



ENVIRONMENTAL SOCIAL MANAGEMENT PLAN (ESMP)
FOR
PROPOSED DYKE CONSTRUCTION IN BUKANI VILLAGE, NAMBOBOTO-
NAMBUKU WARD IN SAMIA SUB – COUNTY, BUSIA COUNTY.



TABLE OF CONTENTS

CERTIFICATION	iv
LIST OF ACRONYMS	v
EXECUTIVE SUMMARY	vi
CHAPTER ONE: PROJECT BACKGROUND.....	1
1.0 Introduction.....	1
1.2 Purpose and Nature of the Project	1
CHAPTER TWO: PROJECT DESCRIPTION	2
2.1 Introduction.....	2
2.2 Project Location	2
2.4 Land Ownership.....	2
2.3 Project Activities.....	2
2.5 Project Budget and Timelines	3
2.6 Physical area and socio-economic environment to be affected	3
CHAPTER THREE: IMPACTS IDENTIFICATION, ANALYSIS AND MITIGATION MEASURES	4
3.1 Introduction.....	4
3.2 Construction phase.....	4
3.2.1 Anticipated Positive Impacts during construction phase	4
ii) Employment and wealth creation	4
3.2.2 Anticipated negative environmental impact during construction phase	4
3.2.3 Anticipated Negative social Impacts	5
3.3 Operational Phase	9
3.3.1 Positive impacts during operational phase.....	9
ii) Social Inclusion	9
3.3.2 Anticipated Negative Environmental Impacts during Operational phase.....	9
3.2.3 Anticipated Negative social Impacts	10
CHAPTER FOUR: ENVIRONMENTAL SOCIAL MANAGEMENT AND MONITORING PLAN	12
4.0 Introduction.....	12
4.1 Environmental Social Management & Monitoring Plan.....	12

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	23
5.1 Conclusion	23
5.2 Recommendations.....	23
REFERENCE.....	24
ANNEXES	25
Annex 1: EIA/EA Expert practicing license	26
Annex 2: Land ownership document (Land agreement).....	27
Annex 3: Dyke design.....	29
Annex 4: Screening Checklist.....	33
Figure 1: Google Earth Map showing location of the proposed project site	2

CERTIFICATION

We do hereby submit an Environmental and Social Management Plan for the Proposed Dyke construction in Bukani Village, Namboboto-Nambuku Ward in Samia Sub – County, Busia County. To our knowledge all information contained in this document is accurate and a truthful representation of all findings as relating to the proposed project as per project description by the proponent.

ESIA/EA EXPERT

Name of Expert	Details /Specialization	Signature
Denis Chirande	NEMA LEAD REG. NO. 6511	

PROPONENT

Name	Contact Person and Mobile Number	Signature
Bukani Community Project Mangement Committee		

CLIENT

Name	Contact Person and Mobile Number	Signature
Kenya climate smart agriculture (KCSAP) county project coordination unit Busia county	Mrs. Everlyne Adhiambo	

LIST OF ACRONYMS

CDE	County Director of Environment
CIDP	County Integrated Development Plan
COVID -19	Corona Virus Disease – 2019
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental Social Management and Monitoring Plan
GRM	Grievance Redress Mechanism
HIV	Hunan Imuno Deficiency Virus
NEMA	National Environment Management Authority
OSH	Occupational Safety and Health
PSEA	Prevention against Sexual Exploitation and Abuse
PPE	Personal Protective Equipment
TOR	Terms of Reference

EXECUTIVE SUMMARY

This document presents the outcome of the critical analysis of project impacts of the proposed construction of a dyke as proposed by Bukani Project Management Committee in Bukani Village in Busia County that resulted in the development of an Environmental Social Management and Monitoring Plan. Environmental and Social Impact Assessment is a tool for Environmental management applied on the basic principle that when all positive and negative impacts of project activities are identified, then it is easier to mitigate the negative impacts of the activities before they actually happen and at the same time enhance the positive gains to be realized.

This being a category B project as funded by World Bank, this project triggered the OP 4 (Environmental Assessment) that necessitated the need for proper Environmental and Social screening before implementation.

After the administration of the Environmental and Social Screening Checklist, the CDE- NEMA recommended the development of an ESSMP for this project.

The General objective of this project is to improve the farmers' resilience to climate change risks by ensuring there is availability of irrigation water throughout the year.

This document therefore outlines a brief introduction of the project in chapter one, an analysis and identification of the impacts of the project and their proposed mitigation measures in chapter two. Chapter three presents the ESMMP for the project in a tabular form then finally chapter four of conclusion and recommendations.

The total project cost is estimated at **Kshs. 19, 275,000/=** and the cost of implementing the ESMP is **Kshs. 1,000,000/=**

CHAPTER ONE: PROJECT BACKGROUND

1.0 Introduction

Over the years, Busia as a county has faced serious economic losses due to flooding especially on the lower region of the County. The lower region covers Bunyala and Samia Sub Counties. These floods cause havoc and over the recent past, Budalang'i has been in the headlines having faced serious loss of livelihoods and settlement. This project therefore aims to construct a dyke in the Bukani flood plain of Samia that is also prone to flooding from R. Sio. This will help cushion the community around from the unpredictable flood regimes making them adapt to this effect of climate change and also to prevent water entry into the Bukani Aquapark project.

The ESMP findings presented in this report provides a critical examination of issues considered important in fulfilling the requirements of a clean, secure, sustainable and healthy environment.

1.2 Purpose and Nature of the Project

The main purpose for initiating this project was to ensure that there is control of the flow of water into the Bukani Aqua Park that will lead to pollution, siltation or even fish mortality.

The justification for conducting ESMP is that it is a requirement under the WB OP/BP 4.01: Environmental Assessment for such projects of low risk magnitude to conduct an ESMP in order to mitigate unforeseen impacts. The ESMP was recommended by the County Director of Environment (CDE) after the screening exercise was conducted on 15/02/2022.

CHAPTER TWO: PROJECT DESCRIPTION

2.1 Introduction

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

2.2 Project Location

The proposed dyke will be constructed in Bukani Village, Namboboto-Nambuku Ward in Samia Sub County, Busia County. It is located on GPS coordinates at the proposed project site are; N0.321002, E34.073223.



Figure 1: Google Earth Map showing location of the proposed project site

2.4 Land Ownership

The project site is on a public land under the custody of the Government. See annexed

2.3 Project Activities

The proposed project aims to construct a dyke in Bukani village. The project involves excavation and embanking the soil followed by stone pitching on either side of the embankment. There will

also be a valve to allow flow of the surface run off but at the same time prevents the backflow of water.

2.5 Project Budget and Timelines

The estimated cost for constructing the rain water harvesting farm in Busia County is estimated to be **Kshs. 19,275,000** and the total cost of implementing the ESMP is **Kshs. 1,000,000/=**

The construction phase of the project is to be completed within 3 months which will be subject to satisfactorily mainstreaming of World Bank ESS guidelines and operating procedures.

2.6 Physical area and socio-economic environment to be affected

2.6.1 Ecologically sensitive

The project is not likely to affect any endangered species of flora and fauna. Land use is cultivated agricultural land all the way across the watershed except few shrubs. People have majored in growing of sugar cane, beans, maize and sorghum. The cultivation methods used is the local agricultural practices which is straight row leaving area therefore susceptible to erosion

2.6.2 Wildlife

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

CHAPTER THREE: IMPACTS IDENTIFICATION, ANALYSIS AND MITIGATION MEASURES

3.1 Introduction

The environmental baseline information collected and the project characteristics discussed form the basis for impact identification and analysis. The impacts that are expected to arise from the project could either be termed as positive or negative, direct or indirect, short-term or long-term, temporary or permanent depending on their nature, area of coverage and their duration in the environment and have been identified in all the phases of the proposed project cycle namely; construction, operational and decommissioning. This section discusses the impacts relating to the proposed project as well as precautionary and mitigation measures that can be adopted.

3.2 Construction phase

3.2.1 Anticipated Positive Impacts during construction phase

i) Access Road

With the proposed construction, the embankment will be tarried and murramed creating an access road into the flood plain of Bukani.

ii) Employment and wealth creation

During construction of the dykes, there will be employment opportunities to both skilled and unskilled labourers at the project site. This will lead to an increased household income for those employed.

3.2.2 Anticipated negative environmental impact during construction phase

Despite the various socio economic and environmental benefits outlined, the project will also have some negative environmental impacts. Potential adverse environmental impacts on the natural and human environment are likely to arise from inputs as well as project processes at the construction phase. The following are the negative impacts and suggested mitigation measures.

i) Impact on Natural Vegetation and Biodiversity

Flora: Minimal vegetation will be cleared during construction. However, this impact is not significant because the spatial extent is minimal. Further, some embankment sides can be vegetated with grass strips.

Proposed Mitigation Measures:

- Ensure proper demarcation of the project area and control of construction vehicles.
- Planting of grass on either side of the embankment

ii) Air pollution (Dust emissions)**Proposed Mitigation measures:**

- The construction area should be fenced off to reduce dust to the public
- Sprinkle loose surface earth areas with water to keep dust levels down.
Masks should be provided to all personnel in areas prone to dust emissions during construction.

iii) Occupation safety and health hazards**Proposed Mitigation Measures:**

- The project shall ensure that contractors provide OHS training that may include hazard awareness, safe work practices and emergency preparedness to their workers to ensure they are appraised to project sites rules of work, personal protection and preventing injury to fellow workers.
- The Project will require all contractors to implement an Environmental, Health and Safety (EHS) plans which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. This will be achieved by making it a component of contractual agreement.
- The project will require all contractors provide appropriate Personal Protective Equipment (PPEs) at the work sites to prevent and minimize exposure to injury.
- Contractors will be required to carry out regular safety inspections to ensure measures to manage potential OHS hazards are in.

3.2.3 Anticipated Negative social Impacts**i) Spread of Covid – 19****Proposed Mitigation measures:**

- Electronic means of consulting stakeholders and holding meetings shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced;
- Avoid concentrating of more than 15 community members at one location. Where two or more people are gathered, maintain social distancing of at least 2 meters;
- The team carrying out engagements within the communities on one-on-one basis will be provided with appropriate PPE for the number of people they intend to meet;

- Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently.
- Allow participants to provide feedback and suggestions (iv) Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. (v) In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and Whatsapp & Chart groups.
- Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants

ii) Traffic congestion on local road

Traffic congestion is likely to be experienced on the local roads especially along the highway and other access routes. This is expected during delivery of construction material to the site and collection of resulting waste from construction work. Traffic congestion herein will be a short-term effect. This is short term.

Proposed Mitigation measures;

- All vehicles delivering bulk materials to the site to avoid overloading
- All the drivers to comply with traffic rules
- Use of appropriate signage like “heavy vehicles turning” or “slowdown” signs at least 50 meters away
- A traffic controller should be in place with a reflector jacket to caution other road users and the truck drivers

iii) Increased Social ills

Social ills are expected within and around the construction neighborhood. Alcoholism is expected to be on the rise as the locals and the entrants (contractors, engineers etc.) will have money to spend thus alcoholism. Sexual immorality will also be on the rise as the skilled workers might be staying away from home, this will result to single parenthood, unwanted pregnancies and there is a greater risk of HIV infection.

Proposed Mitigation measures:

- Worker sensitization on the need to manage their finances
- Educating/creating awareness to the locals about the dangers of sexual immorality
- Provision of condoms at designated sites like the toilets for the workers to access at will
- 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;

iv) Child labor

Child labour is work that children should not be doing because they are too young, or if they are old enough to work, because it is dangerous or unsuitable for them. Whether or not work performed by children is defined as child labour depends on the child's age, the hours and type of work involved. In this area, it is not uncommon to find children working for pay because their parents asked them to do it. Therefore, the CPCU and contractor should be keen on this and avoid it through due diligence.

Proposed Mitigation measures:

- Community sensitization;
- Putting the clause on child labour in the bidding documents for the contractor(s) to ensure mitigation through avoidance;
- Working with the County children's Department.

v) Sexual Exploitation and Abuse (SEA) of the 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.

Proposed Mitigation Measures:

- Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).

The SEA action plan will include how the project will ensure necessary steps are in place for:

- ✓ **Prevention of SEA:** including Codes of Conducts (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 Protection against Sexual Exploitation and Abuse (PSEA) awareness-raising in all community engagement activities; community-level Information Education and Communication (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.

vi) Gender-based violence (GBV) at 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 includes, for example, an increase in Intimate Partner Violence (IPV) when compensation schemes that share funds equally among husband and wife at the household level do not provide adequate sensitization and safety measures to reduce potential for increased tensions due to females receiving funds. This also refers to other GBV-related risks incurred as a result of 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.

Proposed 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.
 - ✓ 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.
 - ✓ Continuous awareness creation on reduction of GBV.
 - ✓ Awareness creation to the community on the availability of gender desks at the police stations and also the ministry of gender and social services and the need to seek for their services when necessary.

Police GBV Desk; identify hospitals where such cases are treated and let community know; Counselling sessions for the victims at identified health facilities; make known to the community available legal redress channels and make available the following GBV helplines in Kenya: The National GBV helpline 1195, Police helpline 999/112, Childline Kenya helpline 116, UWIANO SMS Platform 10, Kimbilio GBV helpline 1193, LVCT one 2 one youth helpline 1190 and FIDA SMS platform 21661.

3.3 Operational Phase

3.3.1 Positive impacts during operational phase

i) Expected impact on Poverty Alleviation

The dykes are expected to control water flows in the aqua park and this will result to high yields of fish. It will basically check siltation and pollution of the fish ponds that would otherwise.

ii) Social Inclusion

Social inclusion aims to empower poor and marginalized people to take advantage of burgeoning global opportunities through infrastructure development. Bukani village is now in the global map due to the aqua park and therefore the community is socially included.

iii) Flood control

The main purpose of the dyke is to control the flood during the rain season thereby preventing the fish being washed away by flood water.

3.3.2 Anticipated Negative Environmental Impacts during Operational phase

i) Air pollution (dust)

The dyke will be used as access road and in the process, there is anticipated impact of air pollution form dust emitted by the users of the dyke especially during the dry season.

Proposed mitigation measures:

- Sprinkling water on the dusty surfaces during windy days
- Limiting traffic on the dyke through fencing and fixing a gate

ii) Diversion of runoff

The dyke will direct the runoff from the upper part of the catchment to other places of the project area.

Proposed mitigation measures:

- Channeling run off to the drainage.

3.3.3 Anticipated Negative Social Impacts during operational phase

i) Risk of accidents (collapsing of the dyke and non-functional valve)

Proposed mitigation measures:

- Periodic checking and maintenance of the dyke
- Fencing off the dyke area

3.4 Anticipated Negative Environmental Impacts during decommissioning Phase

i) Impact on Natural Vegetation and Biodiversity

Flora: Minimal vegetation will be cleared during demolition of the dyke. However, this impact is not significant because the spatial extent is minimal. Further, some embankment sides can be vegetated with grass strips.

Proposed Mitigation Measures:

- Ensure proper demarcation of the project area and control of vehicles.
- Planting of grass and other vegetation after demolition.

ii) Air pollution (Dust emissions)

Proposed Mitigation measures:

- The area should be fenced off to reduce dust to the public
- Sprinkle loose surface earth areas with water to keep dust levels down.
- Masks should be provided to all personnel in areas prone to dust emissions.

iii) Occupation safety and health hazards

Proposed Mitigation Measures:

- The project shall ensure that contractors provide OHS training that may include hazard awareness, safe work practices and emergency preparedness to their workers to ensure they are appraised to project sites rules of work, personal protection and preventing injury to fellow workers.
- The Project will require all contractors to implement an Environmental, Health and Safety (EHS) plans which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. This will be achieved by making it a component of contractual agreement.
- The project will require all contractors provide appropriate Personal Protective Equipment (PPEs) at the work sites to prevent and minimize exposure to injury.
- Contractors will be required to carry out regular safety inspections to ensure measures to manage potential OHS hazards are in.

3.2.3 Anticipated Negative social Impacts

i) Traffic congestion on local road

Traffic congestion is likely to be experienced on the local roads especially along the highway and other access routes. This is expected during transportation of demolished material for disposal or re-use. Traffic congestion herein will be a short-term effect. This is short term.

Proposed Mitigation measures;

- All vehicles transporting demolished materials to to avoid overloading
- All the drivers to comply with traffic rules
- Use of appropriate signage like “heavy vehicles turning” or “slowdown” signs at least 50 meters away
- A traffic controller should be in place with a reflector jacket to caution other road users and the truck drivers

ii) Increased Social ills

Social ills are expected within and around the neighborhood. Alcoholism is expected to be on the rise as the locals and the entrants (contractors etc) will have money to spend thus alcoholism. Sexual immorality will also be on the rise as the skilled workers might be staying away from home, this will result to single parenthood, unwanted pregnancies and there is a greater risk of HIV infection.

Proposed Mitigation measures:

- Worker sensitization on the need to manage their finances
- Educating/creating awareness to the locals about the dangers of sexual immorality
- Provision of condoms at designated sites like the toilets for the workers to access at will
- 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;

CHAPTER FOUR: ENVIRONMENTAL SOCIAL MANAGEMENT AND MONITORING PLAN

4.0 Introduction

This chapter provides a synthesis of all identified issues and their proposed corrective measures as well as assigning responsibility for implementation of these measures. Environmental Social Management and Monitoring Plan (ESMMP) for development projects provide a logical framework within which identified negative environmental impacts can be mitigated and monitored. In addition, the ESMMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done.

4.1 Environmental Social Management& Monitoring Plan

The scope of this environmental social management and monitoring plan (ESMMP) document is to give guidelines to all parties involved in construction, maintenance and utilization of the rain water harvesting farm ponds in fulfillment of environmental and social requirements. The necessary objectives, activities, mitigation measures, and allocation of cost and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the construction and operation phase.

The tables below therefore summarize the Environmental Social Management and monitoring Plan for this project.

Table 1. Environmental Social Management and Monitoring Plan

Possible impacts	Mitigation measures	Monitoring indicators	Means of verification	Time Frame	Cost Estimated (KSH)	Responsibility
Construction Phase						
Environmental Impacts						
Impact on vegetation	<ul style="list-style-type: none"> • Ensure proper demarcation of the project area and control of construction vehicles. • Planting of grass on either side of the embankment 	Length of demarcated area Area of embankment planted with grass	Photos	Continuous	140,000/=	contractor
Air pollution (dust emission)	<ul style="list-style-type: none"> • The construction area should be fenced off to reduce dust to the public • Sprinkle loose surface earth areas with water to keep dust levels down. • Masks should be provided to all personnel in areas prone to dust 	Area under fencing Size of surface to sprinkle water Number of masks provided No. of dust screens on site	Presence of a fence Presence of sprinkled surfaces Availability of masks Presence of Dust screens	Continuous	220,000/=	contractor

	<p>emissions during construction.</p> <ul style="list-style-type: none"> • Installation of dust screens on site 					
Social Impacts						
Traffic Congestion	<ul style="list-style-type: none"> • Have a traffic controller in place • Install signage to control traffic 	No. of signs to control traffic and caution members of the public	Presence of the road signs	continuous	20,000/=	contractor
Risk of accident	<ul style="list-style-type: none"> • Provide adequate PPEs to workers • Avail first aid kit to workers • Regularly maintain and service machines 	<p>No. of PPEs at the site</p> <p>No. of first aid kits</p> <p>No. and interval of machine maintenance and servicing</p>	<p>Presence of PPEs</p> <p>Presence of first aid kits</p> <p>Records of maintenance and servicing</p>	continuous	50,000/=	Contractor
Occupational Health and Safety Hazards	<ul style="list-style-type: none"> • Undertake OHS training to workers • Implement an Environmental, Health and Safety (EHS) plans which will outline procedures for avoiding health and safety incidents and 	<p>No. of trainings undertaken</p> <p>No. of plans implemented</p>	<p>Attendance lists of participants</p> <p>Presence of the plans in plans</p> <p>Presence of PPEs at the site</p>	continuous	90,000/=	contractor

	<p>for emergency medical treatment.</p> <ul style="list-style-type: none"> • Provide appropriate Personal Protective Equipment (PPEs) at the work sites • Carry our regular safety inspections to ensure measures to manage potential OHS hazards are in place 	<p>No. of PPEs provided</p> <p>No. of inspections undertaken</p>	<p>Inspection schedules in place</p>			
<p>Spread Covid - 19</p>	<ul style="list-style-type: none"> • Raise awareness on the need to take COVID-19 vaccine, • Ensuring social distancing of not less 1.5 meters between employees in all directions, • Hygiene promotion through suitable hand sanitizing facility or handwashing soap and water during group meetings and at the farms • Strict and proper use of face masks 	<p>No of SOP(s) developed,</p> <p>No of training material developed,</p> <p>No of PPE purchased and used,</p> <p>No of installed hand washing equipment installed.</p>	<p>Presence of handwashing facilities/sanitizers</p> <p>Appropriate PPE (Face Masks)</p> <p>Observance of social distance</p> <p>No. of trainings</p> <p>Vaccinations undertaken</p>	<p>continuous</p>	<p>30,000/=</p>	<p>Contractor and</p>

	<p>throughout all working hours.</p> <ul style="list-style-type: none"> • Implement Ministry of Health guidelines for staff safety and health, including daily temperature checks for everyone in the workplace • Increase frequency of cleaning commonly touched surfaces / objects 					
Increased social ills	<ul style="list-style-type: none"> • Sensitize workers and community members on HIV/AIDS awareness and other communicable diseases to be instituted and implemented as part of the contractor's Health and Safety Management Plan • Engagement with the community including; development of confidential community-based complaints mechanisms 	<p>Number of awareness, creation, consultative workshop/meetings</p> <p>Number of condoms distributed</p> <p>Regular community outreach to women and girls about social risks</p>	Training Reports	Throughout	50,000/=	Contractor

	<p>discrete from the standard GRM</p> <ul style="list-style-type: none"> Mainstreaming of sexual exploitation and abuse (SEA) awareness-raising in all community engagement activities. 					
Child labour	<ul style="list-style-type: none"> Sensitization Putting clause on child labour in bidding documents Working with County Child Department 	<p>No. of meetings</p> <p>No. of bidding documents with clause on child labour</p>	<p>Minutes of the meetings</p> <p>Attendance list</p> <p>Photos</p> <p>Documents</p>	Continuous	50,000	contractor
SEA of the community by project workers	<p>Develop and implement a SEA action plan with accountability and response framework as part of the C-ESMMP.</p> <p>SEA action plan will include how the project will ensure necessary steps are in place for:</p> <ul style="list-style-type: none"> Prevention of SEA Response to SEA Engagement with the community 	SEA action plan in place and being implemented	SEA action plan	Continuous	100,000	Contractor

	<ul style="list-style-type: none"> • Management and coordination 					
GBV at community level	<p>Implementing provisions that ensure that GBV is not triggered including:</p> <ul style="list-style-type: none"> • Effective and on-going community engagement and consultation. • Reviewing specific project components that are known to heighten GBV risk. • Specific plan for mitigating these known risks. • Ensuring adequate referral mechanism are in place. • Community awareness creation. 	<p>No. of community engagement meeting</p> <p>No. of specific project components reviewed.</p> <p>No. of specific plan in place</p> <p>No. of awareness creation meetings</p>	<p>Minutes of the meetings</p> <p>Attendance list</p> <p>Plan documents</p> <p>Photos</p>	Continuous	50,000	Contractor
Operational Phase						
Environmental						
Dust emissions (Dyke users)	<ul style="list-style-type: none"> • Sprinkling water on the dusty surfaces during windy days 	Area sprinkled with water	Presence of sprinkling schedules	continuous	200,000/=	Proponent

	<ul style="list-style-type: none"> Limiting traffic on the dyke through fencing and fixing a gate 	No of gates installed	Presence of fence and gate			
Diversion of runoff	<ul style="list-style-type: none"> Channeling runoff to the drainage. 	Presence of channel	Photo	Continuous	5,000	Proponent
Social Impacts						
Risk of accidents (collapsing of the dyke and non-functional valve)	<ul style="list-style-type: none"> Periodic checking and maintenance of the dyke Fencing off the dyke area 	No of routine maintenance undertaken Area under fencing	Presence of records Presence of fence to secure the dyke	Continuous	200,000/=	Proponent
Decommissioning Phase						
Environmental						
Impact on vegetation	<ul style="list-style-type: none"> Ensure proper demarcation of the project area and control of vehicles. Planting of grass on either side of the embankment 	Length of demarcated area Area of planted with grass and other vegetation	Presence of demarcated routes for the vehicles Presence of planted grass and other vegetation	Continuous	To be determined	contractor
Air pollution (dust emission)	<ul style="list-style-type: none"> The area should be fenced off to reduce dust to the public 	Area under fencing	Presence of a fence	Continuous	To be determined	contractor

	<ul style="list-style-type: none"> • Sprinkle loose surface earth areas with water to keep dust levels down. • Masks should be provided to all personnel in areas prone to dust emissions during construction. • Installation of dust screens on site 	<p>Size of surface to sprinkle water</p> <p>Number of masks provided</p> <p>No. of dust screens on site</p>	<p>Presence of sprinkled surfaces</p> <p>Availability of masks</p> <p>Presence of Dust screens</p>			
Social Impacts						
Traffic Congestion	<ul style="list-style-type: none"> • Have a traffic controller in place • Install signage to control traffic 	No. of signs to control traffic and caution members of the public	Presence of the road signs	continuous	To be determined	contractor
Risk of accident	<ul style="list-style-type: none"> • Provide adequate PPEs to workers • Avail first aid kit to workers • Regularly maintain and service machines 	<p>No. of PPEs at the site</p> <p>No. of first aid kits</p> <p>No. and interval of machine maintenance and servicing</p>	<p>Presence of PPEs</p> <p>Presence of first aid kits</p> <p>Records of maintenance and servicing</p>	continuous	To be determined	Contractor
Occupational Health and	<ul style="list-style-type: none"> • Undertake OHS training to workers 	No. of trainings undertaken	Attendance lists of participants	Continuous	To be determined	contractor

Safety Hazards	<ul style="list-style-type: none"> • Implement an Environmental, Health and Safety (EHS) plans which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. • Provide appropriate Personal Protective Equipment (PPEs) at the work sites • Carry out regular safety inspections to ensure measures to manage potential OHS hazards are in place 	<p>No. of plans implemented</p> <p>No. of PPEs provided</p> <p>No. of inspections undertaken</p>	<p>Presence of the plans in plans</p> <p>Presence of PPEs at the site</p> <p>Inspection schedules in place</p>			
Increased social ills	<ul style="list-style-type: none"> • Sensitize workers and community members on HIV/AIDS awareness and other communicable diseases to be instituted and implemented as part of the contractor's 	<p>Number of awareness, creation, consultative workshop/meetings</p>	<p>Training Reports</p>	<p>Throughout</p>	<p>To be determined</p>	<p>Contractor</p>

	<p>Health and Safety Management Plan</p> <ul style="list-style-type: none"> • Engagement with the community including; development of confidential community-based complaints mechanisms discrete from the standard GRM • Mainstreaming of sexual exploitation and abuse (SEA) awareness-raising in all community engagement activities. 	<p>Number of condoms distributed</p> <p>Regular community outreach to women and girls about social risks</p>				
--	--	--	--	--	--	--

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Based on our findings the project poses minimal negative impacts to the environment but has sufficient social and economic benefits to the community. The results also indicate that there are no significant negative impacts likely to be generated by the activities of the proposed project which have not been addressed. We have herein provided an environmental social management and monitoring plan for immediate and future action.

The team provides the following conclusions;

- The proponent or their representatives will be responsible for implementing the ESMMP.
- The project will result in huge possible social, economic and environmental impacts that are in line with current development policies of this country. The social economic opportunities will make it worthwhile to invest in environmental conservation.
- Most of the potential negative impacts to be generated have been rated as low. Those impacts rated as high may be adequately mitigated and therefore may not be grounds for not approving the project.
- The proponent will have to comply with the ESMMP recommendations to ensure health and safety for the workers, clients and pedestrians.
- The costs of implementing the ESMMP will be incorporated in the project proposal.
- The proposed project will not compromise with the wellbeing of the residents of Busia area, the ecological and environmental conditions but will instead create employment and investment opportunities.

5.2 Recommendations

From the foregoing chapters it is worth noting that the project's positive impacts far outweigh the negative impacts and with implementation of appropriate mitigation and monitoring measures, the project may be considered environmentally friendly, commercially viable as well as economically sound.

The project is thus recommended for approval by NEMA for subsequent implementation with the following conditions: -

- Proponent will ensure implementation of the proposed ESMMP during all phases of the project implementation and operation.
- The proponent applies for necessary licenses from the authorities concerned.
- The proponent should adhere to proper development environmental practices.
- The construction of the building will take the minimum period possible.

REFERENCE

- Kenya gazette supplement Acts 2000, Environmental Management and Coordination Act Number 8 of 2015. Government printer, Nairobi
- Kenya gazette supplement Acts Penal Code Act (Cap.63) Government Printers, Nairobi
- Kenya gazette supplement Acts Physical Planning Act, 2015, Government Printers, Nairobi
- Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003, Government Printers, Nairobi
- Kenya gazette supplement number 68, Environmental Management and Coordination (Water Quality) Regulations, 2006, Government printer, Nairobi
- Kenya gazette supplement number 69, Environmental Management and Coordination (Waste management) Regulations, 2006, Government printer, Nairobi
- Noise Prevention and Control Rules 2005, Legal Notice no. 24, Government Printers, Nairobi
- Pollution prevention and abatement handbook – Part III, (September, 2001)
- Republic of Kenya (2006), The Water Quality Regulations
- Republic of Kenya (2009), The Noise and Excessive Vibration Pollution Regulations
- Republic of Kenya (2010), The Constitution of Kenya
- The County Integrated Development Plan, Busia County, 2018 – 2022
- The Environmental Management and Coordination (Amendment) Act of 2015
- The Occupational Safety and Health Act, 2007, Government Printers, Nairobi
- World Bank (1991), Environmental Assessment sourcebook volume I: Policies, procedures and cross-Sectoral issues. World Bank, Washington.
- Busia County Integrated Development Plan 2013-2017

ANNEXES

- EIA/EA Practicing licence
- Attendance list of public participation meeting
- Land ownership documents
- Screening checklist
- Dyke plan

Annex 1: EIA/EA Expert practicing license

FORM T

 nema
NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

License No: NEMA/EIA/TRPL/14928
Application Reference No: NEMA/EIA/EL/19249

M/S **Chirande Dennis**
(individual or firm) of address
P.O. Box 140-50400 Huzia

is licensed to practice in the
capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **6511**
in accordance with the provision of the Environmental Management and Coordination Act Cap
387.

Issued Date: **5/5/2021** Expiry Date: **12/31/2021**

Signature.....

(Seal)
Director General
The National Environment Management
Authority



Scanned by TapScanner

Annex 2: Land ownership document (Land agreement)



REPUBLIC OF KENYA
COUNTY GOVERNMENT OF BUSIA
DEPARTMENT OF AGRICULTURE,
LIVESTOCK, FISHERIES AND
AGRIBUSINESS



BUKANI DYKE LAND AGREEMENT

FARMER GROUP FARM PONDS CONSTRUCTION

Sub county: SANJA Ward: Ward 10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100 Site Name: BUKANI

This agreement is made on the 4th Day of January two thousand and twenty-two, County Government of Busia on the **First** part and farmer/ Farmer Group of the **Second** part.

WHEREAS, the purposes of this Agreement are:

- a) To provide for the establishment of the Bukani Aqua Park Dyke.
- b) To provide for the participation of all the parties to the agreement in the construction of the dyke.
- c) To provide for the strengthening of the farmer groups for effective operation and maintenance (O&M) of the dyke.

Now it is agreed as follows:

A. The Farmer/ Group Shall:

- A1 Provide the necessary suitable land for the establishment of the dyke.
- A2 Allow KCSAP Project to carry out construction of the dyke on the agreed land.
- A3 Repair and maintain the dyke as required
- A4 Ensure all the safety precautions are met and accept any liability that may arise after completion of the construction works.
- A5 Utilize input support in accordance with the technical advice from Extension staff.

B. Department of Agriculture, Livestock, Fisheries and Agribusiness on behalf of the County Government of Busia shall;

- B1 In concurrence with the farmer group, agree on a suitable site for the dyke construction.
- B2 Provide 70 percent of the total funds for the construction of the dyke.
- B3 Provide extension services for the farmer groups for maintenance of the dyke.

C. Ground for Termination

This agreement becomes void if the farmer Group shall not;

- i) Provide a suitable site for the dyke construction
- ii) Use of the dyke infrastructure as recommended by this agreement, upon which repossession of the above infrastructure will be done by the County Government.

IN WITNESS WHEREOF, the parties hereto, acting through their representative there unto duly authorized, have caused this agreement to be signed in the representative names, as of the date first above written.

SIGNED BY:

Farmer, Name JOTHN KANE ODIDO ID No. 0403650
Signature [Signature]
Address 314, FUNYULA Mobile No. 0771653044

County Government Representative

Name CITAS MUTOMBO
Signature [Signature]
Address P.O. Box 142, Busia

County Government Representative Administration

Name EMILY NAKIRA WANDER ID No. 15080075
Signature [Signature]
Address 314, FUNYULA Mobile no. 0771970916

Ministry of Interior Security and Administration

Name DAVID OKUKA ID No. 8297334
Signature [Signature]
Address Box 25-50406 Mobile no. 0723665756

Annex 3: Dyke design

Appendix C: Simulation Reports

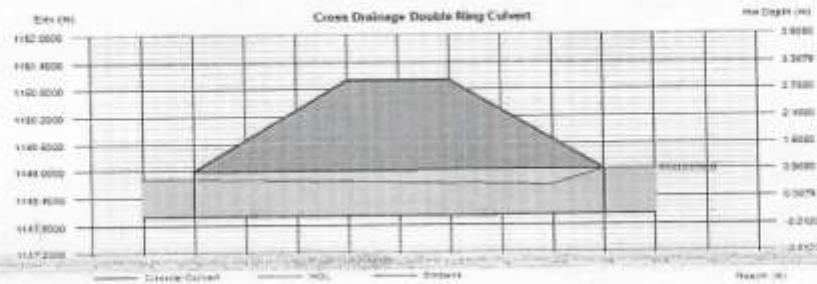
Cross Drainage Double Ring Culvert

Invert Elev Dn (m)	= 1148.0000
Pipe Length (m)	= 12.0000
Slope (%)	= 0.0998
Invert Elev Up (m)	= 1148.0120
Rise (mm)	= 1000.0
Shape	= Circular
Span (mm)	= 1000.0
No. Barrels	= 2
n-Value	= 0.010
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (m)	= 1151.0000
Top Width (m)	= 3.0000
Crest Width (m)	= 3.0000

Calculations	
Qmin (cms)	= 0.0000
Qmax (cms)	= 3.0000
Tailwater Elev (m)	= (dc+D)/2

Highlighted	
Qtotat (cms)	= 2.5000
Opipe (cms)	= 2.5000
Qovertop (cms)	= 0.0000
Veloc Dn (m/s)	= 1.8104
Veloc Up (m/s)	= 2.3418
HGL Dn (m)	= 1148.8220
HGL Up (m)	= 1148.6550
Hw Elev (m)	= 1149.0160
HwD (m)	= 1.0037
Flow Regime	= Inlet Control

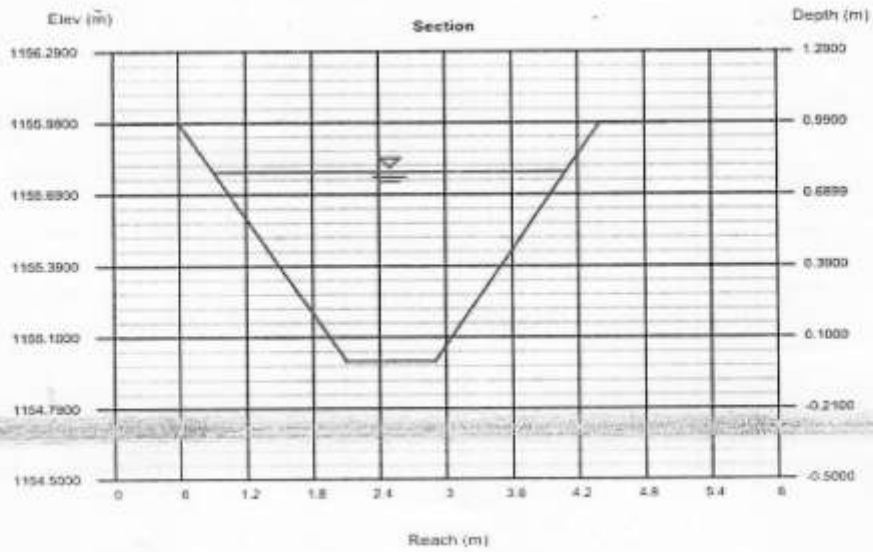


Alignment A: Chainage 0+00

Trapezoidal
 Bottom Width (m) = 0.8000
 Side Slopes (z:1) = 1.5000, 1.5000
 Total Depth (m) = 1.0000
 Invert Elev (m) = 1155.0000
 Slope (%) = 0.2000
 N-Value = 0.040

Calculations
 Compute by Known Q
 Known Q (cms) = 1.0000

Highlighted
 Depth (m) = 0.7925
 Q (cms) = 1.0000
 Area (sqm) = 1.5700
 Velocity (m/s) = 0.6345
 Wetted Perim (m) = 3.8573
 Crit Depth, Y_c (m) = 0.4176
 Top Width (m) = 3.1774
 EGL (m) = 0.8130

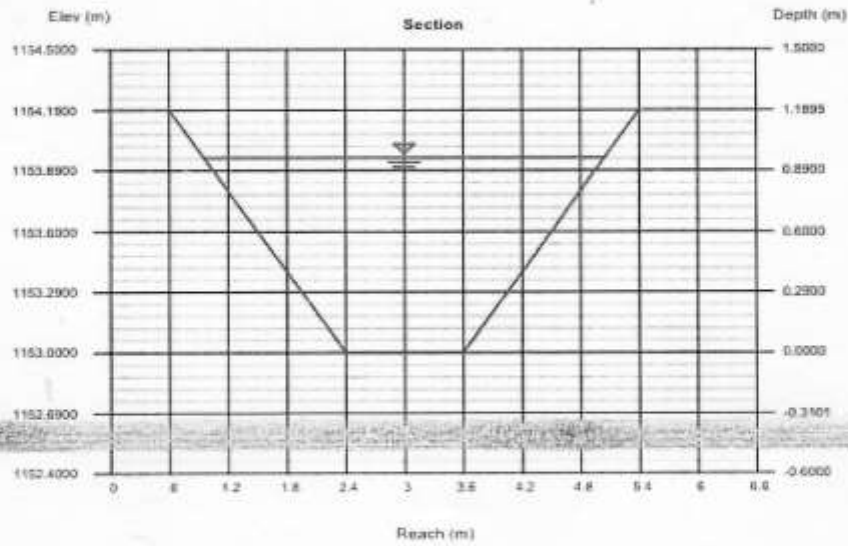


Alignment A: Chainage 0+415

Trapezoidal
 Bottom Width (m) = 1.2000
 Side Slopes (z:1) = 1.5000 1.5000
 Total Depth (m) = 1.2000
 Invert Elev (m) = 1153.0000
 Slope (%) = 0.2000
 N-Value = 0.040

Calculations
 Compute by: Known Q
 Known Q (cms) = 1.9000

Highlighted
 Depth (m) = 0.9632
 Q (cms) = 1.9000
 Area (sqm) = 2.5471
 Velocity (m/s) = 0.7459
 Wetted Perim (m) = 4.6727
 Crit Depth, Y_c (m) = 0.5121
 Top Width (m) = 4.0895
 EGL (m) = 0.9915



Drawings

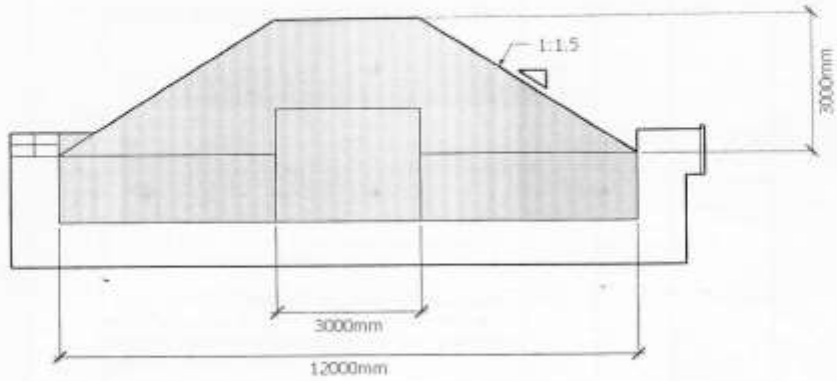


Figure 14: Illustration of Cross Drainage under the dike embankment core with flag gate.

Annex 4: Screening Checklist

Annex 12A: Environmental and Social screening Check list
ESM Sub-projects Screening Checklist (Prototype)
(Sub-projects screening process by benefitting communities/Agencies)
Section A: Background information

Name of County Busia
 Name of CPCU /Researcher Samuel Onjo
 Sub-project location BUKANI
 Name of CBO/Institution.....
 Postal Address:.....
 Contact Person..... Cell phone:.....
 Sub-project name BUKANI DIKE
 Estimated cost (Kshs.) 9,000,000
 Approximate size of land area available for the sub-project 1/4 Acres
 Objectives of the sub project Control over flooding for increased fish productivity in Bukani
Apur park
 Activities/enterprises undertaken Dike construction, compaction
 How was the sub-project chosen? Community participation
 Expected sub project duration: 2 Months

Section B: Environmental Issues

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

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

Section C: Socio-economic Issues

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

Section D: Natural Habitats

Will the sub-project:	YES	NO
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?		✓
Adversely affect environmentally sensitive areas or critical habitats – wetlands, woodlots, natural forests, rivers, etc.)?		✓
Affect the indigenous biodiversity (Flora and fauna)?		✓
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly?		✓
Affect the aesthetic quality of the landscape?		✓
Reduce people's access to the pasture, water, public services or other resources that they depend on?		✓
Increase human-wildlife conflicts?		✓
Agrochemical use		
Will the micro-project:		
Involve the use of pesticides or other agricultural chemicals, or increase existing use?		✓
Cause contamination of watercourses by chemicals and pesticides?		✓
Cause contamination of soil by agrochemicals and pesticides?		✓
Experience effluent and/or emissions discharge?		✓
Export produce? Involve annual inspections of the producers and unannounced inspections?		✓
Require scheduled chemical applications?		✓

Require chemical application even to areas distant away from the focus?		✓
Require chemical application to be done by vulnerable group (pregnant mothers, chemically allergic persons, elderly, etc.)?		✓
Use irrigation system in its implementation?		✓

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

Section E: Pesticides and Agricultural Chemicals

Will the sub-project:	YES	NO
Involve the use of pesticides or other agricultural chemicals or increase existing use?		✓
Cause contamination of watercauses by chemicals and pesticides?		✓
Cause contamination of soil by agrochemicals and pesticides?		✓
Experience effluent and/or emission discharge?		✓
Export produce? Involve annual inspections of the producers and unannounced inspections?		✓
Require scheduled chemicals applications?		✓
Require chemicals application even to areas distant away from the focus?		✓
Require chemicals application to be done by vulnerable group (pregnant mothers,chemically allergic persons,elderly,etc		✓

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

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

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

Section G: Land Acquisition and Access to Resources

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

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

Section H: Proposed action

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

(iii) Recommended Course of Action

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

A simple EMP is recommended for the dike.

Completed by: _____

Name: _____

Position / Community: _____

Date: _____
 Field Appraisal Officer (CDE): *Duncan*

Signature: *[Handwritten Signature]*

Date: _____

