ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

SUMMARY PROJECT REPORT

FOR

THE PROPOSED BASSA BOREHOLE PROJECT IN BASSAVILLAGE DADACHA BASSA LOCATION CHERAB WARD MERTI SUB COUNTY IN ISIOLO COUNTY

PROJECT PROPONENT

Bassa Borehole Project Community

PROJECT SPONSOR

Government of Kenya / County Government of Isiolo under Kenya Climate Smart Agriculture Project (KCSAP) with support from the World Bank

JUNE, 2021

CERTIFICATION

THE EXPERTS

This Environmental and Social Impact Assessment (ESIA) Summary project Report (SPR) for the Proposed Summary Environmental Impact Assessment (SPR) Report for the Proposed Bassa Borehole Project in Bassa village, Dadacha Basa Sub location, Dadacha Basa location, Cherab ward, Merti sub-county, Isiolo County has been carried out according to the Environmental Management and Coordination Act, 2015, Environmental (Impact Assessment and Audit) Regulations, 2019 and the NEMA public notice 31 on processing of EIA reports of 12th March 2020. To my knowledge, all information contained in this report is accurate and a truthful representation of all findings as relating to the proposed infrastructural development.

1. Name: BONFACE MANYARA Designation LEAD EXPERT

Signature. _____ Date 12/08/2021

THE PROPONENT

Name: Abdi Rogicha Designation: Chair

Signature. _____ Date 12-8-2021

Address.....Bassa.....

On behalf of the beneficiary community for the proposed Bassa Borehole Project

THE PROJECT SPONSOR

Name: Safari Tulema Designation Chief Officer

Signature. _____ Date 12/8/2021

CHIEF OFFICER
DEPARTMENT OF AGRICULTURE
COUNTY GOVT OF ISIOLO
Sign.....

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ACKNOWLEDGEMENT

The EIA/EA Experts are sincerely grateful to the County Project Coordinator, Kenya Climate Smart Agriculture (KCSAP), Isiolo County and the entire management team for giving us an opportunity to conduct this report for the proposed Bassa community Livestock water project. In addition, we also would like to acknowledge with great appreciation all those key stakeholders and community for availing all requisite information throughout the study process.

Special thanks to all the partners from the NPOE and CPOE who were involved in the review of the report and providing technical backstopping to Devquest consulting limited team for carrying out the Environmental Impact Assessment.

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ABBREVIATION AND ACRONYMS

BOP	Blow-out Preventer
CRS	Comments Registration Sheets
CSR	Corporate Social Responsibility
EHS	Environmental, Health and Safety
CPOE	County Panel of Experts
ESIA	Environmental and Social Impact Assessment
EMCA	Environmental Management and Coordination Act
EP	Equator Principles
ESIA	Environmental and Social Impact Assessment
GBV	Gender Based violence
ESMP	Environmental and Social Management Plan
FGD	Focused Group Discussions
GBV	Gender Based Violence
KCSAP	Kenya Climate Smart Agricultural Project
MSDS	Material Safety Data Sheets
NADF	Non-Aqueous Drilling Fluids
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
OBM	Oil Based Mud
OSH	Occupational safety and health
PPE	Personal protective equipment
PSC	Production Sharing Contract
SBM	Synthetic Based Mud

SPR	Summary Project Report
UNESCO	United nations Educational Scientific and cultural Organization
WBM	Water based Mud

EXECUTIVE SUMMARY

The proposed Project is Bassa Community Livestock Water Project in Basa Village, Dadacha Basa Sub location, Dadacha Bassa location, Cherab ward, Merti Sub-county, Isiolo County. Location of the project Latitude 1.183540 N, Longitude 38.593780E). The proposed project improve access to water for more 3000 people and 4000 livestock. The investment is being sponsored by Kenya Climate Smart Agriculture Project and County government of Isiolo. The proposed project entails drilling a borehole, installing a solar pump and livestock water troughs. The project is estimated to cost **KShs 15,931,986.80.**

Environmental screening was conducted to determine the degree of risk posed by the proposed project on the environment. This ESIA was as a result of recommendation of the County Director Environment (CDE) NEMA based on the screening report. It is also because NEMA Public Notice on ESIA and Legal Notice No. 31 has identified the proposed project as Low risk thus requiring only SPR. This assessment involved screening to ascertain the environmental sensitivity of the proposed site and its surroundings in relation to the planned activities; site visits to physically inspect and document existing facilities at the site and natural and socio-economic features of importance; scoping in order to narrow down to the most critical environmental and social issues requiring detailed evaluation; public participation and stakeholder consultation in order to collect the views of the stakeholders on the proposed project and desktop studies.

Some of the key issues and concerns during the stakeholder consultation exercise were the project's impact on biodiversity through the drilling process, waste generation and the methods that will be used to dispose of waste, benefit to the community such as jobs, social investment projects and infrastructural development, sharing of the water resources and maintenance of the project after KCSAP winds up. These concerns were addressed during the stakeholders' consultation. The major anticipated negative environmental impacts of the proposed project include: loss of flora and fauna, soil erosion, solid waste, Occupational Health and Safety (OHS) hazards, noise and dust. The social impacts include: conflict over water resource, increased cases of HIV and AIDs, risk of transmission of the COVID - 19 disease, labor risks including labor influx and associated Gender Based Violence (GBV) in form of Sexual Exploitation and Abuse and Sexual Harassment (SH).

The Environmental and Social Management and Monitoring Plan (ESM&MP) will be implemented at a total cost of KSh 1,145,000. The contractor will implement the

Environmental and Social Management and Monitoring Plan (ESM&MP) during construction phase while the Proponent will implement Environmental and Social Management and Monitoring Plan (ESM&MP) during the operation phase.

The study finds the project is acceptable if the identified and developed management plans and practices are implemented accordingly. It also recommends appropriate monitoring of the project development and operational activities to ensure that adverse impacts that were unforeseen are identified and addressed in a timely manner.

CHAPTER ONE
INTRODUCTION

1.1 Project Background

The proposed drilling and development of Bassa Borehole Project in in Bassa village, Dadacha Bassa Sub Location, Dadacha Bassa location, Cherab ward, Merti sub-county, Isiolo County was identified during the Participatory Integrated Community Driven Development Process conducted by KCSAP in Cherab Ward at Bassa in March 2019. During the process water for livestock and domestic use ranked number one priority of the development needs of Bassa Community. The project was proposed by the Bassa community through their representatives to increase the supply for water for crop and livestock production as well as domestic use. The investment is being sponsored by Kenya. The proposed project entails drilling of a borehole of depth 237 meters, installing solar pump, construction of $50m^3$ elevated steel water tank and construction of cattle troughs.

1.2 Justification of the project

The area experiences low rainfall and has no reliable source of water, drilling of a borehole therefore offers a cheaper alternative to reduce watering distances and deficits during the critical dry seasons. The project has 3081 direct beneficiaries Male 752 Female 2289 with indirect beneficiary totaling 934. Males 334 while Females are 600 and the vulnerable beneficiaries (poor, widows/widowers, orphans, physically challenged, elderly, HIV/AIDs affected / infected) are: Male 115 Female 200 a total of 315, will also improve access to water for 4,000 livestock, reduce distance to water source from 20 km to 10 km and reduce livestock watering interval from two days to one day.

1.3 Justification of conducting SPR

Environmental screening was conducted to determine the degree of risk posed by the proposed project on the environment. This ESIA study was undertaken under requirements of Environmental Management and Coordination Act (EMCA) of 1999 schedule II as stipulated by National Environment Management Authority (NEMA) through the Environmental Impact Assessment (EIA) regulations and of Environmental Management and Coordination (EMCA) Act (2015 Amendment). This ESIA was as a result of recommendation of the County Director Environment (CDE) NEMA based on the screening report. It is also because NEMA Public Notice on ESIA and Legal Notice No. 31 has identified the proposed project as Low risk thus requiring only SPR.

1.4 The SPR Objectives

The objectives of SPR include the following:

- To analyze the socio-economic and environmental status of the areas during pre and post construction- and thus justify development of the proposed project.
- To conduct a public participation and stakeholders consultation for the proposed project.
- To identify and analyze the potential environmental and social impact of all the project cycle phases (planning, construction, operations and decommissioning).

- To propose mitigation measures for the identified environmental and social impacts for all the project lifecycle.
- To prepare Environmental and Social Management Monitoring Plan (ESMMP) for the entire project lifecycle based on study

1.5 SPR Approach and Methodology

1.5.1 Environmental Screening

This was conducted to determine the degree of risk posed by the proposed project on the environment. This was conducted using ESS screening checklist for Sub-Projects as provided for in the ESMF to determine required ESIA instruments. See annexed screening checklist (Annex 1).

1.5.2 Environmental and Social Scoping

This helps to narrow down on the most critical issues during assessment. The environmental and social issues were categorized into physical, natural/ecological and social, economic and cultural aspects.

1.5.3 Desk Review

This involved examining current and past literature related to the proposed project. Secondary sources of information scanned included project appraisal documents, engineering design report among others.

1.5.4 Public participation and stakeholders' consultation

This was guided by a household questionnaire developed by ESIA/EA experts with key focus on the area environment, community needs, potential risks, and benefits of the project.

1.5.5 Observation and photography

This method was used to assess and quantify environmental risks posed by the proposed project. This was based on the experts' long-term knowledge and experience in environmental and social impact assessment. Key types of data gathered using this technique included the soil type, area ecosystem, environmental risks, and potential waste management strategies.

1.5.6 Reporting, review of draft SPR and Submission to NEMA

This involved preparation of SPR in compliance to the EIA guidelines, reviewing the first draft by CPOE KCSAP Isiolo County and submitting the first draft report to NPCU KCSAP for review and onward transmission to the World Bank team. The ESIA SPR is then submitted to NEMA for their review to enable them make an informed decision on the proposed project.

1.6 Organization of SPR

This Summary Project Report is organized into seven substantive chapters. Chapter one introduction Chapter 2 nature of the project, Chapter 3 The location of the project, chapter 4 public consultation and participation process, Chapter 5 identifies and discusses the anticipated impacts and mitigation measures of the project, Chapter 6 the environmental and social management and monitoring plan (ESMMP), while Chapter 7 the conclusions and recommendation followed by references and annexes

CHAPTER TWO
NATURE OF THE PROJECT

2.1 Introduction

This Chapter provides a description of the key Project components and details regarding activities throughout the life of the Project.

2.2 Project description

2.2.1 Drilling design

The borehole will be circular in shape. The maximum recommended depths by the hydro-geologist are 237 meters. It is important that the proposed diameter be not more than 230 mm since there is no great advantage derived by increasing the diameter.

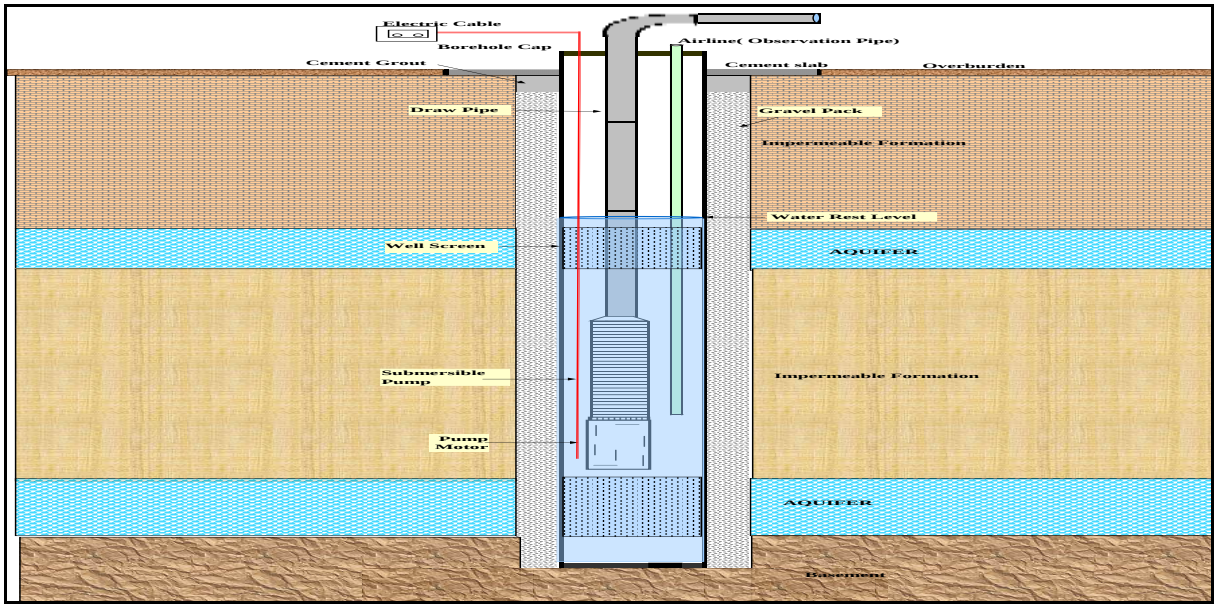

Figure2.1: A schematic illustration of completed borehole design

2.2.2 Water Well Design

For the purposes of monitoring of groundwater abstraction and the static water level measurements, a water meter and an airline respectively must be installed. An airline consists of an open tube or several pipes. These pipes are connected together and are normally attached to the pump's drop pipes.

2.2.3 Casing

The two main purposes of a well casing are to support the borehole and to help protect the aquifer from contamination. The casing serves as a housing for the pumping equipment and as vertical conduit for water flowing upward from the aquifer to the pump intake. The proposed project should have two casings of say 30.5 and 20-cm used in the well. The 30.5 and 20-cm casings will be cut off with the latter casing slightly below the outer casing. The 30.5 –cm pipe will serve as the protective casing, and will have a locking cap installed. The well will be flush-mounted at the ground surface, with a relief above existing grades and will have a minimum of 60cm stick-up in order to readily find it as well as prevent temporary

flooding from making it inaccessible. An open borehole provides an avenue where vertical migration of contaminants may occur from contaminated fracture zones to clean fractures. To prevent this potential migration and cross- contamination, and still maintain the preliminary borehole a plug will be installed in the borehole.

2.2.4 Grouting

Grouting is the act of injecting certain substances into the void of earth materials to reduce or eliminate their permeability, consolidate them, or increase their strength. Though it is not always a part of a well, gravel packing is often used in addition to the well screen. Grouting or cementing well casing involves filling the annular space between the casing and the drilled hole with suitable slurry of cement or clay.

2.2.5 Plumpness and Alignment

Water well should be both straight and plumb, although in practice any borehole of substantial depth may not be perfectly straight or perfectly plumb. A well bore may be straight but not plumb. A deviation from plumpness of two-thirds the well's inside diameter per 30 meters is reasonable, considering the difficulties of drilling in earth materials. Straightness of the well bore is important, because it determines whether or not the casings and a properly sized pump can be installed in the well to the desired depth.

2.2.6 Screens

The choice of material used to fabricate screens depends on the water quality, potential presence of iron bacteria and strength requirements. Water quality analysis show whether groundwater is corrosive or incrusting or both. It is therefore important to use a well screen fabricated from corrosion-resistant material.

2.3 Borehole development

All drilling methods cause some plugging of fractures or crevices in rocks. Borehole development is designed to maximize the well yield by repairing damage done to the formation by the drilling so that natural hydraulic properties are restored. Development also alters the basic characteristics of the aquifer near the borehole so that water will flow more freely to a well.

Development procedures have the following beneficial purposes:

a) Reduce the compaction and intermixing of grain sizes produced during drilling by removing fine materials from the pore space.
b) Increase the natural porosity and permeability of the previously undisturbed formation near the borehole by selectively removing the finer fraction of aquifer materials.
c) Remove the filter cake or drilling fluid film that coats the borehole, and remove much or all of the drilling fluid and natural formation solids that have invaded the formations so that the well will yield sand-free water.

2.4 Construction material input

a) The proposed borehole development will take in a considerable amount of artificial and natural material in all its phases which will have both beneficial and adverse impacts on the environment. Both on-site and off-site impacts are anticipated from usage of construction materials. The most common of these impacts are income circulation in the economy, creation of employment opportunities, off-site depletion of raw materials, land degradation, pollution, excessive demand on raw materials and health hazards.

Table 2.1: Summary of the main construction material input into the proposed project

Materials	**Sources**	**Uses**
Sand	Suppliers near the proposed site	Preparation of concrete for grouting during sanitary sealing
Hardcore	Suppliers near the proposed site	Preparation of aggregate for making a firm base during sanitary sealing
Cement	Hardware near the proposed site	Mixed with sand to prepare concrete for grouting
PVC or metal pipes	Hardware near the proposed site	For water piping systems and casing of the borehole
Water	Nearby stream	Input in the drilling process

2.5 Project activities

A summary of the activities to be undertaken during the proposed borehole development is provided (Table 2.2).

Table 2.2: Description of the proposed project phases

Phase	**Main activities**
Pre-construction	a) Conducting a ground water survey. This has already been carried out. A report on this survey was submitted to the Water Resources Authority (WRA) in order to seek authority to sink the borehole. This is documented in the attached hydro-geological survey report. b) Carrying out of the EIA process and production of the Summary Project Report c) SPR review, decision-making and licensing
Construction	a) Site preparation and mobilization of construction personnel, equipment and construction material b) Removal of vegetation, rubbish and unwanted and/or old structures from the construction and material mobilization areas c) Contract works including drilling and borehole development; plumbing; drainage works; and installation of a piping system and water tanks d) Use of construction material, energy, machinery, hand tools and equipment; and employment of human labour e) Disposal of construction waste and general environmental management
Transition phase from construction	a) Remove drilling wastes from the site b) Rehabilitate areas within and outside the site that will have been

Phase	Main activities
to operation	adversely affected by the construction through spillages of pollutants such as harmful chemicals, cement and paint among others or destroyed in other ways c) Carry out an appropriate landscaping programme using appropriate plants
Operation	a) Commissioning the completed project for use of the water from the borehole b) Extraction and usage of water from the borehole c) Environmental management including landscaping, waste water management and pollution control d) Repair and maintenance of the borehole
Decommissioning	a) Application for approval and facilitation of the decommissioning from relevant authorities and appropriate professional personnel incorporating environmental experts; water experts; planners; public works officers and public health officers b) Abandonment of the borehole and the site, change of use and removal of borehole components from the site c) Rehabilitation and/or restoration of annihilated components of the environment

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2.6 Project Cost

The estimated cost of the project is **Kshs 15,931,986.80** including the cost of implementing the ESMMP

CHAPTER THREE
THE LOCATION OF THE PROJECT

3.1 Introduction

The proposed project aims at drilling one borehole in Bassa village, DadachaBassa Sublocation, DadachaBassa location, Cherab ward, Merti Sub-County, Isiolo County sponsored by Kenya Climate Smart Agriculture Project and county government of Isiolo.

3.2 Environmental climate site description

3.2.1Altitude

Isiolo lies on 1095m above sea level and has a tropical climate.

3.2.2Rainfall

The county is hot and dry in most months in the year with two rainy seasons. Most precipitation falls in November, with an average of 182 mm. The short rain season occurs between October and December with the peak in November while the long rain occurs between March and May with the peak in April.

3.2.3Temperature

High temperatures are recorded in the county throughout the year, with variations in some places due to differences in altitude. The mean annual temperature in the county is 29 degrees centigrade.

3.2.4 Soils

The soils are mainly red brown to dark brown loam. An impure superficial limestone generally known as kunkar is commonly developed in the drier parts of the area to the north, east of Isiolo airfield a deposit of such material is so widely developed that the area is locally called *limestone plain*.

3.2.5Flora and fauna

The semi-arid zone covers only 5% of Isiolo County, around Kinna area, with vegetation

mainly of thorny bush with short grass, different species of animals especially livestock kept are camels, cattle, donkey, cats, dogs, goats, sheep, and chicken. Keeping of livestock is done mostly by the Somali, Boran, and Samburu pastoralists the common types of cattle found are the Boran, African zebus and Sahiwal while the common camel breed is the Somali, Turkana and the Rendille/Gabra breed .the common types of goat found are Galla (main), the small east African, Saanen, toggenberg, the swiss alpine and many crosses of local and exotic breeds.

3.3.Education

Education levels in Isiolo County are generally low. Literacy levels in Merti are low which is most likely to be attributed to inadequate number of schools and vocational training colleges in the area.

3.4 Economic Activities

Crop production

Crop production in the county is carried out in the agro–pastoral livelihood zone and the main crops grown include maize, cowpeas, and beans. Irrigation agriculture is practiced in the agro–pastoral livelihood zone in Merti, Garbatulla and parts of Isiolo Central Ward. It is mainly carried out along rivers; Bisinadi, Isiolo River and Ewaso Nyiro.

Livestock Farming

Livestock ownership

Majority of the households reported to own more goats and sheep. Chicken, Camel, and donkeys was the least livestock owned per household in the area. In terms of mode of grazing for the animals kept in the project area, the respondents use free range mode of grazing with most of the land being community land in Merti.

3.5 Financial services

In Merti Sub-County of Isiolo County, has no physical presence of banking institutions. However, the people of Merti still enjoy the banking services through banking agents and mobile money services.

CHAPTER FOUR
PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATION

4.1 Introduction

Stakeholder engagement is a key part of this ESIA process. One of the key aims of the stakeholder engagement exercise is to ensure all relevant stakeholders are provided with the opportunity to express their concerns and opinions and in turn have them reflected in the ESIA and ESMP including the very vital role of ensuring social inclusion. The stakeholder engagement exercise also provides NEMA with the necessary information to assist it in making an informed decision about the Project.

4.2 Objectives of community and stakeholders Consultation

The main objective of the exercise was to inform stakeholders about the project and its likely effects, which in turn would incorporate their inputs, views, and concerns, and thus enable their views to be taken into account during the decision-making. The specific objectives of the consultations were to:

- Ensuring social inclusion in the project and therefore, broad project support and ownership.
- Ensuring that important impacts are not overlooked, and benefits are maximized.
- Facilitating consideration of mitigation measures
- Improving transparency and accountability of decision-making.
- Increasing public confidence in the ESIA and build community confidence in the project.
- Obtain local and traditional knowledge that may be useful in decision-making including any Indigenous Knowledge Systems (IKS) (if any);
- Provide an opportunity for the public to influence the project design and operational plan in a positive manner.
- Reducing chances of conflict through early identification of contentious issues.

4.3 Categorization of community participants and stakeholders

The stakeholders were grouped into two main categories depending on their various needs, interest, and potential influence to the project: which are:

1. **Primary Stakeholders:** These are stakeholders directly affected by the project such as the local residences/ communities.
2. **Secondary Stakeholders:** These are stakeholders indirectly affected by the project but influence development through project implementation. These include but not limited to: National Government, Isiolo County Government, Local Government, non-governmental organization (NGOs).

4.4 Methodology of public participation and consultation

4.4.1 Household questionnaires

Social economic questionnaires were used for the key community members and stakeholders

4.4.2 Focused Group Discussions and Community Barazas

Focused grouped discussions involved meetings with representatives from different sectors from the National Government, County Government, Local Government, NGOs, Community Based Organizations (CBOs). The main aim of the community baraza's was to target residents from the location in Bassa village, Merti Sub County, Isiolo County.
The FGD and Community Baraza's were held in order to obtain:

- Information on community expectations and social risk associated with the project
- Insight on the challenges faced in the County
- Environmental and Socio-economic baseline characteristics of the project area
- To assess impact of the project on the environment and communities, both positive and negative impacts
- To establish mitigation measures for the negative impacts

4.4.3 Stakeholders Consulted

The stakeholder consultation process was conducted the 10th and 11th June 2021 meetings held in Isiolo County.

4.4.3.1Primary Stakeholders Consulted

This comprised of communities in Bassa Village, Merti Sub-County. The Community stakeholder consultation concentrated in Bassa Village because this is the area of interest where the proposed drilling is likely to take place (Annex3).

4.4.3.2 Secondary Stakeholders Consulted

Contact Person	Institution	Position Role
Paul Kasimbu	Lands Commission Isiolo	County Coordinator
Elizabeth Ekiru	County Lands Office Isiolo	County Surveyor
Martin Mzee	Public Health Isiolo	Deputy county Public Health Officer
Lordman Lekalkuli	National Drought Management Authority Isiolo	County Draught Coordinator
Murethi	NEMA Isiolo	Environmental Officer

4.5 Summary of the Key Issues, Concerns and Responses

Communities raised concerns that the project might have both environmental and socio-economic effects to the surrounding communities. Below are some of the issues raised:

4.5.1 Environmental Impact on Biodiversity

Community feared that the project will impact on the biodiversity such as destruction of vegetation and soil disturbance in the area. Community proposed that measures should be put in place to ensure that all biodiversity in the area are conserved by planting indigenous trees along the fence

4.5.2 Waste Generation

Waste generation and methods of waste disposal was another concern raised by the community members. waste management system will be put in place; for example, the drilling fluid will be treated and reused in the drilling process.

4.5.3 Water Quality

The community from Bassa location did not raise issues on water quality. The client and the community will rely on their water wells from nearby sources for water use. It is the duty of the contactor to make sure the water quality of the community water sources are not interfered with.

4.5.4 Air Pollution

During the stakeholder consultation process, some of the community members feared that the process of drilling will generate emissions and generate dust leading to air pollution. DevQuest Consultants informed the members that the contractor will be using up to date technologies to improve efficiencies to reduce emissions and mitigation measures will be put in place to reduce emissions.

4.5.5 Noise and Vibration

Mobilization and operation phase of the project will generate noise in and around the projects area; however, mitigation measures are to ensure that working hours are restricted to 0080Hrs-5.00hrs

4.5.6 Socio-Economic Employment

The local residents emphasized that they should be considered for jobs and especially unskilled employment and give community members priority.

4.5.7 Land use

It was noted that most of the people Bassa do not have land Title deeds; it is community land. The selected area being in a community land, a letter of no objection must be issued for the land parcel to be used for public investment or registered as public before drilling commences. The land parcel or land issue must be sorted out first before any investment is done.

4.5.8 Compensation

The issue of compensation was not raised by the community in Bassa Village where community stakeholder meetings took place. This was because that, the community stated that the selected project site lies in a community land thus no issues of compensation will be raised. With Bassa Village being mostly community land, the community stakeholders were advised to give a letter of no objection for the project area.

4.6 Community benefits and Corporate Social Responsibility (CSR)

The community was more concerned on the benefits they would receive once water was drilled in Bassa Village; and if whether the communities or individuals would benefit from the project. The community members were informed that there will be both direct and indirect benefits to the community members such as employment, CSR proposed by the community members, improved roads since they will need to be upgraded to facilitate transportation of project equipment's.

It was noted that the key concern in the area is poor road network, and inadequate health and education facilities. Community members have requested for more CSR projects to be done to improve the economic standards of the area. Some of the suggested CSR projects

include schools and expanding of the only existing roads in Bassa; equipping of health centers; and providing cheap energy to the communities.

4.7 Health and Safety Issues

Communities wanted confirmation that their safety will be always considered during project operation. The project activities will be confined within the borehole and fencing of the facility done.

4.8 Social impacts

The proposed project will increase the number of people in the project area and its surroundings which could lead to socio-cultural diversification. Population influx – population in/ out, increase in population may result in decreased benefits owing to increased consumer base, anti-social behavior such as spread of HIV/AIDS and vandalism of the property.

CHAPTER FIVE
ANTICIPATED IMPACTS AND MITIGATION MEASURES

5.1 Introduction

This chapter outlines the potential negative and positive impacts that will be associated with the project. The impacts will be related to activities to be carried during the life cycle of the project: that is, design, construction, operation and decommissioning phase. The proposed development has the potential to create a range of impacts on the environment. These potential impacts can be both positive and negative. The objective of this chapter is to assess the likelihood of impacts which will be incorporated in the project design, construction, operation, and decommissioning phase. If the negative impacts cannot be eliminated, then they should at least be mitigated to as low as reasonably practicable.

5.2 Anticipated Positive Environmental and Social Impacts

The investment will directly benefit the community the anticipated benefits are:

1) Reduced watering distances for livestock and domestic use hence time spent in search of water will used for economically and socially viable activities for the families

2) Employment creation during construction and operation phases of the project

3) create business opportunities for various professionals/consultants involved in the planning stage of the project

4) Increased access to water for their livestock reducing watering from two days to one

5) The project will help develop the human capital in the country through transfer of skills to young engineers, environmental specialists and plumbers among others.

6). Growth of the local economy by providing of goods and services to the project

5.3 Anticipated negative Impacts during planning stage

5.3.1 Land acquisition

In Bassa, the land is communal.

Mitigation Measures

- No objection / consent to use the site from the community county government and national government

5.3.2 Conflicts during site survey

During planning stage major activity includes site surveying which may compromise safety of surveyor when they access the considered site.

Mitigation Measures

- Community members to guide the surveying team
- All agreements should be made in writing

5.4 Anticipated negative Impacts during construction phase

5.4.1 Vegetation loss

The well site is largely covered by shrub and bush. Vegetation will be lost or altered to pave way for construction activities for access roads and the borehole

Mitigation Measures

- Minimize clearance of existing natural vegetation at the at the site

- Re-establishing vegetation Plant vegetation with water conservation/purification traits around the borehole.

5.4.2 Soils and Geology

The borehole drilling and construction activities are anticipated to impact on soil and geology of the project site in several ways including: disturbances to soil subsequently resulting in erosion, soil contamination by oil leaks from drilling and construction equipment.

Mitigation measures

- Temporary casings may also be installed during drilling
- Drilling be done in the presence and supervision of a hydro-geologist
- Avoid heavy compaction activities around the proposed site
- Carry out a hydrogeological survey to determine the suitability of the area for the drilling of a borehole
- Ensure the borehole is drilled to a minimum finished diameter of 8". The borehole should then be lined with appropriate 6" casings

5.4.3 Air quality

Drilling and borehole construction equipment will generate combustion/exhaust emissions. Potential pollutants from diesel combustion include nitrogen oxides (NOX) (which comprises of nitrogen dioxide (NO2) and nitric oxide (NO), sulphur dioxide (SO2), carbon monoxide (CO), carbon dioxide (CO2), and particulate matter smaller than 10 and 2.5 microns .The gaseous pollutants from combustion emissions are considered minor and are almost impossible to quantify, therefore they are not assessed and do not attract specific management actions.

Mitigation Measures

- Reduce speed for vehicles visiting the site
- Provide dust masks to people at the site
- Continuously water the site during the drilling process
- Use well maintained machinery
- Use well serviced vehicles

5.4.4 Noise and Vibration Impact

During drilling and borehole noise sources will include, drilling rig, and vehicles used to transportation of materials and equipment to the site. Noise from drilling rig will be continuous over 12 hour period while noise from vehicles will be transient, limited to period the vehicles are in operation.

Mitigation Measures

- Selecting equipment with lower sound power levels
- Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas
- Developing mechanism to record and respond to complaints
- All workers exposed to noise should have appropriate PPEs

5.4.5 Solid waste generation

Solid wastes include drill cuttings, solid containers such as cement, bentonite and gravel bags and other packets from materials used during implementation of the project. Spillage of oil and grease from machines used in borehole drilling, construction, repair and maintenance and

transportation activities, which can have negative impact on microbial life. The occurrence of these wastes is expected to be minimal.

Mitigation Measures

- Wastes such as papers or polythene containers, cement, bentonite and gravel bags, should be disposed in a sanitary dumpsite after completion of drilling.
- Excavated drill cuttings will be used to backfill the borehole annular space and the drain channel.
- Drilling foam is biodegradable and is not harmful to plants or animal species; however, a draining channel will be constructed to drain the drilling fluid and waters away from the operation site. Minimal drilling foam should be used and only when necessary to minimize foaming effect.
- Avoid water wastage and all the drilling foam remaining in the borehole will be pumped out during development of the borehole and test pumping.
- Keep all fuels in secluded sections with clearly marked “Danger” or” Hatari” tags in place. They should be stored, properly handled and their wastes disposed safely during construction.
- Repair and maintenance of vehicles and plants must be carried out at petrol station or garage to avoid fuels and lubricants spills at the project site.

5.4.6 Occupational Health and Safety

Borehole drilling, construction involve some inherent dangers related to exposure to noise, operation of equipment. In the absence of sufficient management of Health and Safety (H&S) issues, the workforce may suffer injury or death.

Mitigation Measures

- Use of proper and appropriate PPE such as dust masks
- Develop By-laws that are acceptable to all.
- Crew supervisor to ensure that safety standards are maintained and safe working practices like COVID 19 MOH guidelines of use of face masks ,social distancing, sanitizing ,washing hand are adhered to by all members of the crew and community.
- Restrict livestock and human movement
- Formulate and implement emergency preparedness and response plan
- Construct the facilities as per the recommended plans that include fencing, toilets and water pumping site and paths among others
- A First Aider must be appointed, trained and equipped with adequate equipment for handling first aid incidents

5.4.7 Impacts on water resources

The proposed project is anticipated to impact on water resources during construction. This abstraction is not expected to impact negatively on other boreholes considering there are no other boreholes in the area. The anticipated negative impacts include; Water quantity may be affected by over-abstraction, excess demand from increased population (both human and livestock) and water wastage through spillage. Water quality will be dependent on the borehole completion measures implemented to prevent any pollution from the surface flows.

The potential impacts to water resources during construction phase are:

- Inadequate penetration of aquifers and poor construction-
- Creation of new pathways between pollutants and water resources; and
- Introduction of contaminants and pollutants to the groundwater through drilling machinery or uncontrolled leaks and spills

Mitigation measures

- Appropriate construction methodology will be applied to ensure that groundwater mixing does not occur
- Borehole construction equipment will be suitably maintained and spent fluids handled and disposed of in an appropriate manner,
- International best practice borehole construction methodologies will be applied
- A qualified hydro geologist should supervise the drilling, construction and test pumping of the proposed borehole.
- The supervising engineer in collaboration with the contractor should provide an appropriate casing and screening design in order to optimize exploitation of the aquifers.
- Test pumping should be conducted and abstraction levels set and implemented as required by law.
- Unwanted liquids and/or solids should not be introduced in the borehole during drilling
- Appropriate screening filters should be installed in the pumping system during construction of the borehole

5.5 Social economic Negative Impacts during construction phase

5.5.1 COVID -19 spread among community members during consultation

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 activities will lead to close interaction of the community members leading to a high risk of spreading COVID – 19 amongst community members during the consultation process.

Mitigation Measures

- Put in place measures to prevent and manage the spread of the COVID-19
- Develop SOPs for managing the spread of COVID-19
- Provide and enforce and use of appropriate PPE by project personnel
- Put in place means to support rapid testing of suspected workers for COVID-19

5.5.2 Sexual exploitation and abuse of community members by project workers

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

- Develop and implement an SEA action plan with an Accountability and Response Framework as part of the Contractor-ESMP. The SEA action plan will follow guidance on the World Bank's
- Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;
- Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management;
- Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights;
- Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistleblower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

5.5.3 Gender-based violence at the community level

GBV constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties and/or termination of employment. This impact refers to gender-based violence at the community level that women and girls may experience as a result of Project implementation. This also refers to other GBV-related risks incurred as a result of project implementation that do not adequately consult women and adolescent girls in the community about safety and security issues related to the delivery of water and sanitation services.

Mitigation Measures:

- 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; etc.
  - 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

5.5.4 Spread of communicable diseases and HIV/AIDS impacts

In migration of people from different regions may lead to behavioural influences which may increase the spread of diseases such as HIV/AIDS.

Mitigation Measures:

- Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS and sexual health and rights through staff training, awareness campaigns, multimedia and workshops or during community Barazas.
- Use existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members

5.5.5 Labour influx into the project area

The project will attract labour into the project area. Like any other project with significant recruitment, the influx of labour heightens the risks associated with sexual exploitation and abuse of community members by project workers, gender-based violence at the community level and sexual harassment between project workers. In addition, labour influx into this project area could be source of conflict between workers and the local population. The impact of conflicts because of influx of labour, though localized, temporary, reversible and noncumulative, can be severe in magnitude.

Mitigation Measures:

- Effective community engagement and strong grievance mechanisms on matters related to labour.
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx, including sexual exploitation and abuse
- Proper records of labour force on site while avoiding child and forced labour
- Fair treatment, non-discrimination and equal opportunity of workers.
- Comply to provisions of Labour Relations Act 2012 and Work Place Injuries and Benefits Act (WIBA 2007)
- The Contractor shall require his employees in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse.

5.5.6 Gender based Violence and Sexual Harassment(GBV/SH)

This impact is triggered during project construction phase when the contractor(s) fail to comply with the following provisions:

a) Gender Inclusivity requirements in hiring of workers and entire project management as required by Gender Policy 2011 and 2/3 gender rule; and
b) Failure to protect human risk areas associated with, disadvantaged groups, interfering with participation rights, and interfering with labour rights.

Mitigation measures

Ensure clear human resources policy against sexual harassment that is aligned with national law.

- Integrate provisions related to sexual harassment in the employee Code of Conduct.

- Ensure appointed human resources personnel to manage reports of sexual harassment according to policy.
- The contractor(s) shall require 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 SEA.
- The contractor(s) will implement provisions that ensure that GBV at the community level is not triggered by the project, including:
  i) Effective and on-going community engagement and consultation, particularly with women and girls.
  ii) Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; etc.
- The contractor shall develop specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment.
- 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.

5.5.7 Child Abuse

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

Mitigation measures

- The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.
- All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behavior.
- Children under the age of 18 years will not be hired on site as provided by Child Rights Act (Amendment Bill) 2014.
- Refrain from hiring children for domestic or other labour, 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 labour laws in relation to child labour specifically provisions of Kenya's Employment Act, 2007 (Cap. 226) Part VII on protection of children against exploitation.

5.6Anticipated negative Impacts during Operation phase

5.6.1 Fauna Disturbance

Short-term disturbance of local habitats from drilling noise, vehicular traffic and other activities will lead to changes in herbivore grazing patterns for livestock.

Mitigation measures

- Educate workforce on environmental concerns
- Keep the workforce within defined boundary and to the agreed access routes

for vehicles.

- Implement a tree planting program within the borehole to offset loss of trees due to the construction phase
- Ensure protection of important resources by establishing protective buffers to exclude unintentional disturbance.

5.6.2 Noise and vibration

During operation phase, the only primary noise source will be water pump. Noise and vibration pollution will emanate from flaring and rotating equipment-rigs. Noise sources will include flares and vents, pumps.

Mitigation measures

- Machineries should be maintained regularly to reduce noise resulting from friction during operations.
- Using modern machinery equipment with noise suppressing technologies in order to reduce the noise-rating as much as possible
- A grievance procedure will be established whereby noise complaints by neighbors are recorded and responded to

5.6.3 Occupational Health and safety

Risks and hazards that will lead to serious injury associated with the exploration drilling process and insecurity

Mitigation measures

- Placing signs around where there are risks. Signs should be in English and Kiswahili for easy understanding
- The borehole should be cordoned off to protect the general public from dangers associated with operations work
- Ensuring there is security in and around the site to control the movement of unauthorized personnel
- Raising awareness, educating workers on risks from equipment, and ensuring they receive adequate training on the use of the equipment

5.6.4 Impacts on water resources

Water conservation measures should be encouraged during the existence of the project. Siltation of borehole; and Water supply conflicts resulting from ground water resource depletion

Mitigation Measures

- Water quality monitoring will be carried out to ensure that there is no pollution of the groundwater
- Train on water use efficiency with conservation aspects being integrated.

5.6.5 Conflicts

Common grievances expected to arise during the proposed project implementation include:

a) Human and livestock interference with the project;

b) Negative project impacts which may include disruption of income streams, physical harm, and nuisance from construction activities;
c) Health and safety risks;
d) Socially unacceptable project staff relations with the communities and other stakeholders;
e) Conflicts over water sources; and
f) Pollution and other environmental related impacts

Mitigation measures

- Establish a GRM for the proposed project;
- Seek to establish amicable relationships with stakeholders and manage the impact of the project activities on affected communities;
- Put in place a pre-emptive community liaison structure aimed at identifying potential issues arising from project-related impacts and addressing them before they become grievances;
- Establish a grievance redress mechanism targeting communities and other project stakeholders and which will allow stakeholders to easily put forth their concerns relating to the project, implementation and have them addressed in a prompt and respectful manner;
- Ensure the grievance redress mechanism is available to the affected community members and stakeholders at no cost;
- Address all raised grievances, real or imagined and take reasonable steps to maintain confidentiality; and
- Educate all project stakeholders on the availability and use of the grievance redress mechanism, before, during and after construction of the proposed project.

5.6.6 Sexual Exploitation and abuse against community members

This impact refers to SEA 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

- The SEA action plan will include how the project will ensure necessary steps are in place for:
  i) Prevention of SEA: including Code of Conducts and ongoing sensitization of staff on responsibilities related to the Code of Conducts and consequences of non-compliance; project-level Information Education Communication (IEC) materials.
  ii) 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.
  iii) Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard grievance redress mechanism (GRM); mainstreaming of prevention of sexual exploitation

and abuse (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.

iv) 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

5.7 Anticipated negative Impacts during decommissioning phase

Decommissioning aims at restoring the project site back to its original state or to a stable environmental condition for future use. However, some of the decommissioning activities to be carried out onsite may result in negative impacts to the bio and socio-economic environment.

5.7.1 Waste generation

The waste generated will contain materials that were used in construction of the borehole. These include concrete, metal, wood and waste in form of debris and pieces of steel.

Mitigation measures

- The contractor should prepare a site waste management plan prior to commencement of demolition activities.
- Some of the solid waste produced can be recycled for use in future projects or sold off as scrap.
- Identifying all sources of wastes, and ensuring wastes are handled by licensed NEMA waste handler

5.7.2 Noise and vibration

Noise will be generated from bringing down the drilling rig, auxiliary equipment and camp; vehicle movement transporting the rig and auxiliary equipment from the site.

Mitigation measures

- Selecting equipment with lower sound power levels
- Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas
- Developing mechanism to record and respond to complaints
- All workers exposed to noise should have appropriate PPEs

5.7.3 Occupational Health and safety

These are related to the presence of heavy machinery and increased vehicular traffic which increases the likelihood of accidents occurring.

Mitigation measures

- Provision and Use of Personal Protective Equipment (PPE) e.g., dust masks, overalls, gloves,
- Raising awareness among the workers on the likely risk and hazards and ensure they have adequate training on the use of machines and equipment.

5.7.4 Loss of employment

There will be loss of jobs to locals employed on contract basis to work on site. This will affect both skilled and unskilled personnel

Mitigation measures

- The contactor will ensure all the local employees are well informed on the project decommissioning and its likely impacts before the project final closure.

CHAPTER SIX
ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

6.1 Introduction

The environmental and social management and monitoring plan (ESM&MP) sets out, in general, the mitigation and monitoring measures and institutional arrangements to address adverse environmental and social impacts. It also includes the estimated costs for each strategy. Environmental audits (EAs) are conducted to establish if project implementation has complied with established environmental management standards. EAs will be conducted annually and will be based on the ESMP&MP. Environmental audits (EA) reports will be submitted to the Authority for review and further advice.

6.2 Environmental and Social Management and Monitoring plan (ESM&MP) for the proposed project

6.2.1 Environmental and Social Management and Monitoring plan during preparatory phase

Environmental and Social Impacts	Proposed mitigation measures	Monitoring indicator	Responsibility	Means of Verification	Timeline	Estimated Cost Ksh.
	Preparatory /planning phase					
Land acquisition	• No objection / consent to use the site from the community county government and national government	No of community meetings	Project proponent	Land consent /no objection forms	1 month	10,000
Conflicts during site survey	• Community members to guide the surveying team • All agreements should be made in writing	No of community meetings No of grievances reported	Project proponent	GRM register	1month	50,000

6.2.2 Environmental and Social Management and Monitoring plan during construction phase

Environmental and Social Impacts	Proposed mitigation measures	Monitoring indicator	Responsibility	Means of Verification	Timelines	Estimated Cost Ksh.
Vegetation loss	• Minimize clearance of existing natural vegetation at the at the site • Re-establishing vegetation Plant vegetation with water conservation/purification traits around the borehole.	-Extinction of local vegetation -No. of trees planted	Contractor Supervising Engineer	Area und revegetation	6 month	10,000
Soils and geology	• Temporary casings may also be installed during drilling • Drilling be done in the presence and supervision of a hydro-geologist	Available ground water	Contractor Supervising Engineer	Hydrological survey report	Continuous	100,000

	• Avoid heavy compaction activities around the proposed site • Carry out a hydrogeological survey to determine the suitability of the area for the drilling of a borehole • Ensure the borehole is drilled to a minimum finished diameter of 8". The borehole should then be lined with appropriate 6" casings					
Air quality	• Reduce speed for vehicles visiting the site • Provide dust masks to people at the site • Continuously water the site during the drilling process • Use well maintained machinery • Use well serviced vehicles	Public complains Presence of dust masks	Contractor Supervising Engineer	Number of PPEs	Continuous	30,000
Noise and vibration	• Selecting equipment with lower sound power levels • Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas • Developing mechanism to record and respond to complaints • All workers exposed to noise should have appropriate PPE e.g ear muffs	-Public complains Presence of PPE (particularly ear muffs)	Contractor Supervising Engineer	Check noise levels	6 months	50,000
Solid waste generation	• Wastes such as papers or polythene containers, cement, bentonite and gravel bags, should be disposed in a sanitary dumpsite after completion of drilling. • Excavated drill cuttings will be used to backfill the borehole annular space and the drain channel. • Drilling foam is biodegradable and is not harmful to plants or animal species; however, a draining channel will be constructed to drain the drilling fluid and waters away from the operation site.	-solid waste collection points - number of signage	Contractor	Presence of dust bins	Continuous	200,000

	• Avoid water wastage and all the drilling foam remaining in the borehole will be pumped out during development of the borehole and test pumping. • Keep all fuels in secluded sections with clearly marked "Danger" or" Hatari" tags in place. They should be stored, properly handled and their wastes disposed safely during construction. • Repair and maintenance of vehicles and plants must be carried out at petrol station or garage to avoid fuels and lubricants spills at the project site.					
Occupational health and safety	• Use of proper and appropriate PPE such as dust masks • Develop By-laws that are acceptable to all. • Crew supervisor to ensure that safety standards are maintained and safe working practices like COVID - 19 MOH guidelines of use of face masks, social distancing, sanitizing ,washing hand are adhered to by all members of the crew and community. • Restrict livestock and human movement • Formulate and implement emergency preparedness and response plan • Construct the facilities as per the recommended plans that include fencing, toilets and water pumping site and paths among others • A First Aider must be appointed, trained and equipped with adequate equipment for handling first aid incidents	Number of accidents/incidences recorded -Number of warning signs installed and their intervals	Contractor Supervising Engineer	Incidents/accidents register	Continuous	120,000
Impacts on water resources	• Appropriate construction methodology will be applied to ensure that groundwater mixing does not occur • Construction equipment will be suitably maintained and spent fluids handled and disposed of in an	-Water quality records -Availability of water	Contractor Supervising Engineer	Water samples collected	1 year	80,000

	appropriate manner, • International best practice borehole construction methodologies will be applied • A qualified hydro geologist should supervise the drilling, construction and test pumping of the proposed borehole. • The supervising engineer in collaboration with the contractor should provide an appropriate casing and screening design in order to optimize exploitation of the aquifers. • Test pumping should be conducted and abstraction levels set and implemented as required by law. • Unwanted liquids and/or solids should not be introduced in the borehole during drilling • Appropriate screening filters should be installed in the pumping system during construction of the borehole	disinfection agents				
COVID -19 spread among community members	• Put in place measures to prevent and manage the spread of the COVID-19 • Develop SOPs for managing the spread of COVID-19 • Provide and enforce and use of appropriate PPE by project personnel • Put in place means to support rapid testing of suspected workers for COVID-19	-Number of Reported cases -Number of face masks provided Number of watering points	Contractor Supervising Engineer	Presence of a register	Continuous	10,000
Sexual exploitation and abuse of community members by project workers	• Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard grievance redress mechanism (GRM)	Number of sensitization meetings	Contractor Supervising Engineer	Reports on sensitization meetings	Continuous	50,000
Gender-based	• The contractor will implement provisions that ensure	Number of	Contractor	Register for GBV	Continuo	100,000

violence at the community level	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 • Specific plan for mitigating these known risks, e.g. sensitization around gender equitable approaches to compensation and employment • 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	awareness creation meetings and list of participants. -Reported cases of GBV	Supervising Engineer		us	
Spread of communicable diseases and HIV/AIDS impacts	• Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS and sexual health and rights through staff training, awareness campaigns, multimedia and workshops or during community Barazas. • Use existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members	Number of awareness creation meetings and list of participants.	Contractor Supervising Engineer	Register of cases reported	Continuo us	10,000
Labour influx into the project area	• Effective community engagement and strong grievance mechanisms on matters related to labour. • Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx, including sexual exploitation and abuse • Proper records of labour force on site while avoiding child and forced labour	-Number of workers -Sensitization meetings on labour rules	Contractor Supervising Engineer	Workers register	6 months	5,000

	• Fair treatment, non-discrimination and equal opportunity of workers. • Comply to provisions of Labour Relations Act 2012 and Work Place Injuries and Benefits Act (WIBA 2007)					
Child Abuse	• The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project. • All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behavior. • Children under the age of 18 years will not be hired on site as provided by Child Rights Act (Amendment Bill) 2014. • Refrain from hiring children for domestic or other labour, 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 labour laws in relation to child labour specifically provisions of Kenya's Employment Act, 2007 (Cap. 226) Part VII on protection of children against exploitation.	Number of cases reported	Contractor Supervising Engineer Gender Officer	Reports	Continuous	5,000

6.2.4 Environmental and Social Management and Monitoring plan during Operation and Maintenance Phase

Environmental and Social Impacts	Proposed mitigation measures	Monitoring indicator	Responsibility	Means of Verification	Timelines	Estimated Cost Ksh.

Fauna Disturbance	• Educate workforce on environmental concerns • Keep the workforce within defined boundary and to the agreed access routes for vehicles. • Implement a tree planting program within the borehole to offset loss of trees due to the construction phase • Ensure protection of important resources by establishing protective buffers to exclude unintentional disturbance.	Loss of vegetation	Proponent	Number of trainings on soil and water conservation. -number of trees planted	1 year	50,000
Noise and vibration	• Machineries should be maintained regularly to reduce noise resulting from friction during operations. • Using modern machinery equipment with noise suppressing technologies in order to reduce the noise-rating as much as possible • A grievance procedure will be established whereby noise complaints by neighbors are recorded and responded to	Noise levels	Proponent	-Grievances redress mechanism log register - number of complains	6 months	5,000
Occupational health and safety	▪ Placing signs around where there are risks. Signs should be in English and Kiswahili for easy understanding ▪ The borehole should be cordoned off to protect the general public from dangers associated with operations work ▪ Ensuring there is security in and around the site to control the movement of unauthorized personnel ▪ Raising awareness, educating workers on risks from equipment, and ensuring they receive adequate training on the use of the equipment	Presence of a fence -number of incidents/accidents reported	Proponent	Register for incidences	Continuous	100,000

Impacts on water resources	• Water quality monitoring will be carried out to ensure that there is no pollution of the groundwater • Train on water use efficiency with conservation aspects being integrated	Number of sensitization meetings on water quality	Proponent	Reports on the sensitization meetings	Continuous	50,000
Grievances /conflicts	• Establish a GRM for the proposed project; • Seek to establish amicable relationships with stakeholders and manage the impact of the project activities on affected communities; • Put in place a pre-emptive community liaison structure aimed at identifying potential issues arising from project-related impacts and addressing them before they become grievances; • Establish a grievance redress mechanism targeting communities and other project stakeholders and which will allow stakeholders to easily put forth their concerns relating to the project, implementation and have them addressed in a prompt and respectful manner; • Ensure the grievance redress mechanism is available to the affected community members and stakeholders at no cost; • Address all raised grievances, real or imagined and take reasonable steps to maintain confidentiality; and • Educate all project stakeholders on the availability and use of the grievance redress mechanism, before, during and after construction of the proposed project	Number of Grievances/conflicts	Proponent	GRM Register	Continuous	5,000
Sexual	• The SEA action plan will include how the project	Number of	Proponent	Register and	Continuous	10,000

Exploitation and abuse against community members	will ensure necessary steps are in place for: -Prevention of SEA: including Code of Conducts and ongoing sensitization of staff on responsibilities related to the Code of Conducts and consequences of non-compliance; project-level Information Education Communication (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 grievance redress mechanism (GRM); mainstreaming of prevention of sexual exploitation and abuse (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	grievances		reports		

	coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers					

6.2.5 Environmental and Social Management and Monitoring plan during Decommissioning Phase

Environmental and Social Impacts	Proposed mitigation measures	Monitoring indicator	Responsibility	Means of Verification	Timelines	Estimated Cost Ksh.
Waste generation	• Prepare a site waste management plan prior to commencement of demolition activities. • Some of the solid waste produced can be recycled for use in future projects or sold off as scrap. • Identifying all sources of wastes, and ensuring wastes are handled by licensed NEMA waste handler	Amount of waste generated	Contractor	-presence of Waste dumping site	1 month	50,000
Noise and vibration	• Selecting equipment with lower sound power levels • Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas • Developing mechanism to record and respond to complaints • All workers exposed to noise should have appropriate PPEs	Low noise levels	Contractor	Register for complains	6 months	10,000
Occupational health and safety	• Provision and Use of Personal Protective Equipment (PPE) e.g., dust masks, overalls, gloves, • Raising awareness among the workers on the likely risk and hazards and ensure they have adequate training on the use of machines and equipment	Number of accidents/incidences recorded -Number of warning signs installed and their intervals	Contractor Proponent	Register for incidences	Continuous	50,000

Loss of employment	• Ensure all the local employees are well informed on the project decommissioning and its likely impacts before the project final closure.	-Number of sensitization meetings	Contractor	Register for employees	1 month	5,000

CHAPTER SEVEN
CONCLUSION AND RECOMMENDATION

7.1 Conclusion

Based on the assessment several measures have been proposed to reduce negative impacts including amelioration of social negative impacts, noise abatement, waste management, reduction of visual intrusion, reduction of soil erosion, prevention of accidents and health hazards. Monitoring has been identified as an important process in the protection of environment of the project area since it will reveal changes and trends brought about mainly by construction activities.

The proponent should adopt a participatory and collaborative approach during all the phases of the project. This will ensure active participation of all key stakeholders towards success and sustainability of the project. The proponent needs to support the implementation of environmental and social management plan in order to protect the environment of the project area from the negative impacts of project implementation

7.2 Recommendation

It is in the opinion of the experts that the few anticipated negative impacts can readily be mitigated and that the proposed project does not pose any threat to the environment. The experts therefore recommend that the project proceeds upon approval by the National Environmental Management Authority (NEMA). Upon approval the proponent should conduct annual environmental audits.

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ANNEXES

Annex 1: Duly Filled ESS Screening Checklist

Sukuma Bassa.

KCSAP ISIOLO 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..... Isiolo	
Name of CSU/Monitoring Officer/Researcher ..... Bachu Duba	
Sub-project location..... Bassa ..... Name of CBO/Institution..... Bassa Community Postal Address:..... Contact Person.....Cell phone:..... Sub-project Name..... Bassa Borehole	
Estimated cost (KShs.).....	
Approximate size of land area available for the sub-project..... Objectives of the subproject..... water for livestock and Domestic use.....	
Activities/enterprises undertaken.....	
How was the sub-project chosen?..... Expected subproject duration:.....	

Section B: Environmental Issues

Will the sub-project:	Yes	No
Create a risk of increased soil erosion?	☐	☑
Create a risk of increased deforestation?	☐	☑
Create a risk of increasing any other soil degradation	☐	☑
Affect soil salinity and alkalinity?	☐	☑
Divert the water resource from its natural course/location?	☐	☐

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

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

Section C: Socio-economic Issues

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

Section D: Natural Habitats

Will the sub-project:	Yes	No
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species? ***NB: If the answer is yes, the sub-project should not proceed.***	☐	☑
Adversely affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, protected areas including national parks, reserves or local sanctuaries, etc.)? ***NB: If the answer is yes, the sub-project should not proceed.***	☐	☑
Affect the indigenous biodiversity (flora and fauna)? ***NB: If the answer is yes, the sub-project should not proceed.***	☐	☑
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly? ***NB: If the answer is yes, the sub-project should not proceed.***	☐	☑
Affect the aesthetic quality of the landscape?	☐	☑
Reduce people's access to the pasture, water, public services or other resources that they depend on?	☐	☑
Increase human-wildlife conflicts?	☐	☑
Use irrigation system in its implementation?	☐	☑

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?	☐	☑
Cause contamination of watercourses by chemicals and pesticides?	☐	☑
Cause contamination of soil by agrochemicals and pesticides?	☐	☑
Experience effluent and/or emissions discharge?	☐	☑
Export produce? Involve annual inspections of the producers and unannounced inspections?	☐	☐
Require scheduled chemical applications?	☐	☑
Require chemical application even to areas distant away from the focus?	☐	☐
Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)?	☐	☐

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

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

Are there:	Yes	No
People who meet requirements for OP 4.10 living within the boundaries of, or near the project?	☐	☑
Members of these VMGs in the area who could benefit from the project?	☐	☑
VMGs livelihoods to be affected by the subproject?	☐	☑

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

Section G: Land Acquisition and Access to Resources

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

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

Section H: Proposed action

(i) Summarize the above:	(ii) Guidance
☐ All the above answers are 'No'	• If all the above answers are 'No', there is no need for further action;

☐ There is at least one 'Yes'	• If there is at least one 'Yes', please describe your recommended course of action (see below).

(iii) Recommended Course of Action

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

☐ CPCUs and CDE will provide detailed guidance on mitigation measures as outlined in the ESMF; and

☐ Specific advice is required from CDE[1], 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: JIMALE MOHAMED DABASO

Position / Community: MEMBER

Date 9/6/2021

[1] County Director of Environment and the County Technical Team

Recommendation by County director of Environment (CDE)

.....

.....

.....

Name of CDE .....

Signature: ..... **Date** 13/6/2021

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY ISIOLO COUNTY COUNTY DIRECTOR OF ENVIRONMENT

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 documentation

Kenya Climate Smart Agriculture Project

Kenya Climate Smart Agriculture Project
(KCSAP)
Office of the County Coordinating unit

COMMUNITY RESOLUTION FORM FOR SITE IDENTIFICATION AND NO OBJECTION FOR LAND USE

Name of Project: Bassa Borehole

We, the beneficiaries of Bassa borehole have discussed and agreed

that Bassa will be the site for the drilling and equipping of a borehole

for livestock water, in Merti Sub County, Cherab ward, Bassa location, Bassa Sub-location.

We have allocated ½ acre piece of land for the development of the borehole and associated infrastructure.

We, on behalf of the beneficiaries (beneficiaries' representatives) confirm the above information to be true.

Names of three (3) Beneficiaries' representatives

S/NO.	NAME	ID/NO.	SIGNATURE
	ABDI ROGICHA	7767936	
	ABDIKADIR JONIS	30761031	
	ABDULAZIZ LAKICHA	0011368	

Witnessed By: ..... NURO SIMG .....

Chief Officer (Stamped)

NAME: NURO SIMG
CHIEF UADACHABASA
LOCATION

NAME	P/NO.	DESIGNATION	SIGNATURE
NURO	SIMG		

CDLPO'S OFFICE (Stamped)

NAME	P/NO.	DESIGNATION	SIGNATURE

County Government (stamped)

(County Executive Committee Member for Agriculture, Livestock and Fisheries, Isiolo County)

NAME	ID/NO.	SIGNATURE

Annex 3: Minutes of Public Participation and Stakeholders Consultation

PUBLIC PARTICIPATION FOR BOREHOLE BASSA 10TH JUNE 2021

MINUTE 1 PRELIMINARIES

The meeting started at 8.00 a.m. with a word of prayer from Idris Chief Sime Thereafter the Chairperson thanked member for availing themselves on time to the meeting. He then called the meeting to order.

MINUTE: 2

The County Project Coordinator who was present took time to explain Kenya climate smart agriculture project and its objectives.

The officers emphasized on the importance of public participation. The proposed project will contribute towards achievement of KCSAP development objective of ***"increased agricultural productivity and building the resilience to climate change risks in the targeted smallholder farming and pastoral communities in Kenya, and in the event of an Eligible Crisis or Emergency, to provide immediate and effective response."***

Officers from Kenya Climate smart Agricultural Project explained the importance of carrying out an environmental impact assessment. This exercise is very important because it informs the contractor on the anticipated risks and mitigation measures take to reduce the impact of the risk.

Minute 3. Employment at the site

The community members were given time to air out their views as far as environmental impact is concerned. One member said that the idea was very good so long as the contractor puts consideration locals when employing the workforce during the implementation of the project. They expressed their fear of not having skilled workers but many men women and men who could carry out unskilled labour.

During the meeting, the issue of pasture grazing conflicts came out strongly. The neighbouring County of Wajir normally bring their livestock for grazing and watering and this when conflicts erupt as both parties never agree on however grazing procedures.

The other issue raised was on the wildlife menace which could lead to the destruction of constructed structures.

Minute 4 Conclusion

The participants agreed to that plans of drilling Bassa borehole should continue. They insisted that the process should start immediately now that drought has started seriously.

The community members asked about the running of the borehole. i.e who will run the bore.

The concerned officers told them that the management committee would collaborate with the community to make sure that activities at the borehole are well done and maintainace is done.

Minute 5: Adjournment

The meeting ended with a word of prayer and participants dispersed.

PUBLIC PARTICIPATION FOR BASSA BOREHOLE 11TH JUNE 2021

MINUTE 1 PRELIMINARIES

The meeting started at 8.00 a.m. with a word of prayer from Mohamed Galgal Thereafter the Chairperson thanked member for availing themselves on time to the meeting. He then called the meeting to order.

MINUTE2

The County Project Coordinator who was present took time to explain Kenya climate smart agriculture project and its objectives.

The officers emphasized on the importance of public participation. The proposed project will contribute towards achievement of KCSAP development objective of ***"increased agricultural productivity and building the resilience to climate change risks in the targeted smallholder farming and pastoral communities in Kenya, and in the event of an Eligible Crisis or Emergency, to provide immediate and effective response."***

Officers from Kenya Climate smart Agricultural Project explained the importance of carrying out an environmental impact assessment. This exercise is very important because it informs the contractor on the anticipated risks and mitigation measures take to reduce the impact of the risk.

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During the meeting, the issue of pasture grazing conflicts came out strongly. The neighbouring County of Wajir normally bring their livestock for grazing and watering and this when conflicts erupt as both parties never agree on however grazing procedures.

The other issue raised was on the wildlife menace which could lead to the destruction of constructed structures.

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The community members asked about the running of the borehole. i.e who will run the bore.

The concerned officers told them that the management committee would collaborate with the community to make sure that activities at the borehole are well done and maintainace is done.

Minute 5: Adjournment

The meeting ended with a word of prayer and participants dispersed.

Signed by

Chairperson……..

Secretary……..

Member……

Member……

Annex 4: Copies of Attendance list during public participation and stakeholder consultation

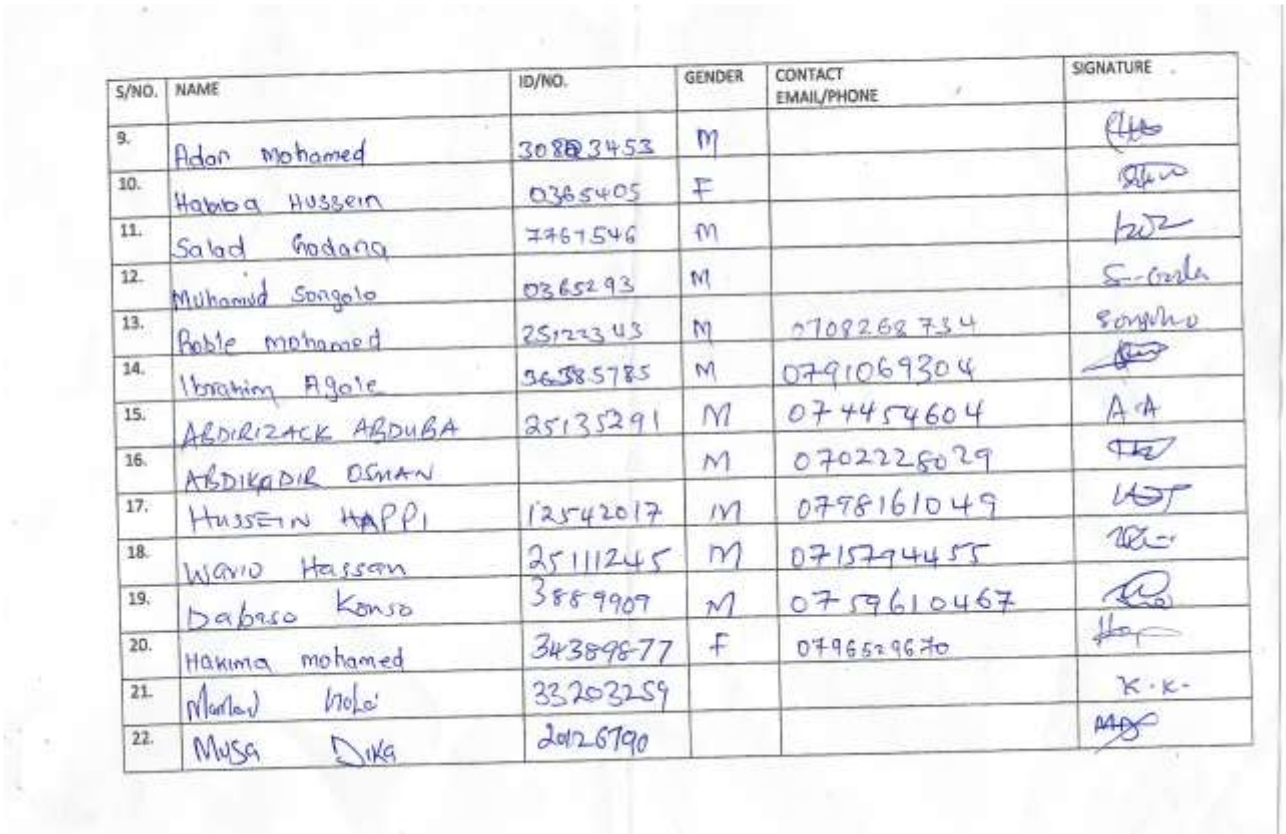
Kenya Climate Smart Agriculture Project
(KCSAP)
Office of the County Coordinating unit

LIST OF ATTENDANCE

Activity.....

Date..... 11 June 2024

S/No	NAME	ID NO	GENDER	CONTACT Telephone: Email:	SIGN
	BUKE MOHAMED	20117011	F		
1.	MOHAMED BUKE	03645492	M	0740487440	M.B
2.	Kamila TUYO	11274770	F		
3.	JIBRIL [illegible]	0083557	M		
4.	IBRAHIM ADAN	0365437	M		
5.	IDRIS IBRAHIM	0610288	M		
6.	ISSACK ADAN	29857263	M		
7.	ABDIRAHMAN GUYO	0365580			
8.	BALLA GODANA	0365334	F		



S/NO.	NAME	ID/NO.	GENDER	CONTACT EMAIL/PHONE	SIGNATURE
9.	Aidan mohamed	30883453	M		
10.	Habiba Hussein	0365405	F		
11.	Salad Godana	7467546	M		
12.	Muhamud Sangolo	0365293	M		
13.	Bable mohamed	25123343	M	0708268734	
14.	Ibrahim Agole	36385785	M	0791069304	
15.	ABDIRIZACK ABDUBA	25135291	M	0744546O4	A·A
16.	ABDIKADIR OSMAN		M	0702226029	
17.	HUSSEIN HAPPI	12542017	M	0798161049	
18.	WARIO Hassan	25111245	M	0715794455	
19.	Dabaso Konso	3889909	M	0759610467	
20.	Hakima mohamed	34389877	F	0796529670	
21.	Mamo Molu	33203259			K·K·
22.	MUSA DIKA	20126790			

S/NO.	NAME	ID/NO.	GENDER	CONTACT EMAIL/PHONE	SIGNATURE
9.	[illegible] Jirma	30823259	M		
10.	HAWO Rashido	0386784	F	0758882594	
11.	Bashir S. Omar	23133144	M		
12.	MOHAMUD GODANA	47675523	M		
13.	ABDIKADIR Abdullahi	20708824	M		
14.	HADIJA HARKANO	0364936	F		
15.	LASI Roble	0365489	M		
16.	HADIJA BULLE	11274753	F		
17.	Mouliq Ahmed	37374666 34	m	0112908504	
18.	mouliq mohamed	33202377	m	0741681013	
19.	mouliq maalim Abdullahi		m	0707507942	
20.	AYUB ADAN SALESA	33187120	M	0718283472	
21.	Ramathani ADAN SORA	35018645	m	0100308385	
22.	NASRA MOHAMED	36586711	f	0713215128	

Kenya Climate Smart Agriculture Project

Kenya Climate Smart Agriculture Project
(KCSAP)
Office of the County Coordinating unit

LIST OF ATTENDANCE

Activity Public Participation - Bassa Borbab

Date 10/6/2024

S/No	NAME	ID NO	GENDER	CONTACT Telephone: Email:	SIGN
1.	KAMILA IBRAHIM MOLU	25844887	F	0757441143	KAMILA
2.	FATUMA GUYO JARSO	21109187	F	0759414390	FATUMA
3.	TUNE IBRAHIM MOLU	7872013	F	0798936698	TUNE
4.	GUBALA JARSO GUYO	9955655	F	0798061768	GUBALA
5.	FATUMA DOKATA WARIO	0010194	F	0708327631	FD
6.	SADIA DOKATA WARIO	12511991	F	0703323783	SADIA
7.	JUMALE ADAN GHANA	38786596	M	0746348792	Jumale
8.	AHAMMED DONMA KUYU	0011519	M	0742097673	MBIK

S/NO.	NAME	ID/NO.	GENDER	CONTACT EMAIL/PHONE	SIGNATURE
9.	ABDIA GUTO SORA	0011691	F	0795699928	ABDIA
10.	TUME DENGE BUDE	12541976	F	0113909722	TUME
11.	FATUMA ODO TACHO	0011445	F	0724170255	FATUMA
12.	NURIA MOHAMED KANCHORO	21109184	F	0742926145	NURIA
13.	RAZIA MUSA BADHA	25778197	F	0759414366	RAZIA
14.	AMBIA ADAN LAKICHA	25945017	F	0768695748	AADAN
15.	HARUN ADAN LAKICHA	26689071	M	0798888556	H
16.	DANSOTE JALDESA GUTO	0009767	F	0742926491	DASOME
17.	CHACHOLE DABASO KOTOLA	0011453	F	0796904892	CHACHOLE
18.	SADIA GABASO DULACHA	20986712	F	0724170293	S
19.	KHERAH SORA ROBA	12876291	F	0797919372	KHERAH
20.	GODANO SORA ROBA	0011405	F	0742924357	GODANO
21.	HADIJA ADAN HUSSUFU	0011441	F	0745807065	HADIJA
22.	TUME ABDI SORA	29262823	F	0714009647	TUME

S/NO.	NAME	ID/NO.	GENDER	CONTACT EMAIL/PHONE	SIGNATURE
9.	ABDIA BORU ROBA	0185727	F	0705525685	ABDIA
10.	KHADIJA GURA DIDA	21404794	F	0724156507	KHADIJA
11.	BADE LUCHA BADA	0011541	F	0769443762	BADE
12.	DIRAMU GOLO ALI	29826742	F	0708961841	DIRAMU
13.	HAWO ADAN KUZA	21404827	F	0748398331	HAWO
14.	ABDILAHIN GUYO GALGALO	0366002	M	0704454447	ABDILAHIN
15.	SOMANE IWAKO BUKICHA	29932880	F	0786734288	SOMANE
16.	ZEINAB SIME QUMBI	25727401	F	0724168516	ZEINAB
17.	JAMILA TADICHA SORA	23149130	F	0742922114	Jamila
18.	HASSAN ADAN DABASO	32202850	M	0797660552	HASSAN
19.	KAZO DIDA DIDA	23109337	F	0759414349	KAZO
20.	DEQA ABDULAHI LAKICHA	32939035	F	0724160141	DEQA
21.	GALGALO GUFU GALGALO	37715230	M	0796169425	GALGALO
22.	RUFO MOHAMED DIDA	37781805	F	0701147512	RUFO

Annex 5: BQ for the Proposed Project

No.	Activity	Budget item	No.	Unit Cost (KES)	Total Cost (KES)	County/Community Contribution (KES)	KCSAP Grant (KES)	Total Amount (KES)
1	Community mobilization	Travel costs	3	120,000	360,00		360,000	360,000
2.	Stake holder consultation		3	150,000	450,000		450,000	450,000
4.	Hydrological Survey & Design and BQ development		1	300,000	300,000	300,000	0	300,000
	EIA		1	200,000	200,000	200,000	0	200,000
5.	Evaluation & Award of contract		1	150,000	150,000		150,000	150,000
6	Preliminaries & General	Mobilization & Supervision	1	1,900,000	1,900,000	0	1,900,000	1,900,000
	Borehole drilling	Construction of civil works		2,683,000	2,683,000	0	2,683,000	2,683,000
	Borehole equipping and solar pump installation	Construction of civil works	1	2,105,800	2,105,800		2,105,800	2,105,800
	Construction of 50m3 elevated steel tank	Construction of civil works	1	3,253,000	3,253,000	0	3,253,000	3,253,000
9	Construction of 2 no. cattle trough	Construction of civil works	2	325,800	651,600		651,600	651,600
	Construction of water kiosk (2mx2mx2m	Construction of civil works	1	319,467	319,467	0	319,467	319,467

	Construction of VIP latrine & bathroom	Construction of civil works	2	410,332	820,665	0	820,665	820,665
	Add 10% Contingency			1,173,353.20 1,173,353.20	1,173,353.20	0	1,173,353.20	1,173,353.20
	Add 16% V.A.T			2,065,101.63			2,065,101.63	2,065,101.63
						500,000	15,931,986.83	16,431,986.83
Total project cost:								
Community contribution:								500,000
Total KCSAP grant applied for:								**15,931,986.8**

Annex 6: Sample copies of filled questionnaires

ISIOLO COUNTY

ENVIRONMENTAL IMPACT ASSESSSMENT (ESIA)

MAIN HH QUESTIONNAIRE

This is an exercise commissioned by the Kenya Climate Smart Agriculture Project (KCSAP) towards the drilling of the Borehole, Stabilization, casing, pumping, reticulation and eventual distribution of this water by use domestically and by livestock. We are hereby calling upon you to interact with us by responding to our questions many of which are in this questionnaire but others will be follow-up questions to ensure the team captures everything that will make this report a success.

SECTION A: BIODATA

1. Name of Respondent Fatuma Galgalo
2. Sex (M/F) F Age 50 (years)
3. Marital Status Married Tick appropriately(single, married, divorced, widowed, separated)
4. Number of family members living with you (including yourself) 8
5. Last completed level of education HK (standard 8; Form 2; Form 4; college; form 6; university 4th year , etc.)
6. Contact Telephone Number 0705246264
7. County Isiolo Sub-county Merti Ward Cherab
8. Location Rasa Project Site Name Rasa Name of Borehole Rasa Community Borehole
9. What position do you have within the borehole Member (member, chairman, secretary, treasurer, committee member)-tick appropriately
10. Enumerators Name Caroline Mungo Enumerator's Telephone Number 0724792462

SECTION B: PROJECT INITIATION, USE AND MANAGEMENT

11. Do you belong to any community group (Yes/No) ✓
12. If yes Name it ✓ how many are you? Males 0, females 0 youth(girls) 0 youth(boys) 0
13. What main activity as a group are you involved in?
    ✓ 0
14. Do you have a committee? (Yes/No) ✓
15. How many members in that committee? ✓ Males 0 Females 0 (youth boys Youth girls)
16. Are you aware of this proposed borehole? Yes (Yes/No)
17. If it is yes, how do you think this borehole will assist you as a family member? Water for Domestic use / Cattle will drink the water
    (explain)

18. How many livestock do you have?
a) Camels.....6.....
b) Cattle.....44.....
c) Goats .....20.....
d) Sheep.....10.....
e) Donkeys.....1.....
f) Chicken.....3.....
g) Dogs.....2.....
h) Bee hives.....1.....
i) Any other.....1.....
19. Currently where do you water your livestock? (Name).....Ewaso Nyiro.....
20. How many kilometers from your home/manyatta to the watering point? .....15 KM
21. Is the current water point enough for the year?.....Yes.....(January to December)
22. If it is not sufficient where else do you take your livestock?
(Name).....Ewaso Nyiro.....(Distance).....15 KM.....km
23. For your domestic use where do you draw your water from? (Name).....Ewaso Nyiro
(Distance).....15 KM.....from the household.
24. Is the water you draw for domestic use clean? (Yes/No).....Yes.....
25. If No explain.....good for cows.....
26. What do you think of the water quality from this borehole water?
(Explain).....Good - next borehole is good.....
27. As a community how did you select this site of the borehole?
(Explain).....Through Barazas.....
.....
28. As a community would you have gone for another borehole site? (Yes/No)...No...
29. If yes to the above question name the site.....//.....and why
.....
30. For this proposed site how many people will be served by this borehole
(population/HHs).....3665.....or estimated manyattas to be served.....
31. And the estimated livestock to be served.....100,000
32. How will schools be served by this borehole? .....Pump water to sites
Number of schools.....4..... Primary.....3..... Secondary.....1.....and Churches.....3.....
33. Kindly name them:
Primary Schools.....Rasa, Dakaye.....
Secondary schools.....Rasa Mixed day.....
Churches.....Mosque 3.....
34. In your own opinion if this borehole is completed will the water supply be enough? (Yes/No)
.....Yes.....
35. As a community when the contractor is on the ground what is your role?
(explain).....Supervision of the Contractor.....
36. Does this proposed borehole have a committee? (Yes/No).....Yes.....

Rasa

37. If yes how many committee members.....14.....total, males adults.....10.....female adults.....3.....total youth boys.....total youth girls.....1.....

38. Kindly give us the names of the committee members.....
1. Abdi Roqicha 4) Abdikadir Junis.....
2. Jaqo Ogolo 5. Abdullahi Lakicho.....
3. Sadi Chedi.....

39. Before today how many more meetings have you had to discuss this borehole?.....2.....

40. Can you give us copies of the minutes of the previous meetings?.....no.....

41. As a community how do you expect to manage this project when it is completed?.....Harmony.....through.....committee.....

42. As a community what method will you use to pump the water from the borehole? (tick)

a) Engine ✓
b) Solar ✓
c) Wind
d) National brid power
e) I don't know
f) Not sure

43. If the borehole committee is present is it affiliated to WRUA ?...no.....(Yes/No)

44. If yes which WRUA are you affiliated to.....no.....

45. Which catchment is this WRUA associated with?.....no.....

46. If the answer is No?
Why.....explain.....This is an independent entity.....

47. Were you involved in writing the proposal of this borehole? Yes. (Yes/No).

48. Kindly mention a few items you would like to be included in the borehole?.....Pump.....

49. If the borehole is done/completed, list some of the expenses which the community will be expected to meet?.....Fuel & Maintenance.....

50. What will be some of the expenses to be met by the county government /and the project?.....Purchasing of the Borehole.....

51. Is this borehole a cross-border (many communities/wards) project or cross community project? (Yes/No).....no.....

52. Are you anticipating resource conflict? (Yes/No).....no.....

53. Using your borehole committee how do you intent to solve the resource conflict? (Explain).....The committee should create order and harmony by involving the elders and sanctioning those who cause chaos at the borehole.....

54. What other challenges do you anticipate as a community when this borehole is completed?.....none.....

SECTION C: INFRASTRUCTURAL DEVELOPMENT

Base

55. Have you proposed cattle water troughs? (Yes/No)..Yes..How many?.....
56. Have you proposed VIP latrines on the site (Yes/No)..Yes..How many?..2..
57. Have you planned for bathrooms? (Yes/No)..Yes..how many?..2.....
58. Have you planned for shades/bench? (Yes/No)..Yes..how many?..4..
59. Have you chosen the VIP Latrine designs? (Yes/No)
60. Have you planned for water kiosks? (Yes/No)..No..how many..1..where?..Town.....(list all)
61. Have you planned for the parameter fence? (Yes/No)..Yes..type of the fence.....(barbed wire, chain link, thorn bushes, walling)

SECTION C: LABOR

62. When the contractor comes on sight what employment opportunities will you be looking for as a community?..Unskilled labour.....
63. What will you wish the contractor to do for you in terms of employment?..Employ Men and boy youth.....
.....
64. Is gender based violence an issue when the contractor is on site? (Yes/No)..Yes...If yes why?..Many men would involve Women.....
.....
65. If no why?.....

SECTION D: SECURITY

66. Is security an issue? (Yes/No)..No
67. If yes explain.....
68. As a community how will you ensure the security of the borehole installations?..Employ watchmen.....

SECTION E: SUSTAINABILITY

69. As a community member are you prepared for this project? (Yes/No)..Yes.....
70. Behold the support of the project how will you manage this borehole?..Through Management Committee.....
.....

SECTION F: CHALLENGES

71. As a community do you foresee any challenges posed by this borehole?(Yes/No)
72. List and explain these challenges..No.....
.....
73. Does this project have positive impact .....(yes/No)

74. list the positive impacts and explain Reduced walking distance to the River
Availability of clean water.

75. Do you anticipate negative impacts of this project? (Yes/No) No

76. For each of the negative impact what will be your proposed mitigation measure? None

Annex 7: Designs and Drawings

Annex 8: Copies of Practicing License for Expert

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/14707

Application Reference No: NEMA/EIA/EL/19234

M/S **BONFACE MANYARA KOOME**
(individual or firm) of address

P.O. Box 06-60300 ISIOLO

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **2534**

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

Issued Date: **4/9/2021** Expiry Date. **12/31/2021**

Signature…..

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified