e.g. WRA were consulted during the project design, implementation, monitoring and evaluation of mitigation.

The proponent through this Environmental Audit will take measures for protecting, preserving and conserving the environment in the project setting from predicted and emergent adverse impacts. Specifically, the project is not being implemented in a natural habitat or an area of ecological significance

3.9.3. Pest Management (Operational Policy, OP/BP 4.09)

This policy is meant to minimize and manage the environmental and health risks associated with pesticides use and promote and support safe, effective, and environmentally sound pest

management. Though the policy has no procurement of pesticides or pesticide application, equipment is envisaged for the subproject per see, the envisaged horticultural and agricultural improvement activities tied to the wider project implementation objectives may involve pesticide use and subsequent increase in health and environmental risk.

- The use of pesticides and agrochemicals is at a small-scale level and an integrated pest management plan has been in cooperated into the ESMMP

CHAPTER FOUR
4.0 PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATIONS

4.1 Introduction
Members of the public are supposed to participate and get involved because the project affect them. Section 17 of the Environmental (Impact Assessment and Audit) Regulations, 2003, states that the proponent shall in consultation with the authority, seek the views of persons affected by the project.

4.2 Objectives of public participation
The public participation and stakeholders' consultation was conducted to ensure the quality, comprehensiveness, effectiveness of the audit. It was also aimed at ensuring that the public views are adequately taken into consideration in the decision-making process.

4.3 Methodology for public participation
The public participation was done through a meeting with the community and committee members of Chemororoch water pan at the site on 5th April, 2022 where 29 participants attended (11 men and 18 women) including the EIA/EA experts attended. The list of attendance attached (Appendices 4). The Environmental Audit team then administered questionnaires to 12 randomly selected. The filled questionnaire forms are attached (Appendix 5).

Plate 1: Lead Experts collecting views of the Pan

4.4 Summary of comments of public participation meeting

The main issues recommendations and responses during the public participation included:

(a) **Siltation:** The Community members to plant more trees and grass cover upstream to reduce soil erosion and siltation.

(b) **Soil erosion resulting in gulley:** The spill way was well constructed and concretized, however it has broken off and the water way is creating huge gullies that require construction of gabions both at the inlet and outlet.

(c) **Soil conservation:** Farmers upstream to practice soil conservation to reduce soil being washed away in to the pan

(d) **Water quality**: Farmers upstream be capacity build on use of integrated pest management to reduce on water pan pollution through agrochemical use

(e) **Ownership and sustainability**: The relevant stakeholders be adequately engaged in the project for maximum output.

Social Concerns

(a) Water use conflict: The community upstream felt they were not enjoying benefits of the pan. The management community to address this issue raised.

(b) Children safety: Although the water pan is well fenced, concerns were raised on risks children watering the livestock sneaking to the water reservoir to swim. Some sneak into the pan to swim which is a safety issue.

CHAPTER FIVE

5.0 AUDIT FINDINGS

5.1 Components of the pan

A water pan is a pond or a hole dug in the ground that is used to collect and store surface runoff from uncultivated grounds. The components of the pan that had to undergo environmental audit were as follows:

5.2 Pan area

The water pan was completed by the contractor as per expectation. The vegetation on the catchment area was left intact as indicated in the ESMMP. The community to continue planting more tress and protection on the catchment.

Plate 1: Catchment vegetation cover left intact

5.3 Embankment

It was evident that there is soil erosion from the water pan embankments. The community was advised to carry out tree planting and vegetation using appropriate grass.

Plate 2: Soil erosion on the embankment

5.4 Spillway channel

The spill way was well constructed and concretized, however it has broken off at the end of the concrete. The water way is creating huge gullies that require construction of gabions.

Plate 3: Spillway channel

Plate 4: Gulley developing at the spillway

5.5 Siltation

Siltation of the reservoir from the inlet/catchment area. The community was advised retain the aquatic and tree plants (e.g. Reeds,Olea africana) in the upper water catchment area. Grade the inlet to reduce speed of water through inlet.

Plate 5: Siltation at the inlet

5.6 Community watering point

The water trough and taps require maintenance of works. The advice provided to the community and the county team is continuous training of Project Management Committee on maintaining a fund for operations and maintenance.

Plate 6: Water trap

Plate 7: Water tap

5.7 Catchment conservation measures

There is water pollution due to application of agrochemicals in the farms in the catchment area getting in the dam. The community is advised to do terracing in the upper catchment, tree planting and vegetation using appropriate grass around the water pan.

5.8 Fencing

The pan is well fenced with concrete poles and chain-link. Although the water pan is well fenced, concerns were raised on risks on children watering the livestock. Some sneak into the pan to swim which is a safety issue. The Project Management Committee and the community was advised to put measures of ensuring no one can enter into the water reservoir.

Plate 8: Chain-link fence

5.9 Positive impacts

- Water Availability for livestock, domestic use and micro-irrigation;
- Reduced time for fetching water;
- Improved agricultural productivity and food security;
- Improved value of land;
- Tree planting around the areas;
- Reduced soil erosion downstream due to water harvesting;
- Well-constructed water troughs for livestock, and
- Water for household cleaning activities available.

5.10 Key Gaps and Recommendations

Table 1: Key gaps and recommendations

Issues/Gap	Recommendations
Environmental	
Soil erosion from the water pan embankments.	Tree planting and vegetation using appropriate grass.
Water pollution due to application of agrochemicals getting in the dam.	• Terracing in the upper catchment. • Tree planting and vegetation using appropriate grass around the water pan.
Invasive acacia tree seedling on embankment.	• Plant appropriate grass for example Kikuyu grass, tree species such as *bamboo* to replace acacia spp.

Issues/Gap	Recommendations
Good water use practices to reduce water wastage and contamination.	• Continue implementing and supporting good water use practices.
Siltation of the reservoir from the inlet/catchment area.	• Retain the aquatic and tree plants (e.g. Reeds,*Olea africana*) in the upper water catchment area • Grade the inlet to reduce speed of water through inlet.
Social	
Public disclosure	• Insert NEMA licence number and bill of quantities in the sign board.
Maintenance of works e.g. water taps	• Continue training PMC on maintaining a fund for O&M
Payment of locals who supplied food to the construction workers	• County project team to address the matter as per the required grievances redress mechanisms.

CHAPTER SIX

6.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

6.1 Introduction

Environmental and Social Management Plan (ESMMP) for development projects provides a logical framework within which identified negative social and environmental impacts can be mitigated and monitored. In addition, the ESMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done. At the time of this annual EA, the facility had an ESMMP prepared during the EIA process. The ESMMP is updated annually during the annual EA process. This plan is required to provide a clear plan of actions based on set standards and guidelines with the specific time frame for the management of the environment during the project operations and future activities. The updated ESMMP below is recommended based on findings of the audit to provide a framework within which environmental and social measures will be undertaken to avert any potentially negative impacts arising from the facility current and in the future.

Table 1: Recommended Environmental and Social Management and Monitoring Plan (ESMMP)

ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING OPERATIONAL PHASES						
Environmental aspect	**Mitigation Measures put in Place**	**Indicator**	**Responsibility**	**Means of verification**	**Timeframe /frequency**	**Estimated costs in (Kshs)**
Embankment soil erosion	Tree planting and vegetation using appropriate grass.Plant more trees and appropriate grass to cover bare areas	Trees and cover grasses planted	Pan management committee	Area planted	continuous	50,000
Development of gulley erosion around the spillway	Construction of gabions where erosion is severe and plant grass and trees to hold the soil	Gabions constructed in place	Pan management committee	Length of gabions put in place	By June 2022	60,000
Siltation of the reservoir from the inlet/catchment area.	Retain the aquatic and tree plants (e.g. Reeds,Olea africana) in the upper water catchment area. Capacity build farmers upstream to enhance soil conservation measures Grade the inlet to reduce speed of water through inlet	Trees. and grass cover Conservation measures in place Inlet graded	Pan management committee County Agriculture department	Area planted Conservation measures in place Length of inlet graded	Continuous	50,000
The water trough and taps require maintenance works.	Establish fund for operations and maintenance.	Amount of funds raised	Pan management committee	Fund for operations and maintenance in place	Immediately	

Water pollution due to application of agrochemicals in the farms in the catchment area getting in the dam.	Conservation of upper catchment through terracing, tree planting and vegetation using appropriate grass around the water pan.	Conservation measures in place	Pan management committee Community	Length of terraces, area of trees planted and vegetation cover	Continuous	40,000

SOCIAL MANAGEMENT AND MONITORING PLAN DURING OPERATIONAL PHASES						
Social aspect	**Mitigation Measures put in Place**	**Indicator**	**Responsibility**	**Means of verification**	**Timeframe /frequency**	**Estimated costs in (Kshs)**
Children safety	Put measures of ensuring no one can enter into the water reservoir.	Security measures in place	Pan management committee	Security watchman/guard	Continuous	To be determined
Public disclosure	Insert NEMA licence number and estimated cost of the project in the signage	NEMA licence number and estimated cost included	Pan management committee	Signage complete with public disclosure details	Immediately	20,000
Water troughs and water taps repairs	Maintenance of water troughs and water taps	Water troughs and water taps in good working condition	Pan management committee	Water troughs and water taps repaired	By June 2022	60,000
Food supply debt	Ensure payment of locals who supplied food to the construction workers	Food suppliers payment addressed	County Government through KCSAP	Debt fully paid	Immediately	
Total KES						**280,000**

CHAPTER SEVEN

7.0 RECOMMENDATIONS AND CONCLUSIONS

7.1 Introduction

The environmental audit considered the various components of the water pan as well as the operation of the water pan. The environmental audit finds that the compliance level based on the ESMMP that was developed during the Environmental Social Impact Assessment was good however it was noted that the some environmental and social issues that are emerging need to be addressed. This environmental audit has proposed measures to address the likely impacts of the water pan. It has outlined measure for mitigating the environmental and social impacts.

7.2 Conclusion

Based on the findings the experts conclude that the implementation of the ESMMP is up to standard and is according to the relevant laws and regulations. The project is good and beneficial to the community but more needs to be done to enable easy access to water by the community and livestock upstream. Also the community need to put sustainability measures in place such as establishing a fund to ensure routine operations and maintenance.

7.3 Recommendation

The experts make the following recommendations

- Establish a fund for routine operations and maintenance of the pan
- There is need to address the upstream community grievance on water access
- Capacity build the upstream farming community to enhance soil conservation measures to reduce on siltation of the pan
- Capacity build farming community of agrochemicals and fertilizer use to prevent water contamination
- Capacity building to the management committee and the community on project sustainabity
- Strict implementation of the recommendations in the ESMMP to improve on their current level of compliance and emerging issues.

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8. ANNEXURES

1. NEMA Statutory Registration and Licenses for the Lead Expert;
2. NEMA Lead Expert Practicing License;
3. Minutes of public participation;
4. List of interviewed staff, visitors and immediate neighbours;
5. Questionnaires for the staff, visitors and immediate water pan neighbours;
6. List of Photos/Plates.

Appendix 1: NEMA Statutory Registration and Licenses for the Lead Expert

Application Reference No. NEMA/PR/BMT/5...

Registration No. 0050867

For Official Use

nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENT IMPACT ASSESSMENT LICENSE

This is to certify that the Environmental Impact Assessment Project Report received from COUNTY GOVERNMENT OF BOMET (Name of individual/firm) of P.O Box 27, BOMET (Address) submitted to the National Environment Management Authority (NEMA) in accordance with the Environment Impact Assessment and Audit Regulations 2003 regarding PROPOSED DESILTATION OF CHEMOROROCH WATER PAN, SOTIK SUB COUNTY (title of project) whose objective is to carry on PROPOSED DESILTATION OF CHEMOROROCH WATER PAN SOTICK SUB-COUNTY, NDANAIAROSI WARD SOTIK, BOMET COUNTY (briefly describe purpose) located at (locality and district) has been reviewed and a license is hereby issued for implementation of the project, subject to attached conditions

Dated this 11TH Day of APR 2019

Signature

SEAL

Director General
The National Environment Management Authority

CONDITIONS OF LICENSE

1. This license is valid for a period of **24 months** (time within which the project should commence) from the date hereof.
2. The Director-General shall be notified of any transfer/variation/surrender of this license.

P.T.O

Appendix 2: NEMA Lead Experts Practicing Licenses
Lead Expert 1

FORM 7 (r.15(2))

nema

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/16737
Application Reference No: NEMA/EIA/EL/21857

M/S **John Muteti Kisuna**
(individual or firm) of address

P.O. Box 30028-00100 Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **11610**

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

Issued Date: **3/10/2022** Expiry Date: **12/31/2022**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

Lead Expert 2

FORM 7 (r.15(2))

nema

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/16809

Application Reference No: NEMA/EIA/EL/21782

M/S **Dr. Joseph Kathiai Kurauka**
(individual or firm) of address

P.O. Box 17586-00100 NAIROBI

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **0673**

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

Issued Date: **3/14/2022** Expiry Date: **12/31/2022**

Signature…..

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified

Appendix 3: Minutes of public participation

MINUTES OF PUBLIC PARTICIPATION

PUBLIC PARTICIPATION AND STAKEHOLDERS CONSULTATION MEETING FOR THE CHEMORORCH WATER PAN ENVIRONMENTAL AUDIT HELD ON 5TH APRIL 2022 AT THE PROJECT SITE

COUNTY: BOMET
Village: Keregut
Sub-Location: Gelegele
Location: Gelegele
Ward*: Ndanai/ Absi*
Sub-County: *Sotik;*

Attendance
(See list of attendance in Appendix 4)

Agenda
1. Introductions
2. Background of Project from the Community leaders;
3. Background of Project from the County KCSAP team;
4. Background information of the proposed Environmental Audit;
5. Operations and maintenance of the water pan;
6. Feedback from project officials and community members;
7. Administration of tools: questionnaires, interview schedules and Focus Group Discussion Guides;
8. Way forward
9. AOB

Opening Remarks
The meeting was called to order at 1.15 PM with a word of prayer led by one of the project community leader and an introduction session for all participants beginning with the community, management committee, the staff from department of agriculture, Kenya Climate Smart Agriculture Project (KCSAP), County Environment Department, and the Experts. The Chemororoch water pan project Secretary welcome all the officers and urged the community to be attentive to ensure that the objective of the visit is achieved. The CESSCO, KCSAP introduced the Experts to the community.

Min 1: 5/4/2022: Brief on Environmental Audit
The community member present were briefed on the purpose of the meeting by the Environmental Audit Lead experts. Environmental and social impact assessment is mandatory for any new project as

per the laws of Kenya to ensure that the water pan project does not impact negatively on the environment.

Members present were told that the ESIA for Chemororoch water pan was conducted in the year 2019 and issued with the license before the construction works. They were further told that it is a requirement that an environmental audit (EA) is conducted within one year of project implementation and that the EA was overdue. Community members were told that that the objectives of EA were to:

1. Evaluate existing environmental and social management and monitoring plans;
2. Assess the level of adherence to activities within the Chemororoch Water Pan project to environmental and social management;
3. Raise awareness and environmental commitment and environmental policy by the project proponent, staffs, the community and the other concerned parties; and
4. Make recommendations for remedial measures based on EA findings.

Min 2: 5/4/2022: Operation and Maintenance of the Water Pan

(a) Water pan Operations: The community members through the Secretary of the project management committee indicated that the management of the water pan was by the committee members who oversees the operations of the water pan. It is well fenced, gate locked all the time and no one is allowed to enter into the water reservoir. There is a watering trap to serve livestock.

(b) Water use Committee: The secretary informed the team water pan management committee monitors the water use committee. The water is used for livestock only and not for domestic or irrigation. There is no separate water use committee. No water tests have ever been conducted. The community were advised to water use committee to help manage the water use by the community members.

(c) Source of funds for Operations and Maintenance: On the issue of funds for the maintenance of the water pan, the secretary indicated that they had no fund and that was the reason the broken water trap, the spill way gully and silt trap had not been repaired. Also the embankment require planting of more grass cover to reduce erosion. The community were advised to think of starting a fund for conduct minor repairs of the water pan components as may be required and other operations in the future for sustainability.

(d) Capacity building on water and soil management. The community indicated that they were trained on water and soil management but most community members had not been trained. The Agriculture officer present committed to conduct more training on soil and water management.

Minute 3: 5/4//2022: Discussion with the Community

During the discussion with community the issues raised were outlined as follows: -

(a) Benefits from the project

The water pan serves approximately 1,847 community members comprising 775 males and 1,072 females directly benefits from the project. The benefits from the project outlined by the community included: -

- **Livestock drinking water**: The water pan has provided reliable drinking water for livestock resulting to increased milk production
- **Increased sanitation at home:** Women present indicated that there was increased level of sanitation as they are able to clean utensils and wash cloths using water from the pan.
- **Reduced water access distances:** The distances to access watering point for livestock was reduced.

(b) Issues raised by the community

The issues raised and responses by community are summarized as follows: -

- **Water use conflict/grievances:** The community upstream felt have not enjoyed benefits of the water pan and requested for water being pumped at a reservoir tank. The management committee was advised to look into the grievance and source for funds to address the issue.
- **Soil and water contamination:** The community were concerned that the use of agrochemicals and fertilizers may continue contamination of the pan. It was agreed the agriculture staff present will organize trainings to the community on the issue.
- **Siltation at the silt trap**: The community members also indicated the silt trap was silted and hence the water pan reservoir was getting silted. Community members were asked to plant trees and cover upstream and desilt the trap. Also continue training famers on adhering to soil conservation measures.
- **Spill way gulley:** Although the well-constructed with concrete, the weathering just immediate after the concreate has developed gulley which needs to be controlled.
- **Water trap**: The water trap requires repairs. Community members agreed it needs repair. The committee was advised to source for resources to repair it.

Min 5: 5/4/2022 Administration of Questionnaires

The questionnaires were administered by the experts to the key informants and interview schedules and Focus Group Discussion Guides were used to collect data from community members present. This included five (5) key informants interviews and interviews for selected eight (8) members of the community.

There being no other business the meeting ended at 5.15 PM with a word of prayer.

Signed ……. Date…….

Secretary: Chemororoch Water Pan Project Committee

Signed ……. Date…….

Mr. John Muteti, Lead Expert

Signed ……. Date…….

Dr. Joseph Kurauka, Lead Expert

Appendix 4: List of interviewed staff, visitors and immediate neighbours

Republic of Kenya

Kenya Climate Smart Agriculture Project
(KCSAP)
BOMET COUNTY

Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY ....

VENUE .... DATE ....

S/ No	NAME	ID/P/No.	GENDER M	GENDER F	ORGANISATION	DESIGNATION	CONTACT	SIGNATURE
1	Benjamin Maritim	10770742		✓	Chemorongo W. Ass.	Secretary	0719195561	[illegible]
2	Peter Langat	24027067		✓	Chemoroch	Member	0743140768	[illegible]
3	Peter Mutai	24811586		✓	Chemoroch	Member	0712952563	[illegible]
4	Charles Maritim	24027069		✓	Chemoroch	Member	0718064743	[illegible]
5	Justina Kirui	29760437	✓		Chemoroch	Member	0731683649	[illegible]
6	Martha Kirui	21022782	✓	✓	Chemoroch	Member	0726531755	[illegible]
7	Weldon Maritim	32271204	✓		Chemoroch	member	0719311493	[illegible]
8	Vincent Kirui	32552853	✓		Chemoroch	member	0729211646	[illegible]
9	Cherono Evalyne	29800854		✓	Chemoroch	Member	0797081519	[illegible]
10	Gilbert Maritim	2181173	✓		Chemoroch	Member	0724644631	[illegible]
11	Beatrice Kirui	21509074		✓	Chemoroch	Member	0719139812	[illegible]
12	Janet Chepkwony	25788977		✓	Chemoroch	Treasurer	0723394405	[illegible]
13	Pauline Cholongit	8752061		✓	Chemoroch	Member	0726247370	[illegible]
14	Christine Kirui	8142061		✓	Chemoroch	Member	0714571505	CK
15	Jenipher Chepkemoi	31284380		✓	Chemoroch	member	0729207570	[illegible]
16	Juliana Ngerechi	29376270	✓	✓	Chemoroch	Member	0726361491	[illegible]

Republic of Kenya

Kenya Climate Smart Agriculture Project
(KCSAP)
BOMET COUNTY

Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

TYPE OF MEETING/ACTIVITY ....

VENUE .... DATE ....

S/ No	NAME	ID/P/No.	GENDER M	GENDER F	ORGANISATION	DESIGNATION	CONTACT	SIGNATURE
1	Zakayo Bett	21432022	✓		Chemorusoch	Member	0113268740	
2	Emmanuel Kirui	37402044	✓		Chemaroch	Member	0741314652	
3	Anna Langat	20677804		✓	Chemasaroch	Member	074634321	
4	Juliana Ngeiechi	3824268		✓	chemasaroch	Member	0717114091	
5	Lucy chebii maritim	21427259		✓	Chemasaroch	Member	0792774421	
6	Hellen Mutai	3124264		✓	Chemasaroch	Member	0703314321	
7	Caroline Chepkirui	3442219		✓	chemasaroch	member	[illegible]	
8	Gilbert Champs	124849	✓		Chemasaroch	Member	0713904855	
9	Stephen Mutai	20888867	✓		KCSAP	CESSCO	0724683635	
10	Paul K. Maritim	1997010460	✓		CGoB	Director Environment	0723737683	
11	John Kisima	1997026	✓		MoALFC	NPOE	0724081357	
12	Judith C. Bore	2010110263		✓	CGoB	WAO	0723578105	
13								
14								
15								
16								

Appendix 5: Questionnaires for the staff, visitors and immediate water pan neighbours

KII ① Pg 1

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Ministry of Agriculture, Livestock, Fisheries and Cooperatives through Kenya Climate Smart Agriculture Project (KCSAP) intends to identify the impacts of **Chemororoch Water Pan Project** implementation located at Ndanai/Abosi Ward, Sotik Sub-County in Bomet County in relation to environment as a means to ensuring conformity to existing regulations.

In efforts to ensure a safe and sustainable environment, NEMA under Environmental Management and Co-ordination Act (EMCA), 1999 Section 58 (Amendment 2015) requires that an Environmental Audit incorporating public/stakeholders views be conducted to enable it make informed decisions in either approving and/or recommending remedial measures in relation to the subject project.

As a member of the local community/institution, we kindly request for your comments on the existing environment and socio-economic impacts of the Water Pan.

Your valuable response will contribute immensely towards achieving this goal. Please note that your response will be treated with the confidentiality it deserves.

1. Name: NICHOLAS RUTO
2. Mobile No. 0724 339977
3. Gender: Male (√) Female ( )
4. Name of the institution KCSAP- BOMET
5. Designation MBEO
6. Are you aware of the Chemororoch Water Pan project?
   Yes (√) No ( )
7. Are you involved in the implementation of the project?
   Yes (√) No ( )
8. If Yes in Q7 above, are you directly or indirectly involved Directly
9. What **positive environmental and socio-economic Impacts** that have resulted from the implementation of the project?
   1 - water availability for livestock, domestic and small irrigation
   (2) less time use in water fetching than before
   (3) reduce soil erosion downstream due to water harvesting
10. Are there any **negative environmental impacts that have arisen** as a result of implementation of this project?
   NO

Thank you for your cooperation!

KII ① Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes (√) No ( )

11. If yes in Q10, briefly explain
   - soil erosion from the upper catchment
   - water pan excavation & expansion resulted in removal of trees.
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
   - Soil conservation & tree planting in the catchment
   - integrated pest management - safe use of agrochemicals
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
   Yes ( ) No (√)
14. If yes in Q13, briefly explain.
15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
16. Additional remarks/comments The management committee community to form a water resource users association to manage sustainably the pan

Signature .... Date 5/4/2023

Thank you for your co-operation!

KII 5
Pg 1

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Ministry of Agriculture, Livestock, Fisheries and Cooperatives through Kenya Climate Smart Agriculture Project (KCSAP) intends to identify the impacts of **Chemororoch Water Pan Project** implementation located at Ndanai/Aboot Ward, Sotik Sub-County in Bomet County in relation to environment as a means to ensuring conformity to existing regulations.

In efforts to ensure a safe and sustainable environment, NEMA under Environmental Management and Coordination Act (EMCA), 1999 Section 58 (Amendment 2015) requires that an Environmental Audit incorporating public/stakeholders views be conducted to enable it make informed decisions in either approving and/or recommending remedial measures in relation to the subject project.

As a member of the local community/institution, we kindly request for your comments on the existing environment and socio-economic impacts of the Water Pan.

Your valuable response will contribute immensely towards achieving this goal. Please note that your response will be treated with the confidentiality it deserves.

1. Name: [illegible]
2. Mobile No. 072 3515105
3. Gender: Male ( ) Female (✓)
4. Name of the institution: Ministry of Agriculture – County Government Bomet
5. Designation: WARD AGRICULTURE OFFICER
6. Are you aware of the Chemororoch Water Pan project?
   Yes (✓) No ( )
7. Are you involved in the implementation of the project?
   Yes (✓) No ( )
8. If Yes in Q7 above, are you directly or indirectly involved?
9. What **positive environmental and socio-economic Impacts** that have resulted from the implementation of the project?
   - Increased livestock production due to water availability
   - Water for irrigation
   - Have land use e.g. terracing
10. Are there any **negative environmental impacts that have arisen** as a result of implementation of this project?

Thank you for your co-operation!

KII 4
Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes ( ) No (✓)

11. If yes in Q10, briefly explain.
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
    Yes ( ) No (✓)
14. If yes in Q13, briefly explain.
15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
16. Additional remarks/comments.

Signature..... Date..5/4/2022

Thank you for your co-operation!

KII 4
Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes ( ) No (✓)

11. If yes in Q10, briefly explain.
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
    Yes ( ) No (✓)
14. If yes in Q13, briefly explain.
15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
16. Additional remarks/comments.

Signature..... Date..5/4/2022

Thank you for your co-operation!

KII (3)
Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes ( ) No (✓)

11. If yes in Q10, briefly explain.
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
    Yes ( ) No (✓)
14. If yes in Q13, briefly explain.
15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
16. Additional remarks/comments.

Signature..... Date..5/04/22

Thank you for your co-operation!

KII (3)
Pg 1

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Ministry of Agriculture, Livestock, Fisheries and Cooperatives through Kenya Climate Smart Agriculture Project (KCSAP) intends to identify the impacts of **Chemororoch Water Pan Project** implementation located at Ndanai/Abosi Ward, Sotik Sub-County in Bomet County in relation to environment as a means to ensuring conformity to existing regulations.

In efforts to ensure a safe and sustainable environment, NEMA under Environmental Management and Co-ordination Act (EMCA), 1999 Section 58 (Amendment 2015) requires that an Environmental Audit incorporating public/stakeholders views be conducted to enable it make informed decisions in either approving and/or recommending remedial measures in relation to the subject project.

As a member of the local community/institution, we kindly request for your comments on the existing environment and socio-economic impacts of the Water Pan.

Your valuable response will contribute immensely towards achieving this goal. Please note that your response will be treated with the confidentiality it deserves.

1. Name: [illegible] CHEPNGENO
2. Mobile No. 0726531 755
3. Gender: Male ( ) Female (✓)
4. Name of the institution: Kenegut
5. Designation: Farmer
6. Are you aware of the Chemororoch Water Pan project?
   Yes (✓) No ( )
7. Are you involved in the implementation of the project?
   Yes (✓) No ( )
8. If Yes in Q7 above, are you directly or indirectly involved.........
9. What **positive environmental and socio-economic Impacts** that have resulted from the implementation of the project?

1. Availability of water for both domestic animals
2. Irrigation for farm used
3. Domestic used.
4. Tree planting near the project.
5.

10. Are there any **negative environmental impacts that have arisen** as a result of implementation of this project?

Thank you for your cooperation!

KII (2)
Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes (✓) No ( )

11. If yes in Q10, briefly explain. Minimal flooding during heavy rainy seasons.
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
    Control valve installed to regulate the water levels in the water pan.
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
    Yes ( ) No (✓)
14. If yes in Q13, briefly explain.

positive impacts
i) Reduced water conflicts
ii) Increased agricultural productivity and food security.
iii) Increased value of land in the surrounding

15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
    N/A
16. Additional remarks/comments. Need to plant more trees on the catchment.

Signature: [signature] Date: 5/4/2022

Thank you for your cooperation!

KII (2)
Pg 1

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Ministry of Agriculture, Livestock, Fisheries and Cooperatives through Kenya Climate Smart Agriculture Project (KCSAP) intends to identify the impacts of **Chemororoch Water Pan Project** implementation located at Ndanai/Abosi Ward, Sotik Sub-County in Bomet County in relation to environment as a means to ensuring conformity to existing regulations.

In efforts to ensure a safe and sustainable environment, NEMA under Environmental Management and Co-ordination Act (EMCA), 1999 Section 58 (Amendment 2015) requires that an Environmental Audit incorporating public/stakeholders views be conducted to enable it make informed decisions in either approving and/or recommending remedial measures in relation to the subject project.

As a member of the local community/institution, we kindly request for your comments on the existing environment and socio-economic impacts of the Water Pan.

Your valuable response will contribute immensely towards achieving this goal. Please note that your response will be treated with the confidentiality it deserves.

1. Name: PAUL K MARITIM
2. Mobile No. 0723 737663
3. Gender: Male (✓) Female ( )
4. Name of the institution: COUNTY GOVERNMENT OF BOMET
5. Designation: DIRECTOR ENVIRONMENT
6. Are you aware of the Chemororoch Water Pan project?
   Yes (✓) No ( )
7. Are you involved in the implementation of the project?
   Yes ( ) No ( )
8. If Yes in Q7 above, are you directly or indirectly involved. DIRECTLY
9. What **positive environmental and socio-economic Impacts** that have resulted from the implementation of the project?

i) Access to sufficient quantities of water for domestic use
ii) Reduced walking distance in search of water
iii) Increased agricultural productivity and food security
iv) Improved standard of living
v) Increased value of land.

10. Are there any **negative environmental impacts that have arisen** as a result of implementation of this project?
    i) Minimal flooding during heavy rains from overflow

Thank you for your cooperation!

KII 5
Pg 2

ENVIRONMENTAL AUDIT

KEY INFORMANTS

Yes (✓) No ( )

11. If yes in Q10, briefly explain.
    water pollution due agricultural activities e.g. use of chemicals and fertilizer
12. In your own opinion how can the negative environmental impacts that you have highlighted above be mitigated?
    - terracing to reduce soil erosion
    - planting of trees and grass along the water pan
13. Are there any **negative socio-economic impacts that have arisen** as a result of implementation of this project?
    Yes ( ) No (✓)
14. If yes in Q13, briefly explain.
15. In your own opinion how can the negative impacts that you have highlighted above be mitigated?
16. Additional remarks/comments.

Signature: [signature] Date: 5/4/2022

Thank you for your cooperation!

Appendix 6: List of Photos/Plates