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

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**PROPOSED BANANA VALUE ADDITION PROJECT MAGUTUNI SUB-LOCATION, KIERA  
LOCATION, MWIMBI WARD, MAARA SUB-COUNTY OF THARAKA-NITHI COUNTY**

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**GPS Co-ordinates:** S-0.226472 E37.734693

**Altitude:** 1202 Metres a.s.l



<b>SPONSOR:</b>	Government of Kenya / County Government of Tharaka-Nithi with support from the World Bank 
<b>CLIENT:</b>	Kenya Climate Smart Agriculture Project (KCSAP)
<b>PROPONENT</b>	Mwimbi Muringa Banana Irrigation Co-operative Society Limited

## CERTIFICATION

### ESIA/EA EXPERT

This Environmental and Social Impact Assessment (ESIA) study was conducted and Summary Project Report (SPR) prepared in accordance with the Environmental Management and Coordination Act (EMCA) 1999 and the Environmental Impact Assessment and Audit Regulations 2003 (Amendment 2015 & 2019 respectively) in order to meet the statutory requirements for the implementation of the proposed projects under schedule ii.

I, the undersigned, confirm that the contents of this report are a true representation of the ESIA process for the proposed banana value addition project for Mwimbi Muringa Banana Co-operative Society Limited.

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Date: .....

### CLIENT:

I **Dr. Lucy Kareithi** declare that this ESIA Summary Project Report (SPR) for the proposed banana value addition project for **Mwimbi Muringa Banana Irrigation Co-operative Society Limited** is correct and up to date. I also confirm that I shall ensure the implementation of the Environmental and Social Management and Monitoring Plan (ESM&MP) contained in this report. Moreover, I shall adhere to any recommendations or conditions issued by NEMA and other relevant authorities with regarding to the proposed project.

**Designation:** County Project Coordinator (CPC)

Kenya Climate Smart Agriculture Project (KCSAP)

Tharaka-Nithi County

Signature and Stamp: .....

Date: .....

*Mwimbi Muringa Banana Irrigation Co-operative Society Limited ESIA SPR*

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**PROONENT:**

I, JOHN NUNENE NDIKWA on behalf Mwimbi Muringa Banana Irrigation Co-operative Society Limited of P.O Box 90 – 60401 Chogoria confirm that this Environmental and Social Impact Assessment (ESIA) study for the proposed banana value addition project has been conducted and Summary Project Report (SPR) prepared and submitted to NEMA with our authority as the proponent.

**Designation:** Chairman – Mwimbi Muringa Banana Irrigation Co-operative Society Limited

**Signature and Stamp:**  **Date:** 27/06/2022

## **ACKNOWLEDGEMENT**

We would like to appreciate all those people that have immensely helped to make this study and preparation of this SPR successful. In particular, we would like to appreciate Dr. Lucy Kareithi the County Project Coordinator, Kenya Climate Smart Agriculture (KCSAP) - Tharaka-Nithi County and the entire management team for commissioning us to conduct this Environmental and Social Impact Assessment study for the proposed warehouse for banana value addition project. Furthermore, we would like to acknowledge with great appreciation all those key stakeholders and neighbours for their support in providing requisite information throughout the study process. Special thanks goes to the Executive Committee Member (CECM) Mr. Njue Njagi, Chief Officer Mr. Micheni Kibati for Agriculture, Livestock, Fisheries Industry and Cooperatives, Environmental and Social Safeguards Compliance officer (CESSCO) – Tharaka Nithi County, Ms. Anne Njagi, and the Environmental and Social Impact Assessment team lead by Dickson Kimathi Muthaura (Lead Expert) that helped in data collection, analysing and coming up with this report without whose assistance during the fieldwork and subsequent writing of this report would not have been possible.

The final report is the result of a collaborative process which drew on the effort, knowledge, expertise and patience of the experts in availing additional information. Others that have not been named here, their efforts are earnestly recognized.

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## **ABBREVIATIONS AND ACRONYMS**

<b>a.s.l</b>	Above Sea Level
<b>COC</b>	Code of Conduct
<b>CGTN</b>	County Government of Tharaka Nithi
<b>EIA</b>	Environmental Impact Assessment
<b>EMCA</b>	Environmental Impact Assessment
<b>ERA</b>	Economic Recovery Strategy
<b>GBV</b>	Gender Based Violence
<b>Ha</b>	Hectare
<b>HEP</b>	Hydroelectric Power
<b>HIV/AIDs</b>	Human Immunodeficiency Virus/Acquired Immunodeficiency Symptoms
<b>IEC</b>	Information Education and Communication
<b>KTDA</b>	Kenya Tea Development Authority
<b>ISWM</b>	Integrated Solid Waste Management
<b>Ltd</b>	Limited
<b>NEMA</b>	National Environmental Management Authority
<b>PPE</b>	Personal Protective Equipment
<b>SRA</b>	Strategy for Revitalizing Agriculture
<b>SH</b>	Sexual Harassment
<b>STI</b>	Sexually Transmitted Infections
<b>TDS</b>	Total dissolved Solids
<b>TOR</b>	Terms of Reference



## EXECUTIVE SUMMARY

The proposed warehouse for banana value addition project belongs to Mwimbi-Muringa Banana Irrigation Co-operative Society Limited and is located within Magutuni Market, Magutuni Sub-Location, Keria Location, Mwimbi Ward, Maara Sub-county of Tharaka-Nithi County. The GPS Coordinates and altitude at the proposed project site are S-0.226472 E37.734693 and 1202 Metres a.s.l respectively.

Mwimbi Muringa Banana Irrigation Co-operative Society was registered on 19<sup>th</sup> August, 2019 with the aim of improving banana marketing. The organization was registered as a commercial arm of the giant Muringa Banana Irrigation project which has a membership of 6,000. The aim of the producer organisation is to empower farmers on banana production and improve marketing. The Cooperative has a total of 512 members (306 women and 206 men) drawn from the Irrigation Scheme in Mwimbi Ward. The cooperative is positioning itself to provide a standard aggregation center where bananas will be prepared (value added) before selling them to buyers.

The project is implemented through the Kenya Climate Smart Agriculture Project (KCSAP) – a Government of Kenya (GoK) initiative funded by World Bank/ International Development Association (IDA) – whose development objective is to increase agricultural productivity and profitability of targeted rural communities in selected counties including Tharaka-Nithi County. The specific intervention measure proposed in this project is construction of a banana value addition facility featuring an office, a shop and banana aggregation section.

The proposed banana value addition project will involve procurement of 40 feet containers for banana storage, chips and flour making, tubular solar electric drier and for office (marketing operations and information system centre). The estimated total cost of the proposed project is **Kshs. 8,974,000** with **Kshs. 7,450,00** being sort from KCSAP and co-operative contribution of **Kshs. 1,524,000**.

The objective of this ESIA study is to prepare an ESIA Summary Project Report for the proposed project that specifically identifies, assesses and documents the set of mitigation, monitoring and institutional actions to be undertaken before and during construction and to eliminate adverse environmental and social impacts, offset or minimize the impacts to acceptable levels.

The approach and methodology of this study followed Kenyan policy and regulatory frameworks, legislation and related policies and guidance documents. It also followed World Bank's policies on environmental assessment (OP 4.0) and related policies and guidance documents. Available reference documents were thoroughly reviewed for purposes of identifying relevant environmental and social issues/concerns. Different methodologies were employed to carry out the task that included; site inspection, observation and photography, desk review of the relevant documents regarding the proposed project, community and stakeholders' consultations through Focused Group Discussions (FGD) and interviews during structured questionnaires and key informants.

The ESIA study, was conducted in accordance with the legal requirement stipulated in the EMCA 1999 (Amendment 2015) and its subsequent supplements; the Environmental (Impact Assessment and Audit) Regulation, 2003 (Amendment 2019) ; the Land Acts, the Water Act 2016; Forest Conservation and Management Act, 2016; the Land Act; (Conservation of Biological Diversity and Resources and Access to Genetic Resources and Benefit Sharing) Regulations, 2006 among other pertinent legal and institutional frameworks regulating major development including the

World Bank Environmental and Social Safeguard Policies. Other relevant legislations included the public health, physical planning and land use planning Act, policy on gender and sexual based violence, HIV/AIDS prevention and control Act, and sexual offences Act, among others.

This ESIA as a site-specific safeguard instrument is required to provide necessary procedures and criteria that will guide the implementation of the proposed project in accordance with existing international and national environmental policies, legislative frameworks, guidelines and assessment procedures.

The public participation meeting was held on 20<sup>th</sup> may, 2022 at Iruma Location Chief's camp where 48 individuals (25 Male and 23 Female) attended. The issues of concern that were raised during the meeting were post-harvest loss of produce due to lack of ready market, exploitation by middlemen, poor market prices and poor roads especially when it rains thus affecting transportation of the produce. It was agreed that the proposed project will address those issues apart from poor roads which should be addressed by the National and County Government.

The potential environmental and socio-economic benefits expected from the implementation of the proposed project will include: creation of employment opportunities, increased production of bananas, improved prices of bananas, decreased post-harvest losses, improved livelihood of the community, improved health of the people (nutrition), increased market for bananas and increased community resilience to effects of climate change among others.

The anticipated negative environmental impacts of the proposed project include: solid waste generation, impacts on air (mainly dust and fumes from machinery), noise and vibrations, soil erosion, impacts on land and soil, impact on water resources, impact on biodiversity. The anticipated negative social impacts include: risk of spread of COVID – 19, Occupational Health and Safety, increased cases of HIV/AIDs and STDs, security issues, public disturbance, Sexual Exploitation and Abuse (SEA), Gender Based Violence and Sexual Harassment (GBV/SH) and Child Abuse.

The mitigation measures for the anticipated impacts have been comprehensively discussed on chapter 5 (Anticipated impacts and mitigation measures) and summarized on chapter 6 (Environmental and Social Management and Monitoring Plan – ESM&MP). An Environmental Audit should be carried out once the project is in operation after two years. Some of mitigation measures discussed include: sensitization of the public on the proposed project, to prevent spread of COVID-19 the contractor should ensure strict adherence to ministry of health COVID-19 guidelines and protocol (ensure social distance, washing hands regularly, sanitizing and wearing face masks), enforcing strict use of personal protective equipment, practicing ISWM and sensitizing the community on soil and land management practices during proposed project implementation.

The estimated cost of implementing the ESMMP is **Kshs. 990,000**. The ESM&MP in this report should be shared with the selected contractor to enable the contractor come up with Contractor-Specific ESM&MP (C-ESMMP) for implementation. Considering the positive and negative impacts, this project will not result to significant, cumulative, or irreversible negative impacts. All the predicted impacts will be easily mitigated during implementation. The CPCU should ensure that there is follow up and monitor implementation of the ESM&MP. Based on the assessment, the project is thus recommended for approval by the NEMA and approval letter issued before commencement of its implementation.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background Information**

The agricultural sector continues to be key economic and social driver of development. Overall, the sector directly contributes about 26% of Kenya's GDP and about 27% indirectly through linkages to agro-based industries and the service sector. The sector accounts for over 65% of exports, provides about 75% of total employment and supports over 80% of the rural population. The SRA and the ERS recognized the role that agriculture plays in realization of economic growth. The sector has also been given recognition to aid in achieving vision 2030 with value addition and marketing opportunity.

Tharaka Nithi County is among the leading producers of bananas in Kenya with the crop grown in the entire highland and middle belt of the county with about 76,633 tons of bananas produced annually with a market value of Kshs.110 billion. Apart from coffee and tea which has organized market through coffee societies and KTDA respectively bananas are sold through traders characterized by poor marketing channels. This reduces farmers earning from the crop.

Mwimbi Muringa Banana Irrigation Co-operative Society was registered on 19<sup>th</sup> August, 2019 with the aim of improving banana marketing. The organization was registered as a commercial arm of the giant Muringa Banana Irrigation project which has a membership of 6,000. The aim of the producer organisation is to empower farmers on banana production and improve marketing. The Cooperative has a total of 512 members (306 women and 206 men) drawn from the Irrigation Scheme in Mwimbi Ward. The cooperative is positioning itself to provide a standard aggregation center where bananas will be prepared (value added) before selling them to buyers.

The objective of the proposed project is to promote banana value addition within Mwimbi ward of Maara Sub-County, Tharaka-Nithi County. The proposed project will increase production of bananas due to increased market and consequently promote food security, improve livelihood of the target community and increased resilience to impacts of climate change. This is in line with KCSAP PDO which entails **increasing agricultural productivity, enhancing resilience to impacts of climate change and contributes to reduction in Greenhouse Gas emissions.**

### **1.2 Justification of the proposed project**

During construction phase, the proposed project will create employment, provide market for the construction materials, promote transport sector because trucks will be hired to transport construction materials and generate revenue for the government through taxation. During operational phase the proposed project will massively improve banana production due to improved market and market price of bananas, decrease post-harvest losses of bananas, deal with the issue of exploitation by middlemen, create employment and generally improve the livelihood of the people. It is for these benefits that the proposed project was identified as a viable project for funding.

### **1.3 Justification of conducting SPR**

The undertaking of environmental screening for of the proposed project was to determine the degree of risk posed by the proposed project on the environment and, based on this risk, the categorization of the project under the second schedule of the Environmental Management and

Coordination (Amendment) Act, 2015. This ESIA Summary Project Report was as a result of recommendation of the County Director Environment (CDE) NEMA based on the screening report. *See annexed screening Checklist (Annex No. 11)* and 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:

- To present an outline of the background of the proposed project;
- To identify key areas for environmental and social concerns as well as the anticipated impacts associated with the proposed project implementation and commissioning;
- To predict likely positive and negative environmental and social impacts of the proposed project;
- To establish a comprehensive Environmental and Social Management and Monitoring Plan (ESM&MP) covering the construction phase, operation and decommissioning phases of the proposed project;
- To highlight environmental issues with a view to guide policy makers, planners, stakeholders and the government agencies to help them understand the implications of the ESIA Summary Project Report and make the necessary decisions concerning the proposed project and future planning;
- To establish benchmarks for the various environmental aspects relating to the proposed project;
- To establish a framework for environmental management system that aims at environmental sustainability;
- To prepare an ESIA Summary Project Report in accordance with the environmental legislation and submission to NEMA for further instruction and /or approval.

#### **1.5 SPR Approach and methodology**

##### **a) Environmental Screening**

The conducting of environmental screening for development projects determines the degree of risk posed by the proposed project on the environment and, based on this risk, the categorization of the project under the second schedule of the Environmental Management and Coordination (Amendment) Act, 2015.

##### **b) Environmental Scoping**

The purpose of environmental scoping is to determine the intensity of the expected environmental impacts and the people likely to be affected. In this study, environmental scoping involved evaluating the expected environmental impacts and discussing them with relevant stakeholders to determine their views on the same.

##### **c) Desk Review**

This involves examining current and past literature materials on environmental and socio-economic impacts and their mitigation measures and other related information of similar projects.

#### **d) Field Data Collection**

##### **i) Public Consultation**

The public consultation exercise was guided by a standard questionnaire developed by the experts with key focus on the area environment, community needs, potential risks, and benefits of the project. Moreover, key informants were administered to the government officials to enable them give their in-depth understanding, views and comments vis-à-vis the proposed project. Direct interviews and Focused Group Discussion (FGD) were also used to gather the community's concerns and opinions on the proposed project.

##### **ii) Observational Methods**

This was used to assess and quantify environmental risks posed by the proposed project. The application of this technique was based on the expert's long-term knowledge and experience in environmental and social impact assessment and environmental management.

##### **iii) Photography**

The EIA/EA expert took photos of the site to document the local environment including vegetation cover, existing structures, area topography, and infrastructure.

#### **1.6 Outline of SPR**

The structure of this ESIA-SPR Report is as follows:

- Executive Summary
- Introduction (Chapter 1)
- Nature of the Project (Chapter 2)
- The Location of the Project (Chapter 3)
- Public Participation and Stakeholder Consultation (Chapter 4)
- Potential Impacts and Mitigation Measures (Chapter 5)
- Environmental and Social Management and Monitoring Plan (ESM&MP) (Chapter 6)
- Conclusion and Recommendations (Chapter 7)
- Reference
- 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 Details

The construction and equipping of the co-operative 40 feet containers for banana value addition will be based on the applicable building standards of Kenya and will ensure full compliance with all relevant authorities. The proposed project will involve fencing the site, construction and related activities, connecting facility to power, piped water and sanitation system.

### 2.3 Construction Activities

The construction activities will include the following: -

- Procurement of construction materials, equipment and machines from approved dealers.
- Transportation of construction materials and debris using trucks.
- Appropriate storage of the construction materials.
- Site works that include: site fencing and clearing of unwanted vegetation.
- Disposal of the resulting debris/waste materials after construction. All debris and excavated materials shall be dumped on sites approved by NEMA.
- Mechanical, electrical, civil, engineering and painting works; to be done by professionals.

### 2.4 Expected Outputs

On completion, the proposed project will comprise of an office, a shop and banana aggregation section. Table blow shows required structures, machines/equipment and other materials

**Table 1:** Required structures, machines/equipment and other materials

Proposed building	Purpose
Two 40 feet containers fully refurbished banana storage facility	Green banana storage,
One branded 40 feet container for chips and floor making	Floor making, packaging and storage
One 40 ft container for Tubular solar-Electric drier	Green banana drying for flour making.
One branded 20-foot container	Marketing operations and information system center
(a) Machines/Equipment	
Machine/Equipment	Units (No.)
Chips making equipment	1

Digital information management system	1
Digital Weighing machines	4
Complete Hammer Miller	1
Improvement of electricity supply from 2 phases to 3 phases	1
Sub total	
(b) Other materials	
Material/Service	<b>No.</b>
Crates	400
Packaging material	Cartoons/ bales/ gunny bags/ paper bag/packets/carrier bag
Firefighting equipment	1 set
Security system (alarm systems)	1 set
Personal protection equipment for staff	2 sets for 10 staff
Waste management system	1 set
Signage's on health and safety at work	1 set
Advertisement for tender	Varied
Staff training on processing and related good processing and handling hygiene	1 for 12 staff

## 2.5 Project Cost

The estimated total cost of the proposed project is **Kshs. 8,974,000** with **Kshs. 7,450,00** being sort from KCSAP and co-operative contribution of **Kshs. 1,524,000**.



## **CHAPTER THREE: LOCATION OF THE PROJECT**

### **3.1 Introduction**

This chapter describes the proposed project location/siting, proof of land ownership of the proposed project site, environmental sensitive area to be affected during implementation period, supportive environmental management infrastructure and conformity to land use plan or zonation.

### **3.2 Location of project**

The proposed project is located within Magutuni Market, Magutuni Sub-Location, Keria Location, Mwimbi Ward, Maara Sub-county of Tharaka-Nithi County. The GPS Co-ordinates and altitude at the proposed project site are S-0.226472 E37.734693 and 1202 Metres a.s.l respectively.



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

### **3.3 Proof of land ownership**

The proposed project will be constructed on a public plan which is under the trustee of the county government. *See annexed land ownership document (Annex No. 7).*

### **3.4 Any Environmental Sensitive area to be affected**

The study tried to establish if there is any environmental sensitive area to be affected during implementation. The proposed project involves construction and equipping containers for banana value addition and therefore there is no environmental sensitive area to be affected.

### **3.5 Supportive environmental management infrastructure**

#### **3.5.1 Transport**

The project area has good road networks which are maintained by Kenya National Highways Authority (KeHNA), Kenya Rural Roads Authority (KeRRA), Kenya Urban Roads Authority (KURA) and Tharaka – Nithi County Government. The project site can be accessed through Keria-Magutuni-Kathwana road. The accessibility of the project area will promote implementation of the proposed project because construction materials and workers will be conveniently transported to the site.

#### **3.5.2 Communication**

The project area is covered by mobile phone networks from Safaricom, Airtel, Yu and Telkom. This will promote communication during proposed project implementation.

#### **3.5.3 Sources of Energy**

The main sources of energy within the project area are firewood, paraffin and charcoal. There is usage of solar energy especially by health and education institutions to supplement HEP supplied by Kenya Power.

#### **3.5.4 Health facilities**

The area is served by health facilities such as hospitals, Health Centres, dispensaries and clinics located within the project area such as Magutuni level 4 hospital, Kaare Health Centre, Kieru Health Centre, Kiairugu Health Nguruki Health Centre, Iruma dispensary among others. Thus, minor health conditions and injuries during the project implementation would be adequately handled by these facilities.

#### **3.5.5 Education**

The project area has primary, secondary and tertiary institutions such as polytechnics. Some of learning institutions within the project area include Kiurani Boys Secondary School, Igwakiramba Secondary School, Maguma Secondary School, Kaare Day Secondary School, Iruma Girls Secondary School among others. These schools have greatly promoted education in the area and therefore the area has both skilled and semi-skilled labour force.

#### **3.3.6 Trade and Industry**

The project area has a number of market centres such as Magutuni and Kaare where the residents buy and sell their goods and services. The only town is Chogoria town where there are small and medium industries processing various types of materials/goods. Construction materials for the proposed project can be procured from Chuka town.

#### **3.3.7 Security**

The project area security is not bad because there are police stations and police post such as Chogoria police station and Magutuni police post with enough policemen to provide the requisite security. This is important because the project will require security during construction and operational phases.

### **3.3.7 Solid and Liquid waste management**

Solid wastes generated within the project area are both biodegradable and non-biodegradable. Biodegradable solid wastes such as food staff are compost and used as manure in the farmer while for the non-biodegradable solid wastes, they are burned/buried or reused. Liquid wastes are managed by channeling into septic tank/soak pit and later emptied by use of exhaustor when full for proper disposal.

### **3.6 Conformity to land use plan/ Zonation**

The proposed project involves construction and equipping banana value addition facility. The study has established that the community has been growing banana and holding meetings and training within the area and therefore the proposed project conforms to the land use plan/zonation of the area.

## **CHAPTER FOUR: PUBLIC PARTICIPATION AND STAKEHOLDERS CONSULTATION**

### **4.1 Introduction**

This chapter describes the processes and procedures followed during public participation and consultation to obtain the key issues of concern and impacts of the proposed project so that they can be integrated in this EIA Summary Project report.

### **4.2 Objectives of Community and Stakeholders Consultation**

The objectives of community and stakeholders entail:

- Provide the public (community members/neighbours to the proposed project) with a forum to air their views and concerns that they may have vis-à-vis the proposed project in relation to the Health Safety, Social and Environmental (HSSE) aspects.
- Analytically examine views and concerns from the potentially affected community and inform the public on the appropriate mitigation measures that will be undertaken during project implementation.
- To lay foundation for future negotiations on any issues that may arise so as to build consensus and reach a mutually acceptable resolution of issues.
- To ensure the public views and concerns are captured and incorporated in this ESIA Summary Project Report with appropriate mitigation measures.

### **4.3 Categorization of Community Participations and stakeholders**

Stakeholders' identification and categorization was based on the issues related to the proposed project scope of work, relevance and influence of the stakeholders during the project implementation throughout its life cycle. Relevance stakeholders were identified purposively based on the understanding of the proposed project and its influence on the project area.

**Table 2:** Categorization of Community Participation and Stakeholders

<b>STAKEHOLDER CONSULTED</b>	<b>RELEVANCE</b>
Community participants	Beneficiaries in Charge of project Proposed project neighbours because they are more likely to be affected by the project
National Environmental Management Authority (NEMA)	In charge of environment
Department of Agriculture	In charge of Agriculture
Department of Social Protection and Development	In charge of social matters
Ministry of Interior and Coordination of National Government	Representative of National Government



## **4.4 Methodology of Public Participation and Consultation**

### **4.4.1 Community Meetings**

The views and concerns of the public were gathered during public participation meetings organized by the cooperative management. The meeting organizer ensured that all Ministry of Health guidelines and protocols on prevention of spread of COVID-19 are strictly observed. The public participation meeting was held on 20<sup>th</sup> may, 2022 at Iruma Location Chief's camp where 48 individuals (25 Male and 23 Female) attended. During the meeting, the participants were given opportunity to express their views and concerns verbally through Focused Group Discussion (FDG). Additionally, some participants were provided with closed-headed questionnaires to give their anticipated positive and negative impacts of the proposed project and their option on how the positive impacts can be enhanced and the negative impacts can be mitigated and additional information about the proposed project. *See annexed samples of filled public participation questionnaires (Annex No. 6).*

### **4.4.2 Focused Group Discussion (FGD)**

As mentioned above, FGD were conducted during public participation meetings. In the proceeding of meetings, the participants were divided into three groups of ten individuals for smooth discussion. A Key informant questionnaire was given to each group to guide them in the discussion. Generally, they indicated that they support implementation of the proposed project because they anticipate it will have a lot of benefits such as creation of employment opportunities, increased production of bananas, improved prices of bananas, decreased post-harvest losses, improved livelihood of the community, improved health of the people and increased market for bananas. *See annexed minutes of public participation and attendance list (Annexes No. 3 and 4).*



**Plate 1:** Photo of public participation meeting

#### **4.4.3 Stakeholders Consultation**

Key informants were also administered to the government officers in the line ministries to enable them give in-depth understanding of the proposed project particularly the socio-economic and environmental impacts. *See annexed samples of filled key informants (Annex No. 5).*

##### **❖ Main Concerns/Issues raised**

During the stakeholders' consultation meetings, the participants were given an opportunity to give their view and concerns regarding the proposed project. The issues of concern that were raised during the meeting were post-harvest loss of produce due to lack of ready market, exploitation by middlemen, poor market prices and poor roads especially when it rains thus affecting transportation of the produce. It was agreed that the proposed project will address those issues apart from poor roads which should be addressed by the National and County Government.

#### **4.5 Proposed project acceptance**

There was no objection to the project. Members of the public were actually pleased with the fact that the proponent was intending to set up and equip banana value addition facility within the area. They emphasized that the proposed project will have immense benefits to the small holders' banana farmers in the area.

## **CHAPTER FIVE: ANTICIPATED IMPACTS AND MITIGATION MEASURES**

### **5.1 Introduction**

This section entails the environmental and socio-economic impacts during implementation of the proposed project (construction, operation and decommissioning phases) and the proposed mitigation measures.

### **5.2 Construction Phase**

#### **5.2.1 Environmental impacts**

##### **a) Negative Impacts**

###### **(i) Generation of solid waste**

Huge quantities of solid wastes are normally generated from construction activities.

###### **Mitigation measures:**

- ✓ The contractor should work hand in hand with private refuse handlers, NEMA and the County Government to facilitate sound waste handling and disposal from site.
- ✓ All solid wastes should be taken for disposal to the approved dumpsites and by licenced waste handlers.
- ✓ Practice ISWM. This is a comprehensive waste prevention, recycling, composting and disposal program. An effective ISWM system considers how to prevent, recycle and manage solid waste in ways that most effectively protect human health and the environment.
- ✓ The wastes should be properly segregated and separated to encourage recycling of some useful waste materials i.e. some demolished and excavated materials can be used as backfills.

###### **(i) Impact on Air Quality - Mainly dust and fumes from machinery**

The construction activities on the site will result to increased dust and gas emissions.

###### **Mitigation Measures:**

- ✓ Provide PPE such as nose masks to the affected workers on site during construction phase.
- ✓ Regular and prompt maintenance of construction machinery and equipment. This will minimize generation of noxious gases and other suspended particulate matter.
- ✓ Control over areas generating dust particles. Such areas should be regularly cleaned or sprinkled with water to reduce dust.
- ✓ Workers should be sensitized on the hazards that may be generated in such work environments.
- ✓ Workers should be encouraged to go for regular health check-ups to ascertain their health standards.

###### **(ii) Noise and Vibration**

Noise is unwanted/undesirable sound that can affect job performance, safety, and health. Psychological effects of noise include annoyance and disruption of concentration. Physical effects



include loss of hearing, pain, nausea, and interference with communications when the exposure is severe.

**Mitigation measures:**

- ✓ Construction work should be carried out during the specified time (i.e. from 0730 hrs to 1700hrs).
- ✓ Sensitize construction vehicles' drivers and machinery operators to switch off engines of vehicles and machinery when not in use.
- ✓ Workers should be provided with relevant PPE such as earmuffs and earplugs.
- ✓ Machineries should be maintained regularly to reduce noise resulting from friction.
- ✓ Manual labour is recommended in the construction phase, to reduce the noise emitted by construction machinery.
- ✓ Suppressors or silencers on equipment or noise shields; for instance, corrugated iron sheet structures.

**(iii) Soil erosion**

Comprehensive soil erosion measures are important during the construction and operation phases to minimized soil erosion.

**Mitigation measures:**

- ✓ Provision of soil conservation structures on erosion prone areas to control occurrence of soil movement.
- ✓ Avoid unnecessary movement of soil materials from the site.
- ✓ Good management of the runoff/storm water to reduce its impact on loose soil.
- ✓ Control construction activities especially during rainy/wet conditions.
- ✓ Landscaping; re-surface open areas on completion of the project and introduce appropriate vegetation where applicable.
- ✓ Provide appropriate drainage systems to manage surface runoff.

**(iv) Impacts on Land and Soil - Mainly oil and grease spills, excavation**

Though this may not be common at the site, it is wise to control and observe the little that could occur especially during maintenance of the involved machinery.

**Mitigation measures:**

- ✓ All construction machinery should be keenly observed not to leak oils on the ground. This can be effected through regular maintenance of the machinery.
- ✓ Proper storage, handling and disposal of oil and grease wastes.
- ✓ Any maintenance work should be carried out in a designated area (protected service bays) and where oils spills are completely restrained from reaching the ground. Such areas should be covered to avoid storm water from carrying away oils into the soil.

**(v) Impacts on Water Resources (Quality and Quantity)**

The increase in demand for water will occur during the construction phase since some of the activities will require use of large quantities of water.

**Mitigation measures:**

- ✓ Encourage water reuse/recycling during construction phase to minimize the amount of water used.
- ✓ Install water-conserving taps that turn-off automatically when water is not in use.
- ✓ Provide notices and information signs such as '*keep/leave the tap closed*'. This will awaken the civic consciousness with regard to water usage and management.
- ✓ Install master meter for measuring the amount of water used during construction phase.
- ✓ Ensuring the storage tank is well covered to avoid entry of contaminants.

**(vi) Impacts on Biodiversity**

The construction activities will result to negative impacts to the living organisms in the proposed project site and may even affect the surrounding area if the activities are not confined to the proposed project site.

**Mitigation measures:**

- ✓ Replanting/replacing the lost vegetation on the site after completion of construction activities. This can be undertaken during the landscaping of the site.
- ✓ Ensure that construction activities are confined within the proposed project site to avoid activities affecting the neighbouring area.

**5.2.2 Socio-Economic impacts**

**a) Positive impacts**

- (i) **Market for construction Materials:** This can be enhanced by ensuring that the construction materials are purchased from local suppliers.
- (ii) **Creation of employment opportunities:** This can be enhanced by ensuring that locals are given first priority when hiring workers.
- (iii) **Promote transport sector:** This can be enhanced by giving local truck owners first priority when hiring the trucks to deliver construction materials or order the local truck owners to deliver construction materials into the site.
- (iv) **Provision of government revenue:** This can be enhanced by ensuring that all the suppliers are tax compliant. If materials are procured from hardware, the supplier should obtain ETR.

**b) Negative impacts**

**(i) Occupational Health and Safety Hazards**

During construction the movement of materials may result in accidents if good supervision is not provided. Accidental cuts and bruises are common among workers as a result of the use of machinery and hand tools, an impact that needs due consideration.

**Mitigation Measures:**

- ✓ Provide appropriate personal protective equipment (PPE).
- ✓ Implement a programme of assessment of routine monitoring of worker health.
- ✓ Redesign manual processes and rotate work tasks to reduce heavy lifting/repetitive activities, and where possible install mechanical lifting aids.
- ✓ Train workers in general safety procedures including first aid and fire safety.

- ✓ Use designated routes for machinery and personnel
- ✓ Engineer out sharp edges and access to dangerous parts of machinery through a hierarchy of controls (permanently fixed physical barrier, interlocked physical barrier, physical barrier, presence sensing system).
- ✓ Ensure that there are provisions for reporting incidents, accidents and dangerous occurrences

**(ii) Increased Spread of COVID-19**

The construction activities will introduce new workers to the site increasing the risk of contracting and spreading COVID-19 from workers who could be infected with the virus. Due to the current spread of COVID-19 which has become a pandemic, if not well mitigated this impact may be high.

**Mitigation Measures:**

- ✓ 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 use of suitable hand sanitizers or handwashing with soap and water
- ✓ Strict and proper use of face masks throughout all working hours and public places.
- ✓ Implement Ministry of Health guidelines for staff safety and health, including daily temperature checks for everyone in the workplace
- ✓ Increase frequency of disinfecting commonly touched surfaces/objects

**(i) Public disturbance**

Construction disturbances result from noise, lighting etc. Such disturbances result to stress and other body reactions. There may occur such disturbances, which are likely to cause stress and other similar effects mostly during project implementation processes due to continued vibrations and noise generation.

**Mitigation measures:**

- ✓ Construction activities should be done only during the day.
- ✓ Erect billboards on the start of the project to prepare the people in the vicinity psychologically.
- ✓ The signs should indicate and inform the public when works starts and when it will be completed.

**(ii) Security**

Security is a necessity for any development since it ensures that all planned activities run smoothly without any loss of construction materials.

**Mitigation measures:**

- ✓ Provide lighting systems that illuminate the area well. Security alarms should be installed in strategic points all over the site area after completion of the project.
- ✓ Contractor should provide adequate security during the construction period when there is no work going on at the site. e.g. during the night and weekends
- ✓ Station some guards/watchman to man the provided steel gate and regulating movement in and out of the site.

### **(iii) Sexual Exploitation and Abuse (SEA)**

This impact refers to sexual exploitation and abuse committed by project staff against communities during construction phase, especially when workers are not aware or do not understand about prohibitions against SEA in the project.

#### **Mitigation Measures:**

- ✓ Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-EMMP.
- ✓ The SEA action plan will include how the project will ensure necessary steps are in place for:
  - **Prevention of SEA:** including COCs and ongoing sensitization of workers 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; workers' reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management;
  - **Engagement with the community:** including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights;
  - **Management and Coordination:** including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

### **(iv) Risk of increased incidences of HIV/AIDS and STIs**

The influx of people especially workers during construction stage may bring communicable diseases to the project area, including Sexually Transmitted Infections (STIs), or the incoming workers may be exposed to diseases to which they have low resistance.

#### **Mitigation measure:**

- ✓ Contractor to sensitize workers and community members on HIV/AIDS Awareness other communicable diseases to be instituted and implemented as part of the Contractor's Health and Safety Management Plan to be enforced by the Supervising Engineer.
- ✓ This will involve periodic HIV/AIDS and other communicable diseases Awareness workshops for Contractor's Staff.
- ✓ Controlled access to Contractor's workforce camps by outsiders.
- ✓ Contractor to provide standard quality condoms at the construction site during the construction period.

**(v) Gender Based violence and Sexual Harassment (GBV/SH)**

This impact is triggered during project construction phase when the Contractor fails to comply with the following provisions.

- Failure to protect Human Risk Areas Associated with, Disadvantaged Groups, Interfering with Participation Rights, and interfering with Labour Rights.
- Gender Inclusivity requirements in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule.

**Mitigation Measures:**

- ✓ Ensure clear human resources policy against sexual harassment that is aligned with national law.
- ✓ Integrate provisions related to sexual harassment in the workers COC.
- ✓ The Contractor shall require his workers, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse.
- ✓ The contractor will implement provisions that ensure that gender-based violence at the community level is not triggered by the project, including:
  - Effective and on-going community engagement and consultation, particularly with women and girls.
  - Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; 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.

**(vi) Child Abuse**

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

**Mitigation measures:**

- ✓ The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated by the Project including on SEA.
- ✓ All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behaviour
- ✓ Children under the age of 18 years should not be hired on site as provided by Child Rights Act (Amendment Bill) 2014.
- ✓ Wherever possible, ensure that another adult is present when working in the proximity of children.
- ✓ 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.

## **5.3 Operational and Maintenance Phase**

### **5.3.1 Environmental Impacts**

#### **a) Positive Impact**

- (i) **Environmental conservation:** This can be enhanced by planting indigenous trees and other vegetation suitable for the area with high survival rate should be planted during landscaping and regular maintenance and protection of the planted trees, flowers and other vegetation.

#### **b) Negative Impacts**

##### **(i) Generation of solid wastes**

During operational phase of the proposed project, there will be generation of solid waste especially banana peelings, papers and litters in the compound.

##### **Mitigation measures:**

- ✓ All solid wastes should be taken for disposal to the approved dumpsites and by licenced waste handlers.
- ✓ Practice ISWM. This is a comprehensive waste prevention, recycling, composting and disposal program. An effective ISWM system considers how to prevent, recycle and manage solid waste in ways that most effectively protect human health and the environment.
- ✓ The wastes should be properly segregated and separated to encourage recycling of some useful waste materials.

##### **(ii) Impacts of water resource (Quality and Quantity)**

During the operational and maintenance phase, there will be increased water demand for the general cleaning of the warehouse and processing of banana juice.

##### **Mitigation measures:**

- ✓ Dispose of waste in accordance to the provision of the Environmental Management and Co-ordination, (water quality) regulations 2006.
- ✓ Avoid entry of any contaminant into the water stored in the tanks.
- ✓ Proper management of water usage to avoid water wastage.
- ✓ Installation of master meter for measuring amount of water used.
- ✓ Install rain water harvesting structures to harvest rain water to supplement piped water.

##### **(iii) Increase in electricity power usage**

Increased use of electricity power for lighting and operating equipment. Strict measures need to be put into place to ensure that there are power conservation measures and prioritize use of solar energy as much as possible instead of hydroelectric power.

##### **Mitigation measures:**

- ✓ The proponent should ensure use of energy saving bulbs within the facility.
- ✓ The proponent should install a solar system to supplement hydroelectric power.
- ✓ Ensuring that there is maximum use of natural lighting in the warehouse.

- ✓ Ensuring that workers are sensitized on energy conservation such as putting off switch during the day.

#### **(iv) Noise pollution**

Comparatively low noise levels are expected in the area during the operation phase. Noise control measures should be implemented in the facility if the noise levels exceed 90dB (A) for a continuous 8 hours exposure. Moreover, protection against the effect of the noise exposure among the workers should be affected.

#### **Mitigation measures:**

- ✓ Operational work should be carried out during the specified time (i.e. from 0730 hrs to 1700hrs) noise generated during the day is not quite disturbing as compared to it being generated at night hours.
- ✓ Sensitize machinery operators to switch off engines of machines when not in use.
- ✓ Workers should be provided with relevant PPE such as earmuffs and earplugs; when operating noisy machinery and when in noisy environment.
- ✓ Machineries should be maintained regularly to reduce noise resulting from friction.
- ✓ Manual labour is recommended where possible during operation phase, to reduce the noise emitted by machinery.

#### **(v) Impact on Air Quality - Mainly dust and fumes from machinery**

Dust particles caused by vibrations of machines and vehicle movement suspends in the air.

#### **Mitigation Measures:**

- ✓ Provide PPE such as nose masks to the affected workers on site during operational phase.
- ✓ Regular and prompt maintenance of operational machinery and equipment. This will minimize generation of noxious gases and other suspended particulate matter.
- ✓ Control over areas generating dust particles. Such areas should be regularly cleaned or sprinkled with water to reduce dust.
- ✓ Workers should be encouraged to go for regular health check-ups to ascertain their health standards in relation to their working environment.

### **5.3.2 Socio-Economic impacts**

#### **a) Positive impacts**

- (i) Increased production bananas: This can be enhanced by building capacity of the farmers on bananas production and providing farm inputs to the farmers at a subsidized price.
- (ii) Food security: This can be enhanced by ensuring that the trained on banana farming and providing them with farm inputs at a subsidised price.
- (iii) Improved health of the people: This can be enhanced by ensuring that farmers/people are sensitised on proper diet.
- (iv) Increased market for bananas: This can be enhanced by ensuring that farmers are trained on marketing strategy. The strategy will enable them to get better market for their bananas.



- (v) Creation of employment opportunities: This can be enhanced by ensuring that the locals are given the first priority when employing workers.
- (vi) Decreased in crime rate: This can be enhanced by involving more youth provision of both skilled and unskilled labour because they are more energetic and they are many and integrating the issues and concerns of the youth to enhance social harmony.

## **b) Negative impacts**

### **(i) Risk of spread of COVID – 19**

There is risk of spread of COVID – 19 if the Ministry of Health guidelines and protocols on prevention of spread of COVID- 19 that entail wearing of facemasks, washing hands regularly, sanitizing and keeping social distance are not strictly adhered to by the workers and the visitors.

#### **Mitigation measures:**

- ✓ Sensitize workers on spread of COVID – 19.
- ✓ Ensuring that Ministry of Health guidelines and protocols on spread of COVID – 19 are strictly adhered to by the workers and visitors.

### **(ii) Risk of fire**

Fire risk is one of the anticipated negative impacts due to use of electricity power within the facility. Proper measures should be put into place to ensure that the fire risks are mitigated because in case of fire-outbreak, there will be serious property loss and even death.

#### **Mitigation measures:**

- ✓ Install firefighting equipment in the facility such as fire extinguisher.
- ✓ Label the fire assembly point within the compound.
- ✓ Ensuring firefighting equipment are regularly and promptly serviced.
- ✓ Training workers on firefighting skills to prepare them for use of the equipment in case fire outbreak.
- ✓ Label all points of ignition in the facility.

### **(iii) Occupation Health and Safety**

During operational and maintenance phase, there will be issues related to occupational health and safety of the workers. If the floors are not well cleaned and all obstacles removed there might be cases of injuries.

#### **Mitigation measures:**

- ✓ Capacity building and training of staff/workers with respect to Occupational Health, Safety and Environment.
- ✓ Provide safety measures for personnel, PPE - safety gear as per Health and Safety and Welfare – Special Provisions and Rules Regulations; conduct medical examination of workers as required by the Medical Examinations Rules of 2005 under the Occupational Safety and Health Act, 2007 for occupations covered under Schedule 8 of the act.
- ✓ A first aid kit should be provided within the site and should be fully equipped (as per the First Aid Rules, 1977) at all times and managed by qualified and trained first aider(s).

- ✓ The proponent should initiate and develop effective emergency response plans-ERPs to cater for various eventualities such as fire outbreaks and other incidences that are likely to occur.
- ✓ Proper documented possible action plans (ERPs) need to be put in place in case of any incidences occurring.
- ✓ Where the workforce exceeds 20, the proponent should facilitate formation of a Safety and Health Committee, in accordance with the Health and Safety Committees Rules, 2004.

#### **(iv) Security**

After construction, the facility will be installed with very expensive machines. All this things can be stolen and therefore requires security.

##### **Mitigation measures:**

- ✓ Providing lighting systems that illuminate the facility compound.
- ✓ Provide adequate security during the operational and maintenance phase when there is no work is going on in the facility.
- ✓ Employ watchman to man the facility both during the day and at night.

#### **(v) Gender disparities, Gender Based Violence/ Sexual Exploitation and Abuse**

Increased gender inequalities may be experienced especially women, vulnerable marginalized groups (VMGs) and youth.

##### **Mitigation measures:**

- ✓ Targeting and empowering women at household level to manage the bananas production at farm level.
- ✓ Increasing women and youth access to market and production information, joint financial services and mobile money services.
- ✓ Mobilize group of women and youth to adopt technology to ensure more accountability for management use, and transparent of benefits.
- ✓ Strengthen the role of women, improving their ability to enhance self –esteem, degree of integration, and position and increasing their democratic participation in the project management.
- ✓ Train women and youth in production issues.
- ✓ Highlight and value women’s contribution to their household’s economy.
- ✓ Sensitization of the community and workers on sexual issues.

#### **(vi) Community disputes, transparency and accountability issues during operation.**

Use of the warehouse for bananas value addition by the community may cause some conflicts especially if there is no proper management.

##### **Mitigation measures:**

- ✓ There should be proper Project Management Committee to guide on the use of the facility.
- ✓ There should be strict by- laws that will guide on use of the facility and conflict resolution.
- ✓ Build the capacity of the farmers on conflict resolution and management.

## **5.4 Decommissioning Phase**

This section provides information pertaining to the decommissioning of the project at the end of its life cycle and associated impacts, proposed measures to return the site as far as possible to its suitable state, or rehabilitation measures.

### **5.4.1 Environmental impacts and mitigation measures**

#### **a) Negative Impacts**

##### **(i) Generation of solid waste**

#### **Mitigation measure:**

- ✓ ISWM practice by the decommission personnel during decommissioning process.
- ✓ Sensitizing the decommissioning workers on proper disposal of solid wastes
- ✓ Proponent and decommissioning contractor to liaise with County Government and NEMA office for guidance on licenced waste collector and suitable site for dumping the wastes.

##### **(ii) Impact on Air Quality (Mainly from dust and fumes from decommissioning machinery)**

#### **Mitigation measures:**

- ✓ Ensure proper working conditions of exhaust systems of the vehicles/trucks and machinery involved in decommissioning of the facility.
- ✓ Water earth stockpiles and dusty surfaces to suppress the generated dust during demolishing of the facility.
- ✓ Provide work crew with PPE particularly dust masks.

##### **(iii) Noise and Vibrations**

#### **Mitigation measures:**

- ✓ Decommissioning work should be undertaken during the specific time of the day (i.e from 0730 hrs. to 1700hrs.).
- ✓ Sensitize the drivers of vehicles/trucks and operators' machinery involving in decommissioning process to switch engines off when not in use.
- ✓ Regular and prompt maintenance of vehicles and machinery involved in decommissioning process to reduce noise resulting from friction.
- ✓ Prioritise use of manual labour as much as possible as opposite to use of machinery.
- ✓ Install suppressors or silencers on equipment or noise shields for instance corrugated iron sheet structure before start of decommissioning process.

##### **(iv) Loss of vegetation**

There will be a lot of movement of demolishing machineries and trucks within the site. This at end results into loss of vegetation planted during operation and maintenance phase.

#### **Mitigation measures:**

- Re-planting of vegetation of affected areas after decommissioning.

## **5.4.2 Socio-Economic Impacts**

### **a) Positive Impacts**

- ✓ Reuse of reusable materials
- ✓ Creation of employment
- ✓ Promote transport sector
- ✓ Generate government revenue through taxation

### **b) Negative Impacts**

#### **(a) Impacts on Public health & occupational safety**

During decommissioning phase there will be increased dust, air and noise pollution. These are considered as negative impacts as they significantly lower the quality of the environment.

#### **Mitigation measures:**

- ✓ Capacity building and training of staff/workers with respect to Occupational Health, Safety and Environment. Provide safety measures for personnel, PPE - safety gear as per Health and Safety and Welfare – Special Provisions and Rules Regulations; conduct medical examination of workers as required by the Medical Examinations Rules of 2005.
- ✓ A first aid kit should be provided within the site and should be fully equipped (as per the First Aid Rules, 1977) at all times and managed by qualified and trained first aider(s).
- ✓ The contractor/proponent should initiate and develop effective emergency response plans- ERPs to cater for various eventualities such as fire outbreaks, oil spills and other incidences that are likely to occur.
- ✓ Proper documented possible action plans (ERPs) need to be put in place in case of any incidences occurring.
- ✓ Ensure that the site is accessed by the work crew or authorized personnel only.
- ✓ All project participants should have insurance and workmen's compensation.
- ✓ Where the workforce exceeds 20, the contractor should facilitate formation of a Safety and Health Committee, in accordance with the Health and Safety Committees Rules, 2004.

## **CHAPTER SIX: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (EMMP)**

### **6.1 Introduction**

The Environmental Social Management and Monitoring Plan (ESM&MP) has been developed to assist in prioritizing the key findings of ESIA, suggesting necessary mitigation measures and aspects for monitoring, allocating responsibilities, means of verification, giving monitoring indicators with recommended frequency of monitoring and the budget for mitigation measures.

Effective implementation of mitigation measures underscored in this document will ensure the appropriateness of the project. Commitments detailed in this project report are designed to avoid environmental damage in accordance with the Environmental Management and Coordination (Amendment) Act 2015 and Environmental (Impact Assessment and Audit) (Amendments) Regulations, 2019. The environment management enhancement procedures and techniques to conserve and improve the ecological and social environmental aspects should be incorporated in the ESM&MP as summarized.

**Table 3:** Environmental and Social Management and Monitoring Plan (ESM&MP)

Potential Environmental Impacts	Proposed Mitigation Measures	Responsible persons	Monitoring Indicators	Means of verification	Monitoring frequency	Est. Cost (Kshs.)
<i>a) Construction /Construction Phase</i>						
<b>Generation of solid waste</b>	<ul style="list-style-type: none"> <li>✓ All solid wastes should be taken for disposal to the approved dumpsites and by licenced waste handlers.</li> <li>✓ Practice ISWM.</li> <li>✓ Proper segregated and separated to encourage recycling.</li> </ul>	Contractor	No. of litter bins Presence of waste disposal site No. of training of ISWM	Purchase order/Receipts Photos Reports List	Monthly	10,000
<b>Impact on Air Quality - Mainly dust and fumes from machinery</b>	<ul style="list-style-type: none"> <li>✓ Provide PPEs such as nose masks to the workers.</li> <li>✓ Regular and prompt maintenance of construction machinery and equipment.</li> <li>✓ Regularly cleaning or sprinkling water on dusty surfaces.</li> <li>✓ Sensitize workers on the hazards that may be generated in such work environments.</li> <li>✓ Encourage to go for regular health check-ups to ascertain their health standards.</li> </ul>	Contractor	No. of workers using dust masks. No. of vehicles/trucks and machinery serviced. Presence of water sprayed earth stockpiles and dusty surfaces No. of workers gone for check-ups	Purchase order/receipts  Service records of vehicles and machinery  Photos	Monthly	20 000

<b>Noise and Vibrations</b>	<ul style="list-style-type: none"> <li>✓ Construction work should be carried out during the specified time (i.e. from 0730 hrs to 1700hrs).</li> <li>✓ Vehicles and machinery engines should be switched off when not in use.</li> <li>✓ Provide PPEs such as earmuffs and earplugs.</li> <li>✓ Regular maintenance of vehicles and machinery.</li> <li>✓ Use manual labour is as much as possible.</li> </ul>	Contractor	<p>No. of workers using PPEs.</p> <p>No. of vehicles and machinery serviced</p> <p>No. of workers providing manual labour</p>	<p>Purchase order/receipts.</p> <p>Service records of vehicles and machinery.</p> <p>Site visit reports.</p> <p>Photos</p>	Monthly	30,000
<b>Soil erosion</b>	<ul style="list-style-type: none"> <li>✓ Provision of soil conservation structures on erosion prone areas of the site.</li> <li>✓ Avoid unnecessary movement of soil materials from the site.</li> <li>✓ Good management of the runoff/storm water.</li> <li>✓ Control construction activities especially during rainy/wet conditions.</li> <li>✓ Landscaping; re-surface open areas.</li> <li>✓ Provide appropriate drainage systems to manage surface runoff.</li> </ul>	Contractor	<p>No. of soil conservation structures in place</p> <p>Presence of appropriate drainage system</p> <p>Presence of landscape/re-surface areas</p>	<p>Site visit photos.</p> <p>Site report</p>	Monthly	20,000
<b>Impacts on Land and Soil - Mainly</b>	<ul style="list-style-type: none"> <li>✓ Machinery should be keenly observed not to leak oils/grease on the ground.</li> </ul>	Contractor	Properly stored oil and oil waste.	Site reports	Monthly	30,000



<b>oil and grease spills, excavation</b>	<ul style="list-style-type: none"> <li>✓ Proper storage, handling and disposal of oil and grease wastes.</li> <li>✓ Any maintenance of construction works machinery should be carried out in the contractor's yard off site.</li> </ul>		<p>Presence of well managed excavation</p> <p>Oil and grease spills on the ground</p>	Photos		
<b>Spread of diseases</b>	<ul style="list-style-type: none"> <li>✓ Creating awareness on proper sanitation, personal hygiene and Ministry of Health guidelines and protocols on prevention of spread of Covid-19.</li> <li>✓ Treat affected local and migrant workers.</li> <li>✓ Provide personal hygiene facilities in good condition.</li> <li>✓ Educate and sensitize workers and the local communities on STIs.</li> <li>✓ Institute HIV/AIDS awareness and prevention campaign amongst workers for the duration of facility construction period.</li> </ul>	Contractor	<p>No. of awareness and sensitization meetings.</p> <p>No. of hand washings facilities provided</p>	<p>Meeting reports</p> <p>Photos</p>	Monthly	20,000
<b>Impacts on Water Resources (Quality and Quantity)</b>	<ul style="list-style-type: none"> <li>✓ Encourage water reuse/recycling.</li> <li>✓ Rain water harvesting.</li> <li>✓ Install water-conserving taps that turn-off automatically when water is not in use.</li> </ul>	<p>Proponent</p> <p>Contractor</p>	No. of master meters installed	Water quality analysis report	Quarterly	20,000

	<ul style="list-style-type: none"> <li>✓ Provide notices and information signs such as 'keep/leave the tap closed'.</li> <li>✓ Install master meter for measuring the amount of water used.</li> <li>✓ Ensuring the storage tank is well covered to avoid entry of contaminants.</li> </ul>		<p>No. of water harvesting facilities such as tanks</p> <p>Water conservation strategy in place</p>	<p>Site reports</p> <p>Purchase orders/receipts</p> <p>Photos</p>		
<b>Occupational Health and Safety (OHS)</b>	<ul style="list-style-type: none"> <li>✓ Capacity building and training of workers with respect to OHS and environment.</li> <li>✓ Provide a fully equipped first aid kit within the site.</li> <li>✓ Train work crew on first aid.</li> <li>✓ Initiate and develop ERPs</li> <li>✓ Proper documentation of ERPs.</li> <li>✓ Ensure only work crew or authorized persons access the site.</li> <li>✓ Formation of Safety and Health Committee where the workforce exceed 20.</li> <li>✓ Strict adherence to Ministry of Health guidelines and protocols of prevention of spread of COVID-19.</li> </ul>	Contractor	<p>No. of workers using PPEs.</p> <p>No. of fully equipped first aid kit.</p> <p>No. of workers trained on first aid.</p> <p>Availability of ERPs</p>	<p>Record of accidents/injuries recorded.</p> <p>Purchase orders/Receipts</p> <p>Site reports</p> <p>Photos</p>	Monthly	50 000

<b>Impacts on Biodiversity</b>	<ul style="list-style-type: none"> <li>✓ Replant/replace the lost vegetation.</li> <li>✓ Ensure that construction activities are confined within the site.</li> </ul>	contractor	Presence of planted vegetation	Photos	Quarterly	30,000
<b>Occupational Health and Safety Hazards</b>	<ul style="list-style-type: none"> <li>✓ Provide appropriate PPE.</li> <li>✓ Implement a programme of assessment of routine monitoring of worker health.</li> <li>✓ Redesign manual processes and rotate work tasks to reduce heavy lifting/repetitive activities, and where possible install mechanical lifting aids.</li> <li>✓ Train workers in general safety procedures including first aid and fire safety.</li> <li>✓ Engineer out sharp edges and access to dangerous parts of machinery through a hierarchy of controls.</li> <li>✓ Ensure that there are provisions for reporting incidents, accidents and dangerous occurrences</li> </ul>	Contractor	No. of PPE provided  Presence of a programme of routine monitoring of workers health  No. of trainings conducted	Purchase orders/receipt  Training reports photos	Monthly	50,000
<b>Security</b>	<ul style="list-style-type: none"> <li>✓ Provide lighting systems that illuminate project site.</li> <li>✓ Provide adequate security when there is no work going on at the site.</li> <li>✓ Station some watchman to man the provided steel gate</li> </ul>	contractor	No. of Floodlights installed  No. of watchmen employed	Purchase orders/receipts  Photos	Monthly	30,000

	and regulating movement in and out of the site.					
<b>Public disturbance</b>	<ul style="list-style-type: none"> <li>✓ Construction activities should be done only during the day.</li> <li>✓ Erect billboards on the start of the project to prepare the people in the vicinity psychologically.</li> </ul>	contractor	No. of billboards	Photos	Monthly	20,000
<b>Risk of increased HIV/AIDs &amp; STI</b>	<ul style="list-style-type: none"> <li>✓ Sensitize workers and community members on HIV/AIDs.</li> <li>✓ HIV/AIDs and other communicable diseases awareness Workshops.</li> <li>✓ Controlled access to Contractor's workforce camps.</li> <li>✓ Provide standard quality condoms the site.</li> </ul>	contractor	No. of sensitization and awareness meetings  No. of packets of quality condoms provided	Meeting reports  Photos	Monthly	20,000
<b>Sexual Exploitation and Abuse by project workers against community members</b>	<ul style="list-style-type: none"> <li>✓ Develop and implement a SEA action plan.</li> <li>✓ Engagement with the community: including development of confidential community-based complaints mechanisms.</li> <li>✓ Management and Coordination: including integration of SEA in job descriptions, employments</li> </ul>	Proponent	No. of SEA action plan developed  Community engagement strategy in place	Copy of SEA action plan  A copy of community engagement strategy	Quarterly	40,000

	contracts, and performance appraisal systems.					
<b>Gender Based Violence and Sexual Harassment (GBV/SHA)</b>	<ul style="list-style-type: none"> <li>✓ Ensure clear human resources policy against SH.</li> <li>✓ Integrating provisions related to SH in the workers CoC.</li> <li>✓ Requiring workers, sub-contractors, sub-consultants, and any personnel to individually sign and comply with a CoC with specific provisions on protection from SEA.</li> <li>✓ Implement provisions that ensure GBV,</li> <li>✓ Review of specific sub-project components that are known to heighten GBV risk at the community level.</li> <li>✓ Develop specific plan for mitigating these known risks.</li> <li>✓ Ensuring adequate referral mechanisms are in place if a case of GBV.</li> </ul>	Proponent	<p>No of Plans developed and implemented</p> <p>Availability of referral mechanism</p> <p>No. of contracts signed with Code of Conduct</p>	<p>Copy of plans</p> <p>Copy of contract signed</p> <p>Photos</p>	Monthly	50,000
<b>Child Abuse</b>	<ul style="list-style-type: none"> <li>✓ Develop and implement a Children Protection Strategy.</li> <li>✓ All staff must sign, committing themselves towards protecting children.</li> </ul>	Contractor	Presence of children protection strategy	<p>Copy of the strategy</p> <p>Copies of signed documents</p>	Monthly	20,000

	✓ Children under the age of 18 years should not be hired on site as provided by Child Rights Act (Amendment Bill) 2014.		Presence of signed documents by staff			
<b>Operational and Maintenance Phase</b>						
<b>Generation of Solid waste</b>	<ul style="list-style-type: none"> <li>✓ Training workers on ISWM.</li> <li>✓ Provision of solid waste collection facilities (waste bins).</li> <li>✓ Sensitization of workers on proper disposal of solid wastes.</li> </ul>	Proponent	No. of litter bins Licensed waste handler in place No. of training of ISWM	Purchase order/Receipts Photos Training report	Quarterly	50,000
<b>Risk of spread of COVID-19</b>	<ul style="list-style-type: none"> <li>✓ Sensitize the workers on spread of COVID- 19.</li> <li>✓ Ensuring that Ministry of Health guidelines and protocols on prevention of spread of COVID -19 are strictly adhered to.</li> </ul>	Proponent	No. of workers using face masks No. of hand washing facilities	Purchase order/Receipts. Photos	Monthly	50,000
<b>Noise pollution</b>	<ul style="list-style-type: none"> <li>✓ Work should be carried out during the specified time (i.e. from 0730 hrs to 1700hrs).</li> <li>✓ Sensitize machinery operators to switch off engines of machines when not in use.</li> <li>✓ Workers should be provided PPEs</li> </ul>	Proponent	No. of workers using PPEs. No. of machinery serviced Presence of suppressors or silencers on equipment or noise shields.	Purchase order/receipts · Service records of machinery. Reports. Photos	Quarterly	70,000

	<ul style="list-style-type: none"> <li>✓ Machineries should be maintained regularly</li> <li>✓ Manual labour is recommended where possible.</li> </ul>		No. of workers providing manual labour			
<b>Impacts on Air- Mainly from dust and fumes from machinery</b>	<ul style="list-style-type: none"> <li>✓ Provide PPEs affected workers.</li> <li>✓ Regular and prompt maintenance machinery and equipment.</li> <li>✓ Regularly clean or sprinkle with dusty surfaces.</li> <li>✓ Workers should be encouraged to go for regular health check-up.</li> </ul>	Proponent	No. of workers using PPEs.  No. of machinery serviced	Purchase order/receipts  Service records of machinery.  Reports.  Photos	Quarterly	50,000
<b>Impacts of water resource (Quality and Quantity)</b>	<ul style="list-style-type: none"> <li>✓ Dispose waste water in accordance to the provisions of the Environmental Management and Co-ordination, (water quality) regulations 2006..</li> <li>✓ Install rainwater harvesting structures to harvest rain water.</li> </ul>	Proponent	No. of master meters installed	Water quality analysis report  Purchase orders/receipts  Photos	Periodically	50,000
<b>Increase in electricity power usage</b>	<ul style="list-style-type: none"> <li>✓ Ensure use of energy saving bulbs.</li> <li>✓ Installation of solar systems.</li> <li>✓ Maximum use of natural lighting.</li> <li>✓ Ensure workers are sensitized on energy conservation.</li> </ul>	Proponent	No. of energy saving bulbs installed.  No. of trains of workers	Purchase orders/Receipts  Training reports and	Quarterly	40,000



				attendance list Photos		
<b>Fire risks</b>	<ul style="list-style-type: none"> <li>✓ Install firefighting equipment.</li> <li>✓ Label the fire assembly point.</li> <li>✓ Label the fire exit points.</li> <li>✓ Ensure firefighting equipment are regularly serviced.</li> <li>✓ Train workers on firefighting skills.</li> <li>✓ Label all points of ignition in the facility.</li> </ul>	Proponent	No. of serviced firefighting equipment.  No. of trained workers on firefighting skills.	Purchase orders/ Receipts.  Training reports & attendance list  Photos	Quarterly	50,000
<b>Security</b>	<ul style="list-style-type: none"> <li>✓ Provide lighting systems</li> <li>✓ Employ watchman to man the facility.</li> </ul>	Proponent	No. of floodlights installed.  No. of watchman employed	Purchase order/receipts  Photos	Monthly	30,000
<b>Occupational health and Safety</b>	<ul style="list-style-type: none"> <li>✓ Capacity building and training of staff/workers with respect to Occupational Health, Safety and Environment.</li> <li>✓ Provide safety measures for personnel, PPE - safety gear.</li> <li>✓ Provide a fully equipped first aid kit.</li> </ul>	Proponent	No. of trainings on OHS & E  No. of workers using PPEs.  No. of first aid kits in the facility.	Purchase orders/Receipts  Reports of trainings  Attendance lists  Photos	Quarterly	50,000

	<ul style="list-style-type: none"> <li>✓ Initiate and develop effective emergency respond plan(ERP)</li> <li>✓ Facilitate formation of a Safety and Health Committee where the workforce exceeds 20.</li> </ul>					
<b>Gender disparities, GBV/Sexual Exploitation and Abuse</b>	<ul style="list-style-type: none"> <li>✓ Targeting and empowering women at household level.</li> <li>✓ Increasing women's and youth access to market.</li> <li>✓ Mobilize group of women and youth to adopt technology</li> <li>✓ Strengthen the role of women, improving their ability to enhance self – esteem, degree</li> <li>✓ Train women and youth in production issues.</li> <li>✓ Highlight and value women's contribution to their household's economy.</li> <li>✓ Sensitization of the community and workers on sexual issues.</li> </ul>	Proponent	<p>No. of trainings</p> <p>No. of women and youth accessing market, production information, joint financial services and mobile money</p> <p>No of groups and youth adopting technology</p>	<p>Training reports</p> <p>Photos</p>	Quarterly	50,000
<b>Community disputes, transparency and accountability issues</b>	<ul style="list-style-type: none"> <li>✓ There should be PMC will guide on the use of the facility.</li> <li>✓ There should be strict by-laws that will guide on use of the facility and conflict resolution.</li> </ul>	Proponent	<p>Availability of by laws</p> <p>No. of trainings</p>	<p>Copy of by law</p> <p>Training reports</p>	Quarterly	40,000

	✓ Build capacity of farmers on conflict resolution and management.			Photos		
<b>b) Decommissioning Phase</b>						
<b>Generation of solid waste</b>	<ul style="list-style-type: none"> <li>✓ Integrated Solid Waste Management (ISWM) practice.</li> <li>✓ Sensitizing the decommissioning workers on proper disposal of solid wastes.</li> <li>✓ Liaising with the CGTN and NEMA office for guidance on licensed waste collectors and suitable dumping sites wastes.</li> </ul>	Contractor	No. of ISWM strategy in place. No. Sensitization meetings held. No. of meetings	Reports of the meetings and attendance list Receipts of machinery and equipment service Photos	Throughout decommissioning phase.	To be determined
<b>Impact on Air Quality (Mainly dust and fumes from decommissioning machinery)</b>	<ul style="list-style-type: none"> <li>✓ Ensure proper working conditions of exhaust systems.</li> <li>✓ Water earth stockpiles and dusty surfaces.</li> <li>✓ Provide work crew with dust masks.</li> </ul>	Contractor	No. of workers using dust marks. No. of vehicles/trucks and machinery serviced.	Purchase order/receipts Photos	Throughout Decommissioning phase.	To be determined
<b>Noise and Vibrations</b>	<ul style="list-style-type: none"> <li>✓ Decommissioning work should be carried out during the specified time (i.e. from 0730 hrs to 1700hrs).</li> <li>✓ Vehicles and machinery engines should be switched off when not in use.</li> </ul>	Contractor	No. of workers using PPEs.	Purchase order/receipts . Service records of	Throughout Decommissioning phase	To be determined

	<ul style="list-style-type: none"> <li>✓ Provide PPEs such as earmuffs and earplugs.</li> <li>✓ Regular maintenance of vehicles and machinery.</li> <li>✓ Use manual labour is as much as possible.</li> </ul>		<p>No. of vehicles and machinery serviced</p> <p>No. of workers providing manual labour</p>	<p>vehicles and machinery.</p> <p>Site visit reports.</p> <p>Photos</p>		
<b>Loss of vegetation</b>	<ul style="list-style-type: none"> <li>✓ Re-planting of vegetation of affected areas.</li> </ul>	Contractor	No. of trees/shrubs planted.	Photos	decommissioning phase	To be determined
<b>Impacts on Public health &amp; occupational safety</b>	<ul style="list-style-type: none"> <li>✓ Provide proper protective gears to all workers.</li> <li>✓ Ensure that there are no spills of petroleum, no smoking, no source of ignition and proper use of warning signs in risky places.</li> <li>✓ Provide first aid kit at site.</li> <li>✓ Workers should be trained on first aid.</li> <li>✓ Ensure the availability of Emergency contacts.</li> <li>✓ Emergency plan should be communicated and well understood.</li> <li>✓ Warning signs properly displayed</li> </ul>	Contractor	<p>No. of workers using PPEs.</p> <p>No. of fully equipped first aid kit.</p> <p>No. of workers trained on first aid.</p>	<p>Record of accidents/injuries recorded.</p> <p>Purchase orders/Receipts</p> <p>Site reports</p> <p>Photos</p>	Throughout decommissioning phase	To be determined
<b>TOTAL</b>						<b>990,000</b>

## **CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATION**

### **7.1 Findings and Recommendations**

#### **7.1.1 Assessment findings**

The assessment described in the report identified the below listed main findings;

- The Environmental Screening undertaken for the project revealed that the investment will result in low impact on both social and biological environment. The level of ESIA required is at Summary Project Report which should be approved at the NEMA office.
- The overall primary objective of the proposed project is to increase bananas production and ultimately improve the livelihood of the community within the project area.
- The community have been growing bananas and selling them and therefore the study has found out that the proposed project conforms to the land use plan of the area.

#### **7.1.2 Assessment Recommendation**

The project is recommended for implementation provided the mitigation measures identified in the study for the potential negative impacts are implemented, the recommendations will also form part of NEMA approval that will be issued for the project.

It is thus the experts' recommendation that the proposed project be approved and approval letter be issued to enable implementation of the project subject to the outlined mitigations being adhered to.

## REFERENCES

- 1) Government of Kenya (2003): Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations, Government Printers, Nairobi, Kenya.
- 2) Government of Kenya (2005): Noise Prevention and Control Rules, Legal Notice no. 24, Government Printers, Nairobi, Kenya
- 3) Government of Kenya (2006): Kenya gazette supplement number 68, Environmental Management and Coordination (Water Quality) Regulations, Government printer, Nairobi.
- 4) Government of Kenya (2006): Kenya gazette supplement number 69, Environmental Management and Coordination (Waste management) Regulations, Government printer, Nairobi, Kenya.
- 5) Government of Kenya (2007): Resources Management Rules, 2007, Government printer, Nairobi Water.
- 6) Government of Kenya (2007): The Occupational Safety and Health Act, Government Printers, Nairobi, Kenya.
- 7) Government of Kenya (2007): The Work Injuries Benefit Act, Government Printers, Nairobi, Kenya.
- 8) Government of Kenya (2009): Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, Government printer, Nairobi, Kenya.
- 9) Government of Kenya (2011): The National Construction Authority Act, Government Printers, Nairobi, Kenya.
- 10) Government of Kenya (2013): The Forest Conservation and Management Act, 2016. Government Printer, Nairobi, Kenya.
- 11) Government of Kenya (2013): The Wildlife Conservation and Management Act, 2013. Government Printer, Nairobi, Kenya.
- 12) Government of Kenya (2014): Kenya gazette supplement number 41, Environmental Management and Coordination Act (Air Quality) Regulations, Government printer, Nairobi.
- 13) Government of Kenya (2016): Kenya gazette supplement number 148, The Community Land Act, Government Printers, Nairobi, Kenya.
- 14) Government of Kenya (2019): Kenya gazette supplement number 62. Environmental Impact Assessment and Audit Regulations, Government Printers, Nairobi, Kenya.
- 15) Government of Kenya, Kenya gazette supplement Acts, Penal Code Act (Cap.63) Government Printers, Nairobi, Kenya.
- 16) Government of Kenya, Kenya gazette supplement Acts, Public Health Act (Cap. 242) Government printer, Nairobi, Kenya.
- 17) Government of Kenya, Kenya gazette supplement number 129, Physical and Land Use Planning Act, 2019 Government Printers, Nairobi, Kenya.
- 18) IFC (2007) Environmental, Health and Safety (EHS) Guidelines. World Bank Group.
- 19) Meru County Integrated Development Plan (2018-2022)

## **ANNEXES**

- 1) Sample chance finds procedures
- 2) EIA/EA Experts' practicing licences
- 3) Minutes of Public Participation.
- 4) Attendance list of public participants.
- 5) Sample of filled Key informant
- 6) Sample of filled questionnaires
- 7) Land ownership document (Chief's consent letter)
- 8) Certificate of registration
- 9) KRA pin
- 10) Screening checklist
- 11) Submission form (form 2)



**Annex 1: Sample find procedure**

Chance find procedures are an integral part of the project EMMP and civil works contracts. The following is proposed in this regard: If the Contractor discovers archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Ministry of State for National Heritage and Culture take over;
- Notify the supervisor, Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Ministry of State for National Heritage and Culture immediately (within 24 hours or less);

Responsible local authorities and the Ministry of State for National Heritage and Culture would then be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the National Museums of Kenya. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, namely the aesthetic, historic, scientific or research, social and economic values. Decisions on how to handle the find shall be taken by the responsible authorities and the Ministry of State for National Heritage and Culture. This could include changes in the layout (such as when finding irremovable remains of cultural or archaeological importance) conservation, preservation, restoration and salvage. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities.

Construction work may resume only after permission is given from the responsible local authorities or the Ministry of State for National Heritage and Culture concerning safeguard of the heritage.

## Annex 2: EIA/EA Experts licences

FORM 7 (r.15(2))

  
**nema**  
mazingira yetu | uhai wetu | wajibu wetu

**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/17153  
Application Reference No: NEMA/EIA/EL/22182

M/S **Dickson Kimathi Muthaura**  
(individual or firm) of address  
P.O. Box 2269-60200 MERU

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**  
registration number **6235**

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

Issued Date: **4/6/2022**                      Expiry Date: **12/31/2022**

Signature.....

  
(Seal)  
**Director General**  
**The National Environment Management Authority**

### **Annex 3: Minutes of public participation meeting**

#### **MINUTES OF THE PUBLIC PARTICIPATION MEETING**

**Minutes of the consultative public participation meeting held on 20<sup>th</sup> May, 2022 with the stakeholders at Iruma Location Chief's camp.**

##### **Agenda:**

1. Preliminary
2. Presentation of the project concept
3. Open session
4. Adjournment of the meeting

##### **Agenda 1: Preliminary**

The meeting was called to order by co-operative Secretary of Mwimbi Muringa Irrigation Co-operative Society Limited at 11.00am. Thereafter, he requested one of the participants to give a word of prayer and then after, he welcomed the participants requested them do self – introduction. Thereafter, he welcomed the chairman to give the agenda of the meeting.

##### **Agenda 2: Presentation of the Project Concept**

The EIA/EA Lead Expert Mr. Dickson Kimathi addressed the members and explained to them in details the main objective of the meeting which was to inform them about the proposed project and where undertaking Environmental and Social Impact Assessment of the proposed project was necessary before commencement of the implementation of the project. He added that stakeholders' consultation is very important in the process of undertaking ESIA because it's at the point that they are given an opportunity to give the views and concerns regarding the proposed project so that they are integrated in the report. Finally, he highlighted specific objectives that were geared towards:

- Providing opportunity for the stakeholders to give their views and concerns regarding the proposed project.
- Obtain the history of the Co-operative and its operating currently.
- Improving transparency and accountability of decision making.
- Ensure that important impacts are not overlooked while maximizing the positive impacts.
- Facilitate the evaluation of the technology, procedures and processes to be used, in the implementation of the proposed project, mitigation measures and trade – off (if any)
- Increase public confidence in the EIA process.

##### **Agenda 3: Open Session**

It was unanimously agreed that the proposed project has no major issues since it will involve setting up the banana value addition facility. It was agreed that the proposed project will several benefits that included: creation of employment opportunities, increased production of bananas, improved prices of bananas, decreased post-harvest losses, improved livelihood of the community, improved health of

the people (nutrition), increased market for bananas and increased community resilience to effects of climate change among others.

The issues of concern that raised and suggested mitigation measures during stakeholders' meeting were post-harvest loss of produce due to lack of ready market, exploitation by middlemen, poor market prices and poor roads especially when it rains thus affecting transportation of the produce. It was agreed that the proposed project will address those issues apart from poor roads which should be addressed by the National and County Government.


#### **Suggestions and recommendations**

The participants discussed and made the following recommendations:

- Mr. Munene welcomed the participants in the area in his capacity as co-operative chairman. He said that all the community members are aware of the proposed project and that they are very much willing and ready to cooperative with the project implementers whenever called upon. He added that the project will significantly reduce post-harvest losses of banana.
- Esther Murugi said that she is delighted that they have finally gotten a financial who is going to support them in value addition of banana. She added that banana is one of the major crop that they grow in the area but they have being experiencing problem of exploitation by middlemen and she is happy that the project is going to resolve that problem.
- Mwenda Muiandi begun by thanking the ESIA consultant for inviting them to come and give their views and concerns regarding the proposed project. He said that the proposed project has no objection in the community and they are anxiously waiting to commence value addition of banana in the area. He added that the proposed project will have immense benefits to the farmers in the area.
- Agnes Kagedo confirmed what Mwenda had said that the proposed project will have immense benefits to the farmers because of improved prices and market for banana. She thanked the financier for agreeing to support them and said that he was sure that the community will not let them down.
- Lena Kanini said that she totally supports the implementation of the proposed project because it will enable the farmers to increase their produce and access good market for banana.
- Lydia Karigu said that the proposed project should ensure that all community members involved during implementation to avoid conflicts and that the cooperative management should give first priority to the locals when hiring workers.
- Hellen Kathure thanked consultant and cooperative management for inviting them to give their views and concerning regarding the proposed project. She requested the consultant to ensure their views and concerns are incorporated in the report. She also confirmed that the proposed project will have a lot of benefits in the community.
- Festus Muriuki thanked the EIA consultant for agreeing to conduct ESIA study for the proposed project. He pointed out that the proposed project will have immense benefits to the farmers and community in general and therefore requested the participants to ensure that the communities are fully behind the project.

**Agenda 4 Adjournment of the meeting**

There being no any other business a vote of thanks was made and a closing prayer done by a community member after which meeting officially ended at 2.00 pm.

Minutes prepared by PICKSON KIMANI.....Signature.....

Date.....27th May 2022.....



**Annex 4:** Attendance list of public participation meeting





**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY**




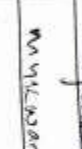
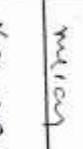
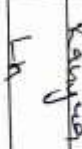

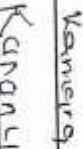
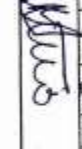


**PUBLIC PARTICIPATION**

**ATTENDANCE LIST**

Date: 20/5/2022

**PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT FOR MWIMBI MURINGA BANANA IRRIGATION CO-OPERATIVE SOCIETY LTD**

No.	Name	Gender	ID no.	Phone Number	Signature
1.	Christine Muguna Zokario	F	22701339	0724046365	
2.	Teresia MUKWANGIYA	F		07811008582	MUKWANGIYA
3.	Lena Karini Kirini	F	13253107	0740314685	KARINI
4.	Debra Karani	F	7411261	0726787188	
5.	Lorasia Muturi mbar	F			
6.	Florence Ihiga	F	07454526	0714369156	Florence
7.	Lynia Karigu Asford	F	50894481	0726993943	Lynia
8.	Winiya Karina Kirini	F	8871738	0790190539	Karira
9.	Hellen Karure	F	04610912	0719279199	
10.	Fatus Karuki Zokario	M	20234335	08498582	Karuki
11.	Salesio Mungambi	M	0006951	0790399440	

No.	Name	Gender	ID no.	Phone Number	Signature
12.	MUSYEREA GITHUWA 'K'	M	02710586	0723738281	
13.	Mwenda Mwangi	M	4492221	"	
14.	Dunstan K. Mburia	M	0264391	0727705500	
15.	Agnes Kagendo	F	1157973	"	
16.	Expenditure mukwanya mbar	F	13253292	0720964207	
17.	Mwacy Mwanoni Ireni	F	7461711	0716340162	
18.	Estherine Kangya Ndakani	F	2485637	0717138410	
19.	Lena Akiret	F	22076325	0716 061566	
20.	Esther Mwangi	F	"	0719 772914	
21.	Margaret Kamara	F	0477639	0719 421 085	
22.	Eloay Kangny	F	25370885	0728145798	
23.	Eliphaz Mwangi	M	4294821	0721 264 890	
24.					
25.					



# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDY















## PUBLIC PARTICIPATION

### ATTENDANCE LIST

Date: 20/05/2022

PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT FOR MWIMBI MURINGA BANANA IRRIGATION CO-OPERATIVE SOCIETY LTD

No.	Name	Gender	ID no.	Phone Number	Signature
1.	GABRIEL MUTORI	M	745390	072269780	
2.	JOHN MUKHEWA RANGATA	M	0665782	072117577	(Sim)
3.	DAVID MUGENDO MUKINDA	M	20734218	0735253351	
4.	GILBERTS GACUGI	F	25432502	0727436829	Gacugi
5.	MOSES KIRIMI	M	<del>0748269051</del>	071076716	
6.	NANCY MUTOROGA	F	2303457	0722760745	
7.	Japhet Kibara	M	2490885	0727244152	Japhet Kibara
8.	KARU GREGORY KUKU	M	27112093	0702017265	K.G.K
9.	MR. GREGORY MURENDO	M	0321766	0721282100	
10.	Lucy Kigauji	F	20345027	074228925	
11.	Jackline Duvuta	F	2330266	0702327289	ee

No.	Name	Gender	ID no.	Phone Number	Signature
12.	Mwanga Glaus	F	4027238	07243717411	
13.	Mwanga Wambui	F	34994423	0704509057	
14.	Brian Gitang	M	38865407	0743994914	
15.	John Muvone	M	26342981	0713400491	
16.	James Mwangini	M	28020966	0717743609	
17.	Martin Mubunga	M	27012237	0717200600	
18.	Charles Mwangi	M	5079385	0723827644	
19.	Philip Gitang	M	5088432	072316913	
20.	John Gitang	M	10148253	NA	
21.	Martin Muvone	M	3324911	072378224	
22.	Agnes Mutha	M	2462343	0750819424	
23.	Julius Mbari	M	5089923	072343424	
24.	BETHSABA KATHUNI	F	27103228	072009934	
25.	James Bura	M	0800447	09271406196	

Annex 5: Sample of filled Key informants

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

National Environmental Management Authority (NEMA) under Environmental Management and Co-ordination (Amendment) Act, 2015 section 58 requires that an environmental Impact Assessment involving public participation be undertaken to enable it make an informed decision in either approving and or recommending remedial measures prior to carrying out such development project.

As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: SAMUEL MUTUMA
2. Mobile No. 0722943650
3. Organization/Institution Department of Agriculture
4. Are you aware of the proposed project? Yes
5. Are there similar projects in the area? No
6. If yes in Q5 above, how many? N/A
7. Do you support the implementation of the proposed project? Yes
8. If yes in Q7 above, do you anticipate positive impacts from the proposed project? Yes
9. If yes in Q8 above, what **positive impacts** do you anticipate?
  - ① Well coordinated marketing of bananas.
  - ② Increased incomes from sale of bananas.
  - ③ Increased employment both directly and indirectly.
  - ④ Improved livelihoods and livelihood diversification.
  - ⑤ Increased production - quantity and quality.
  - ⑥ Reduced postharvest losses.
10. Do you anticipate any negative impacts from implementation of the proposed project? Yes
11. If yes in Q10 above, what **negative impacts** do you anticipate?
  - ① A little loss of vegetation during setting up of the project.

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

② Increased waste from bananas

12. In your own opinion, how can the negative impacts that you have stated above be mitigated?

① Tree planting by banana farmers

② Training on making of Compost Inmanure from banana

13. Additional remarks/comments

- The project is highly supported and has minimal and manageable negative impacts to the environment

Signature..... *Bungeti* ..... Date..... 20-05-2022 .....

Position..... *Chief Agricultural officer* .....

*Thank you for your cooperation!*



## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: ROSE M NJERU
2. Mobile No. 0722967264
3. Organization/Institution..... LWES DACK
4. Are you aware of the proposed project?..... YES
5. Are there similar projects in the area?..... NO
6. If yes in Q5 above, how many?..... N/A
7. Do you support the implementation of the proposed project?..... YES
8. If yes in Q7 above, do you anticipate positive impacts from the proposed project?..... YES
9. If yes in Q8 above, what **positive impacts** do you anticipate?

1- longer shelf life of the bananas  
thus more and wider market (banana flour)  
2- Better bargaining power of their produce due  
to aggregation, thus more incomes which  
results to poverty reduction.

10. Do you anticipate any negative impacts from implementation of the proposed project?..... yes
11. If yes in Q10 above, what **negative impacts** do you anticipate?

Brothers interference - for quick  
returns (cash)

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

12. In your own opinion, how can the negative impacts that you have stated above be mitigated?

- The co-operative to train the members on importance of large volume marketing of produce which give more neto returns

13. Additional remarks/comments

- with increased incomes in the family more student will get better education which inturn will improve economic status of the area

Signature..... *Radi* ..... Date..... 23/5/2022

Position..... sub county officer (Animal Health) .....

*Thank you for your cooperation!*

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: Nicholas M. MOKAYA
2. Mobile No. 0723 866041
3. Organization/Institution... DEPT OF AGRICULTURE TNEC
4. Are you aware of the proposed project? YES
5. Are there similar projects in the area? No
6. If yes in Q5 above, how many? NA
7. Do you support the implementation of the proposed project? YES
8. If yes in Q7 above, do you anticipate positive impacts from the proposed project? YES
9. If yes in Q8 above, what positive impacts do you anticipate?
  1. Increased incomes for Households
  2. Employment creation
  3. Job involvement and agriculture
  4. Reduced post Harvest losses
10. Do you anticipate any negative impacts from implementation of the proposed project? YES
11. If yes in Q10 above, what negative impacts do you anticipate?
  1. There may be loss of jobs and livelihood
  2. There may be increased income



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT  
PUBLIC PARTICIPATION KEY INFORMANT

12. In your own opinion, how can the negative impacts that you have stated above be mitigated?

• Proper Community mobilization and  
• Continuous awareness creation &  
• Capacity building

13. Additional remarks/comments

A viable project that will  
lead to food security and promotion of  
industrialization

Signature.....

Date.....

27.05.2022

Position.....

DIKEER AGRICULTURE

Thank you for your cooperation!

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: FADLIS K. KIDKO
2. Mobile No. 0722-379068
3. Organization/Institution DEPT OF LIVESTOCK T.N.C.C
4. Are you aware of the proposed project? YES
5. Are there similar projects in the area? NO
6. If yes in Q5 above, how many? N/A
7. Do you support the implementation of the proposed project? YES
8. If yes in Q7 above, do you anticipate positive impacts from the proposed project? YES
9. If yes in Q8 above, what **positive impacts** do you anticipate?
  - Increased value of banana products
  - Increased market for Bananas
  - Diversification of Products from Bananas
  - Increased family incomes
10. Do you anticipate any negative impacts from implementation of the proposed project? NO
11. If yes in Q10 above, what **negative impacts** do you anticipate?
  - N/A

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT  
PUBLIC PARTICIPATION KEY INFORMANT

12. In your own opinion, how can the negative impacts that you have stated above be mitigated?

NA

13. Additional remarks/comments

Integration of livestock and crop enterprises

Signature



Date

27/05/2022

Position

CDLP

*Thank you for your cooperation!*

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION KEY INFORMANT

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: JOSHUA KIRIA
2. Mobile No. 0702 322030
3. Organization/Institution FISHFARM DEVELOPMENT.
4. Are you aware of the proposed project? YES
5. Are there similar projects in the area? NOT AWARE
6. If yes in Q5 above, how many? .....
7. Do you support the implementation of the proposed project? YES
8. If yes in Q7 above, do you anticipate positive impacts from the proposed project? YES
9. If yes in Q8 above, what **positive impacts** do you anticipate?
  - Diversity of Banana products
  - Increased income to the ppl
  - Enhanced Livelihood of the Community
  - Attraction of other forms of investment
  - For Enhanced food & Nutrition security
10. Do you anticipate any negative impacts from implementation of the proposed project? YES BUT FEW
11. If yes in Q10 above, what **negative impacts** do you anticipate?
  - the banana diseases if not May crop in if no proper mitigation is place.

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT  
PUBLIC PARTICIPATION KEY INFORMANT

Social Conflict especially if water source diminishes.

12. In your own opinion, how can the negative impacts that you have stated above be mitigated?

Proper sensitization, Awareness Creation  
and Public Education

13. Additional remarks/comments

Let the community own up the  
project as their own and support  
it fully.

Signature.....



Date.....

20/5/22

Position.....

County Director.

Thank you for your cooperation!



Annex 6: Sample of filled Public participation questionnaire

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

PUBLIC PARTICIPATION QUESTIONNAIRE

**PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT**

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

National Environmental Management Authority (NEMA) under Environmental Management and Co-ordination (Amendment) Act, 2015 section 58 requires that an environmental Impact Assessment involving public participation be undertaken to enable it make an informed decision in either approving and or/ recommending remedial measures prior to carrying out such development project.

As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: MUHAMMAD KAMARA
2. Gender: Male ( ) Female ( ☒ )
3. Age: 18-35 years ( ) 35 years and above ( ☒ )
4. Mobile No. 0719421085
5. Relationship with the proposed project: Neighbour ( ) Beneficiary ( ☒ )  
Non-beneficiary ( )  
Others (specify).....
6. Area of residence.....
7. Are you aware of the proposed project?  
Yes ( ☒ ) No ( )
8. If yes in Q7 above, do you expect any **negative impact** as a result of implementation of the proposed project?  
Yes ( ) No ( ☒ )
9. If yes in Q8 above, briefly explain .....
10. In your own option, how can the negative impacts that you have stated above be mitigated? .....

*Thank you for your cooperation!*

11. What **positive impacts** that will result from the implementation of the proposed project?

(Tick appropriately)

- i) Increased production of banana ( ☒ )
- ii) Improved market for banana ( ☒ )
- iii) Increased prices of banana ( ☒ )
- iv) Decreased post-harvest loss ( ☒ )
- v) Improve economic status/livelihood of the people ( ☒ )
- vi) Improved peoples' health/nutrition ( ☒ )
- vii) Provision of job opportunities ( ☒ )
- viii) Address the problem of exploitation by middlemen ( ☒ )
- ix) Promote livelihood diversification ( ☒ )
- x) Others (Specify).....

11. Do you have any objection to the proposed project?

Yes ☐

No ☒

12. If yes in Q11 above, state the reason.....

13. Additional remarks.....

Signature.....

Date.....

20/5/2022

*Thank you for your cooperation!*

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION QUESTIONNAIRE

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: ELPHYS MUKAMBI
2. Gender: Male ( ) Female ( )
3. Age: 18-35 years ( ) 35 years and above (✓)
4. Mobile No. 071264850
5. Relationship with the proposed project: Neighbour ( ) Beneficiary (✓)  
Non-beneficiary ( )  
Others (specify).....
6. Area of residence..... Mwimbi
7. Are you aware of the proposed project?  
Yes (✓) No ( )
8. If yes in Q7 above, do you expect any negative impact as a result of implementation of the proposed project?  
Yes ( ) No (✓)
9. If yes in Q8 above, briefly explain .....
10. In your own option, how can the negative impacts that you have stated above be mitigated? .....

*Thank you for your cooperation!*



11. What positive impacts that will result from the implementation of the proposed project?

(Tick appropriately)

- i) Increased production of banana (✓)
- ii) Improved market for banana (✓)
- iii) Increased prices of banana (✓)
- iv) Decreased post-harvest loss (✓)
- v) Improve economic status/livelihood of the people (✓)
- vi) Improved peoples' health/nutrition (✓)
- vii) Provision of job opportunities (✓)
- viii) Address the problem of exploitation by middlemen (✓)
- ix) Promote livelihood diversification (✓)
- x) Others (Specify).....

11. Do you have any objection to the proposed project?

Yes ☐

No ☒

12. If yes in Q11 above, state the reason.....

13. Additional remarks.....

Signature.....



Date.....

20/5/2022

Thank you for your cooperation!

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION QUESTIONNAIRE

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: Esther Muringi
2. Gender: Male ( ) Female ( ) ☒
3. Age: 18-35 years ( ) 35 years and above ( ) ☒
4. Mobile No. 0715772914
5. Relationship with the proposed project: Neighbour ( ) Beneficiary ( ☒ )  
Non-beneficiary ( )  
Others (specify).....
6. Area of residence..... Muringi
7. Are you aware of the proposed project?  
Yes ( ☒ ) No ( )
8. If yes in Q7 above, do you expect any negative impact as a result of implementation of the proposed project?  
Yes ( ) No ( ☒ )
9. If yes in Q8 above, briefly explain .....
10. In your own option, how can the negative impacts that you have stated above be mitigated? .....

*Thank you for your cooperation!*

11. What **positive impacts** that will result from the implementation of the proposed project?

(Tick appropriately)

- i) Increased production of banana ( ☒ )
- ii) Improved market for banana ( ☒ )
- iii) Increased prices of banana ( ☒ )
- iv) Decreased post-harvest loss ( ☒ )
- v) Improve economic status/livelihood of the people ( ☒ )
- vi) Improved peoples' health/nutrition ( ☒ )
- vii) Provision of job opportunities ( ☒ )
- viii) Address the problem of exploitation by middlemen ( ☒ )
- ix) Promote livelihood diversification ( ☒ )
- x) Others (Specify).....

11. Do you have any objection to the proposed project?

Yes ☐ No ☒

12. If yes in Q11 above, state the reason.....

13. Additional remarks.....

Signature..... Date. 20/5/2022

Thank you for your cooperation!

## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION QUESTIONNAIRE

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: EXPENDITURE MUKWANYAGA MABE
2. Gender: Male ( ) Female (☒)
3. Age: 18-35 years ( ) 35 years and above (☒)
4. Mobile No. 0729964202
5. Relationship with the proposed project: Neighbour ( ) Beneficiary (☒)  
Non-beneficiary ( )  
Others (specify).....
6. Area of residence. KAURO
7. Are you aware of the proposed project?  
Yes (☒) No ( )
8. If yes in Q7 above, do you expect any negative impact as a result of implementation of the proposed project?  
Yes ( ) No (☒)
9. If yes in Q8 above, briefly explain .....
10. In your own option, how can the negative impacts that you have stated above be mitigated?  
.....

*Thank you for your cooperation!*

11. What **positive impacts** that will result from the implementation of the proposed project?

(Tick appropriately)

- i) Increased production of banana (✓)
- ii) Improved market for banana (✓)
- iii) Increased prices of banana (✓)
- iv) Decreased post-harvest loss (✓)
- v) Improve economic status/livelihood of the people (✓)
- vi) Improved peoples' health/nutrition (✓)
- vii) Provision of job opportunities (✓)
- viii) Address the problem of exploitation by middlemen (✓)
- ix) Promote livelihood diversification (✓)
- x) Others (Specify).....

11. Do you have any objection to the proposed project?

Yes ☐

No ☒

12. If yes in Q11 above, state the reason.....

13. Additional remarks.....

Signature Mukwanga

Date 20/5/22

*Thank you for your cooperation!*



## ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

### PUBLIC PARTICIPATION QUESTIONNAIRE

#### PROJECT TITLE: PROPOSED BANANA VALUE ADDITION AND MARKETING PROJECT

Mwimbi Muringa Banana Irrigation Co-operative Society Ltd of P.O Box 90 – 60401, Chogoria with the support from Kenya Climate Smart Agriculture Project (KCSAP) intends to set up a banana value addition and marketing facility within Mwimbi ward, Tharaka-Nithi County.

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As a member of the local community/project neighbourhood, we kindly request for your comments in relation to the proposed project.

Please note that your response will be treated with the confidentiality it deserves.

1. Name: MURRAY MURUGA IRERI
2. Gender: Male ( ) Female ( ☒ )
3. Age: 18-35 years ( ) 35 years and above ( ☒ )
4. Mobile No. 0711 340 162
5. Relationship with the proposed project: Neighbour ( ) Beneficiary ( ☒ )  
Non-beneficiary ( )  
Others (specify).....
6. Area of residence KIRIKURU
7. Are you aware of the proposed project?  
Yes ( ☒ ) No ( )
8. If yes in Q7 above, do you expect any negative impact as a result of implementation of the proposed project?  
Yes ( ☒ ) No ( )
9. If yes in Q8 above, briefly explain .....
10. In your own option, how can the negative impacts that you have stated above be mitigated?  
.....

*Thank you for your cooperation!*



11. What **positive impacts** that will result from the implementation of the proposed project?

(Tick appropriately)

- i) Increased production of banana (✓)
- ii) Improved market for banana (✓)
- iii) Increased prices of banana (✓)
- iv) Decreased post-harvest loss (✓)
- v) Improve economic status/livelihood of the people (✓)
- vi) Improved peoples' health/nutrition (✓)
- vii) Provision of job opportunities (✓)
- viii) Address the problem of exploitation by middlemen (✓)
- ix) Promote livelihood diversification (✓)
- x) Others (Specify).....

11. Do you have any objection to the proposed project?

Yes ☐

No ☒

12. If yes in Q11 above, state the reason.....

13. Additional remarks.....

Signature *[Signature]*

Date *20/5/22*

*Thank you for your cooperation!*

Annex 7: Land ownership document

SHEET 11, 12, 14 & 15

Form LRA-85

REPUBLIC OF KENYA

(r.84(3))

THE LAND REGISTRATION ACT  
THE LAND REGISTRATION (GENERAL) REGULATIONS, 2017  
CERTIFICATE OF OFFICIAL SEARCH  
TITLE NO. KIENJA/E-MURUNJI/704  
SEARCH NO. 90

On the 11th day of MAY 2022 the following were the subsisting entries on the register of the above-mentioned title:

**Part A — Property Section (easements, etc.)** RESERVED FOR MURUNJI AGRICULTURAL FARM.

Nature of title ABSOLUTE

Approximate area (0.35 HA) ZERO DECIMAL THREE NINE HECTARES

**Part B — Proprietorship Section**

Name and address of proprietor 1. 25-10-56 THAKKA NITHI COUNTY GOVERNMENT

Inhibitions, cautions and restrictions /

**Part C — Encumbrances Section (leases, charges, etc.)**

The following applications are pending:

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

(d) \_\_\_\_\_

The following certified copies are attached as requested:

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

(d) \_\_\_\_\_

Date 11th day MAY 2022

Signed by the Registrar

Name: \_\_\_\_\_

Signature: M. K. Mue 376

Seal: \_\_\_\_\_

**COUNTY GOVERNMENT OF THARAKA NITHI**



**OFFICE OF THE CHIEF OFFICER  
LANDS AND PHYSICAL PLANNING**

Telephone:  
Email: [lpptechnicalteam@gmail.com](mailto:lpptechnicalteam@gmail.com)  
Website: [www.tharakanithicounty.go.ke](http://www.tharakanithicounty.go.ke)

P. O. BOX 10-60406  
KATHWANA

**OUR REF:** TNC/CECM/LPP/LANDS/36

**Date:** 8<sup>th</sup> June, 2022

The Chairman  
Mwimbi Muringa Banana Farmers' Cooperative Society Limited  
P.O. Box 90 - 60401

**CHOGORIA**

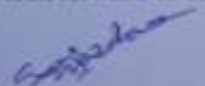
**RE: LAND ALLOCATION TO MWIMBI MURINGA BANANA FARMERS COOPERATIVE SOCIETY LIMITED.**

Reference is made to your request dated 20<sup>th</sup> May, 2022 for land allocation to Mwimbi Muringa Banana Farmers' Cooperative Society Limited to set up banana aggregation and value addition centre at Magutuni. The County Government of Tharaka Nithi through stakeholders has identified and allocated 0.21 Ha of Kiera/E.Magutuni/704 to the Cooperative Society.

This was as a result of unanimous agreement to provide land for the project during a stakeholders' meeting held on 13<sup>th</sup> April 2011 and 17<sup>th</sup> May 2022 at Muringa Banana Head Office, Magutuni with representation from community leaders, public members, official from county government and national government.

The County Government of Tharaka Nithi has no objection to use the parcel of land as indicated above. The Department of Lands and Physical Planning through National Land Commission has initiated the process of sub-division, change of reservations and processing of ownership documents for the parcel to accommodate the new users.

We look forward to smooth implementation of the project.

  
Eng. Peter Kimathi Njeru  
Chief Officer  
Lands and Physical Planning  
Tharaka Nithi County.



CC:

The County Project Coordinator  
Kenya Climate Smart Agriculture Project  
Tharaka Nithi County

**MINUTES FOR MWIMBI, MURINGA BANANA CO-OPERATIVE SOCIETY 1<sup>ST</sup> AGM  
AT MAGUTUNI OFFICE GROUND ON 08/10/2019.**

**MEMBERS PRESENT**

See back page

**AGENDAS**

- Prayers
- Introduction
- Minutes from previous meeting
- Chairman's report
- Budget
- Appointment of Co-op Bankers
- Auditors
- Maximum borrowing powers
- Indemnity
- Elections
- AOB

**MINUTES 1/10/2019 PRAYERS**

The interim chairman called the meeting to order and the prayers was conducted by pastor Titus Kinyuru.

**MINUTES 2/10/2019 INTRODUCTION**

The Interim Chairman took his time to introduce his interim executive members and the visitors who were present.

He also asked members to introduce themselves which they did nicely.

**MINUTES 3/10/2019 MINUTES OF THE PREVIOUS MEETING**

In a meeting held by a joint Muringa Banana Irrigation scheme committee members and shareholders at Magutuni water office on 11<sup>th</sup> July 2019 at 2:00pm, the Chairman of phase 3 Mr Danstan Mburia who was leading the meeting took his time to explain to committee members and shareholders how Muringa banana came about.

He also explained how the leaders from the 3phases sat down and discussed the formation of co-operative society.

In that meeting the committee members and shareholders discussed the matter further and come to the conclusion that there was need to have a co-operative society.

It was in this meeting that the interim executive was elected.

The committee members and shareholders pushed for the registration of the co-operative society which they have succeeded and have the certificate.

After registration 1<sup>st</sup> general meeting was called to pass the agendas.



In this 1<sup>st</sup> general meeting the co-operative society formation was agreed by all members who were there. It was proposed by Pst Titus Kinyuru and seconded by Muthomi.

#### **MINUTES 4/10/2019 CHAIRMAN'S REPORT**

In the chairman's report he took his time to welcome guests and farmers who attended the 1<sup>st</sup> general meeting.

He also gave a brief history of Muringa Banana projects and its goals. In the Chairman's report he gave the challenges of the areas covered by the co-operative society.

To meet some of the challenges he talked of how the co-op society will organise and promote the welfare and economic interest of its members through improved marketing, production processing, grading, packaging and transportation.

He also talked of how our co-op society will join other co-operatives or national and apex organisation for the best welfare of the co-operative members. He finished by urging the farmers to join the co-operative and thanked them for attendance.

Chairman report was proposed by John Kiberenge and seconded by Eliphas Murungu.

#### **MINUTES 5/ 10/2019 BUDGET**

In the budget the economic appraisal was read which represented the co-operative budget. The budget was proposed by Justus Muriuki and seconded by Beatrice Mukwamuga.

#### **MINUTES 6/10/2019 APPOINTMENT OF CO-OP BANKERS**

Members who were there agreed on co-operative bank and it was proposed by Elias Gitonga and seconded by Nancy Mutembel.

#### **MINUTES 7/10/2019 AUDITORS**

All members who were there agreed on Government auditors. This was proposed by John Mbabu Njau and seconded by Timothy Riungu.

#### **MINUTES 8/10/2019 MAXIMUM BORROWING POWERS**

Members agreed the maximum borrowing powers to be 100 Million. This was proposed by Danstan Mburia and seconded by Benson Kaaria.

#### **MINUTES 9/10/2019 IDEMNITY**

1 Million was unanimously agreed

#### **MINUTES 10/10/2019 ELECTIONS**

It was agreed that the nine committee members to come from 3 phases of irrigation and 1 supervisory committee from each phase

This mean each phase to elect 3 committee members and 1 supervisory committee members and the election was as follows

**Phase 1**

Genesio Miriti  
Gabriel Mutwiri  
Mary Muthoni

**Supervisory**

Elias Gitonga

**Phase 2**

Eliphas Mugambi  
Eliphas Murungi  
Jonnes Munene

**Supervisory**

Eric Mutembel

**Phase 3**

Lilian Achieng  
Danstan Mburia  
Justus Kinyua Kabil

**Supervisory**

John Kiberenge

The presiding officer Mr Mwaniki the SCCO asked them to go and elect the bearers and they elected the following office bearers. For management committee were;

Chairman – Genesio Miriti  
Secretary – Eliphas Mugambi  
Treasurer – Lilian Achieng  
V/chairman – Jonnes Munene

The rest five are committee members.

For supervisory the election was as follows

Chairman – John Kiberenge  
Secretary – Elias Gitonga  
Member – Eric Mutembel

For management committee 1/3 was done and SCCO explained to members that only chairman and the V/chairman will take 3yrs in their reign without being affected by 1/3 and 1 member who will pick 3 years, this means some will be re-elected after 1yrs other two years and 3yrs for chairman, vice chairman and 1 member who picked 3yrs.



This is what came about after 1/3.

- Genesio Miriti - 3yrs
- Eliphas Mugambi - 2yrs
- Lillian Achieng - 1yr
- Jonnes Munene - 3yrs
- Danstan Mburia - 1yr
- Justus Kinyua Kabii - 2yrs
- Gabriel Mutwiri - 1 yr
- Eliphas Murungi - 3yrs
- Mary Muthoni - 2yrs

Supervisory committee will be re-elected after 1 year.

**MINUTES 11/10/2019 AOB**

In the AOB mass recruitment was suggested. Delegated elections was also suggested in the AOB.

**MINUTES 12/10/2019 CLOSING**

The meeting ended with a word of prayer said by John Kiberenge.

**MWIMBI MURINGA BANANA CO-OP SOCIETY  
COMMITTEE PLANNING MEETING ON 10/1/2022 AT CO-OPERATIVE  
OFFICE AT 10:00AM.**

**PRESENT MEMBER**

1. LILIAN ACHIENG
2. DANSTAN MBURIA
3. JONNES MUNENE
4. AMBUTU K. ALEX
5. ELIPHAS MUGAMBI
6. ELIAS GITONGA
7. GABRIEL MUTWIRI
8. ROSEBETH KARAUKI
9. MARY MUTHONI
10. MGDALINE KANYUA
11. JACOB NKUNJA
12. DAVID GITONGA
13. MUENDI BURURIA
14. ELIPHAS MURUNGI

**AGENDA**

1. PRAYERS
2. MUGOYA UPDATE
3. AGM
4. ACCOUNT OPENING

*Confirmed as true copy  
of the meeting deliberations  
Signed  
17/1/2022.*

**DISTRICT CO-OPERATIVE OFFICER  
KARURA DISTRICT**

**MIN 01/10/1/2021 : PRAYERS**

When all was seated, the meeting started with a word of prayer from Danstan Mburia.

**MIN 02/10/1/2022 : MUGOYA UPDATE**

The Chairman welcomed Mr. Bururia who started by briefing the committee members about Mugoya Company. He told the members that he had done business with Mugoya and it was a good business.

He briefed the type of the produce Mugoya Company deals with which include:-

- Sweet potatoes
- Pawpaw

- Water melon
- Bananas
- Arrow roots

Mr. Bururia told coop members that the Mugoya Company agreed to meet the management committee of the co-operative and discuss about the business and to visit some farms before taking the produce.

Mr. Danstan Mburia agreed with Mr. Bururia about the Company and told members that it's a well paying company and will not fail us.

Management committee discussed about the company and the produce they deals with and agreed to invite him and show him some farm which have been targeted.

The targeted farms are:-

Mr. Gitonga farm – Iruma – Nyoro

Mr alex farm – Kanini – Kiganda

Mr. kavua farm – Igandegi – sweet bananas

Management committee agreed to start with bananas before supplying him with other produce.

#### **MIN 03/10/1/2022 : AGM**

The Chairman asked committee members how the publicity has been done and they told him that it has not been done effectively. Management committee agreed to look for a private publisher to do the publicity before the date of AGM which was 12/1/2022. This was manned by Alex Mpungu.

Committee members agreed to hire 3 men to clear the compound of the office where AGM will take place. They were paid Ksh. 1200/= and were supervised by Danstan Mburia.

To the same AGM committee members agreed to hire a tent at Ksh. 1500/= and this was supervised by Lilian. To the same members agreed to hire 200chairs at Ksh. 2000/= and was to be done by Magdalene.

On the same day registration will be done at the gate. The already registered members will be checked from the register and those who will not be registered members were allowed to enter attend the AGM.

For refreshment committee members agreed to buy breads and sodas for the members.

The summative budget for the AGM was as follows:-

- Breads 500 @ 25 each – 12,500
- Sodas – 20 crates @ 800 each – 16,000

Water – 2 trays @ 330 – 660  
Tissues – 6 @ 25 – 150  
Sanitizers + handwash – 300  
Tent – 1500  
Chairs – 2000  
Public address – 3500  
Publicity – 7000  
Security – 2000  
Cleaning – 300  
Water – 1240  
Transport – 1000

**MIN 05/10/1/2022 : ACCOUNT OPENING**

The Chairman reminded the committee members the need to have a cooperative account. Committee members discussed about the same with the conclusion that we open an account with cooperative Bank as per our by-laws with officials below as signatories

1. Jonnes Munene Mputhia – Chairman
2. Eliphas M. Muthamia – Secretary
3. Lilian Achieng - Treasurer

**MIN 06/10/1/2022 AOB**

There was no business to be discussed.

**MIN 07/10/1/2022 : CLOSING PRAYER**

The meeting ended with a word of prayer from Rosebeth Karauki.

Compiled by ..... *Eliphas Muthamia* .....  
Secretary

Approved by ..... *Jonnes Munene Mputhia* .....  
Chairman



**MURINGA BANANA COOPERATIVE SOCIETY OFFICIAL MEETING  
HELD ON 16/01/2021 AT OUR OFFICE MAGUTUNI.**

**PRESENT MEMBERS**

- |                    |   |             |
|--------------------|---|-------------|
| 1. DASTAN MBURIA   | - | MEMBER      |
| 2. ELIPHAS MUGAMBI | - | SECRETARY   |
| 3. BURURIA MUGENDI | - | MEMBER      |
| 4. JOHN KIBERENGE  | - | MEMBER      |
| 5. JONNES MUNENE   | - | V. CHAIRMAN |
| 6. GABRIEL MUTWIRI | - | MEMBER      |
| 7. ELIAS GITONGA   | - | MEMBER      |
| 8. ERIC MUTEMBEI   | - | MEMBER      |
| 9. LILIAN ACHIENG  | - | TREASURER   |

**MEMBERS WITH APOLOGY**

1. GENESIO MIRITI
2. ELIPHAS MURUNGI

**AGENDA**

1. Prayers
2. Introduction
3. Report for Matuu
4. Nkunjia's Report
5. Accounts operations
6. Way forward
7. AOB

**MIN 1/12021 : PRAYERS**

Opening prayers were said by John Kiberenge

**MIN 2/2021 : INTRODUCTION**

The chairman led members in Self introduction. He welcomed the present members and thanked them for attending the meeting. He noted that the notice was short but was necessary.

**MIN 3/2021 : MATUU REPORT**

5 members visited Mugoya grocery and vegetable farm in Matuu in Machakos County. The team met the owner Abdi Sidi who welcomed them very well. The farm had coffee and kept livestock. It used biogas power generation.

It had planted all types of produce eg tomatoes, spinach, sukuma, pilipili and many others but specialized in horticultural produce.

We discussed with this farmer the produce he will buy from us pawpaw, Israel bananas, sweet bananas and Kampala from our farmers. He also advised us to plant sweet potatoes, arrowroots and passion fruits. The owner explained that Covid-19 had brought down the market greatly and would come to meet farmers in the farms to agree on purchase of produce from the co-operative.

#### **MIN 4/2021 : NKUNJA REPORT**

The KSAPP officer explained that the project had moved to enterprise level and they identified our co-op as enterprise level possible beneficiary

He advised to apply for Ksh. 500,000/=. Mobilization financing and make a follow-up.

#### **MIN 5/2021 : ACCOUNTS OPERATIONS**

Members agreed to maintain the existing account No. 01120979118200 with co-operative bank Chogoria and open a KSAPP project account with Co-operative Bank – Chuka Branch.

The signatories were;

Jones Munene – Chairman

Lilian Achieng – Treasurer

Eliphas Mugambi - Secretary. *Any two to sign - All payment to be confirmed by the KSAPP coordinator.*

#### **MIN 6/2021: PEPPER FARMING**

There was an ongoing project of pepper farming. This project is mobilised by Magdaline. It was noted that Kiraithe as lead farmers there are 3 types of pepper were identified as best suited for the area. Those interested were advised to seek more information from Magdaline.

Members suggested to have a nursery in the project area in groups or individual. Nurseries were to be encouraged. It was noted that Mr. Bururia was willing to start one.

#### **MIN 7/2021 : A.O.B**

Having no other business the meeting ended with a word of prayer from Danstan Mburia.

Compiled by Secretary



Confirmed by Chairman





**MWIMBI MURINGA BANANA IRRIGATION CO-OPERATIVE SOCIETY 2<sup>ND</sup>**  
**AGM AT MAGUTUNI OFFICE GROUND ON 12/1/2022 AT 10:00AM.**

**PRESENT MEMBERS AS PER REGISTRATION**

**AGENDAS**

1. Prayers
2. Introduction
3. Reading of previous minutes
4. Matters arising
5. Chairman's report
6. Treasurer report
7. Elections of 3 committee
8. AOB

**MIN 13/12/2022 : PRAYERS**

When everyone was seated the meeting started with a word of prayer from Titus Kinyuru

**MIN 14/12/1/2022 : INTRODUCTION**

Introduction was started by area Chief Madam Muthoni who welcomed all members who were there. She told farmers to preach to those who were not there the goodness of the co-operative. She also told the members who were in the meeting to take Covid-19 protocols seriously.

Still in the introduction the MC introduced members who attended as per sub-location levels. The Chairman took his time to introduce his co-operative committee members, who did self introduction.

The chairman also introduced Mr. Daniel Kirigia the cooperative officer to the members and David Kimathi the sub-county Social Officer.

**MIN 15/12/1/2022 : READING OF PREVIOUS MINUTES**

The previous minutes were read by the secretary Mr. Mugambi. Proposed by Mr. Riungu and seconded by Joh Mbabu.

**MIN 16/12/1/2022 : MATTERS ARISING**

Matters arising from the minutes was about the late John Kiberenge and the Chairman explained to the members that one member Madam Magdalene Kanyua was coopted to the place of the late Kiberenge.

**MIN 17/12/1/2022 : CHAIRMAN'S REPORT**

The Chairman's report to explain to members how the cooperative started. He told them that it started in 2009 with 212 members.

The chairman explained to the members how Covid-1 made the cooperative to go slow because markets were affected greatly. He told them that we had talked with Mugoya Company to buy our produce but was affected by Covid-19. He told members that our co-operative is aiming at Bananas challenges which include;

- i) Lack of capital
- ii) People not willing to join cooperative
- iii) No training techniques of farming opportunities
- iv) Brokers who mislead farmers
- v) Over production
- vi) No market information
- vii) Inputs are expensive

The Chairman also talked about the way forward which included

- i) Continue registration
- ii) To continue training members
- iii) Contract farming eg Twiga, Mugoya, Unilever etc
- iv) Reduce brokers through CIG aggregation

The Chairman finished his message by telling members that together we can. The chairman report was adopted by all members through raising their hands.

The report was proposed by Leah Mpungu and seconded by Elias Kobia Julius.

**MIN 18/12/1/2022 : KCSAP PROJECT REPORT**

Mr. Kathendu the KCSAP Chairman in Mwimbi took his time to introduced his officials.

He told members that KCSAP has 4 value chains namely;

- i) Dairy

- ii) Bananas
- iii) Indigenous chicken
- iv) Green gram

He told members that Dairy and Bananas are in Mwimbi, Muthambi and Mariani. Mr Kathendu told members that KCSAP works with service providers and grassroot partners.

Mr. Kathendu invited Mr. Nkuuja the service provider to talk to the farmers. Mr. Nkuuja told members that he is in the Banana value chain. He told members that they have trained CIGs about Banana farming. He told them that they deal with bananas from production, processing and up to marketing.

Mr. Mwenda also invited Mrs. Munene to explain to members about plantain Banana which she said that she sells it at Ksh. 250 per piece and said that the market is ready. Mr. Kathendu told members that there is a project called climate change. This project is for wells rehabilitation. He said that they rehabilitate 3 wells per sub-location where there is no community dispute.

He also talked about locust project which he said is dealing with farms which were affected by the locust. He said that it is dealing with CIGs through proposal writing.

Mr. Kathendu talked about Muringa Irrigation cooperative society and how KCSAP funded the cooperative for mobilization. He told members that the cooperative have written another proposal for value addition and it has passed. The chairman explained widely about the proposal to the members.

The chairman told members about Mugoya Company and told members that Mugoya Company has agreed to sign contract with cooperative to farm pawpaws, watermelon, arrowroots, bananas etc.

#### **MIN 19/12/1/2022 : TREASURER REPORT**

The treasurer started by telling members that the cooperative members that the cooperative has 2 accounts one for cooperative and the other for KCSAP. She told members that the registration is Ksh. 500 and a share of Ksh. 2000.

She told members that some have fully paid and others have not. She also told members that even on the side of shares some members have fully paid shares and others have not cleared their arrears. She told them that the total registration and shares totals to Ksh. 105,600.



She also read the account of KCSAP which she said has funded cooperative with Ksh. 500,000 for mobilization and the cooperative have used the money for the same. Treasurers' report was proposed by Metha Bururia.

The chairman invited Mr. Kimathi for Social Services to talk to farmers who started by telling members that the Ministry of Social Services has changed to the Ministry of public Service, Gender and Senior citizens. He also said that they deal with Special Programmes.

Mr. Kimathi thanked those who started the cooperative and urged those who have not joined it to join quickly. He also told farmers to deliver their produce.

He told the management committee to be open to farmers about the usage of money. He also advised the management committee and CIGs who were there to have trainings. He asked Chairman if possible to take co-op members to a tour to learn more about farming. He said that the co-operative should have a very good constitution that can protect the members and the society.

#### **MIN 20/12/1/2022 : ELECTION OF 3 MEMBERS**

The chairman invited the co-operative officer who talked about the cooperative laws and constitutions. He told members that there is need to have cooperative to farm together and bring the produce together for marketing. He told farmers that being together we can negotiate price and dictate it to the buyer. He urged management committee to lead the society effectively and told members to be attending co-op meetings so that they can learn together.

He talked about elections which he said that the management committee should have 9 members. In management committee two members went Mr. Miriti and Mr. Kinyua. Mr. Miriti was replaced by Mr. Gitonga from phase I and Mr. Kiberenge was replaced by Rosebeth Karauki from Phase III.

The management committee have been proposed by Mary Munene and seconded by Elias Kiburi.

In supervisory committee two members have been copted namely ALEX Kinegeni from Phase II AND Magdaline Kanyua from Phase III.

This has been proposed by Mugendi Bururia and seconded by Dinah Kaburu Gitonga.

**MIN 21/12/1/2022 : AOB**

There was no AOB

**MIN 22/12/1/2022 : CLOSING PRAYER**

The meeting ended with word of prayer from Eston Kimathi Murungi.

Compiled by

Secretary



Confirmed by

Chairman



**Annex 8: Registration certificate**

  
REPUBLIC OF KENYA

— — — — —

THE CO-OPERATIVE SOCIETIES ACT  
(Cap. 490, Section 6 (3))

**Certificate of Registration**

REGISTRATION No. CS/24355

I hereby certify that the society under the name of

MWIMBI MURINGA BANANA IRRIGATION CO-OPERATIVE SOCIETY LIMITED  
and its by-laws have this day been duly registered by me in the Register of  
Co-operative Societies, in pursuance of the provisions of the Act and the  
Rules made thereunder.

Given under my hand at Nairobi

this...14TH... day of.....AUGUST....., 2019.....




  
GEOFFREY N. NJANG'OMBE  
Ag. Commissioner for Co-operative Development

CPK/LS/0078-500-3/18



Annex 9: KRA Pin

**KENYA REVENUE  
AUTHORITY**  
[www.kra.go.ke](http://www.kra.go.ke)

**PIN Certificate**

For General Tax Questions  
Contact KRA Call Centre  
Tel: +254 (020) 4999 999  
Cell: +254(0711)000 999  
Email: [callcentre@kra.go.ke](mailto:callcentre@kra.go.ke)

**Certificate Date** 08/06/2020  
**Personal Identification Number**  
P051910318V

This is to certify that taxpayer shown herein has been registered with Revenue Authority

**Taxpayer Information**

<b>Taxpayer Name</b>	MWIMBI MURINGA BANANA IRRIGATION CO-OPERATIVE SOCIETY LIMITED
<b>Email Address</b>	MWIMBIMURINGA@GMAIL.COM

**Registered Address**

<b>L.R. Number :</b>	<b>Building</b> CHOGORIA
<b>Street/Road</b> CHOGORIA	<b>City/Town :</b> CHOGORIA
<b>County :</b> Tharaka Nithi	<b>District</b> Maara
<b>Tax Area</b> Mwimbi	<b>Station</b> Meru
<b>P. O. Box</b> 3	<b>Postal Code</b> 60401

**Tax Obligation(s) Registration Details**

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till	Status
1	Income Tax - Company	14/08/2019	N.A.	Active

The above PIN must appear on all your tax invoices and correspondences with Revenue Authority. Your accounting end month is June unless a change has been approved by the Commissioner-Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.

Disclaimer : This is a system generated certificate and does not require signature.

## Annex 10: Screening Checklist

### ENVIRONMENTAL AND SOCIAL SCREENING CHECK LIST

#### Section A: Background information

Name of County: *TIKARAKA NITHI*  
 Name of CPCU /Researcher: *ANNE NJAGI - CESSCO*  
 Micro project location: *Magutuni Market*  
 Name of CBO/Institution: *MWIMBI MURINGA BANANA IRRIGATION CO-OP*  
 Postal Address: *P.O. BOX 90 MURUTANI*  
 Contact Person: *JAMES MURUNE* Cell phone: *0725 176 499*  
 Micro project name: *BANANA MARKETING AND VALUE ADDITION PROJECT*  
 Estimated cost (KShs.): *11 million*  
 Approximate size of land area available for the micro project: *1.0 acre*  
 Objectives of the micro project: *Improve Banana value chain productivity*  
 Activities/enterprises undertaken: *Selling/Marketing banana and value addition*  
 How was the micro project chosen? *Members Participation*  
 Expected micro project duration: *3 years*

#### Section B: Environmental Issues

Will the micro 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 micro project application.

**Section C: Socio-economic Issues**

Will the micro 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 micro 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?		✓
<b>Agrochemical use</b>		
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 micro project application.

### Section E: Pesticides and Agricultural Chemicals

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

#### 1) Pest Control practices

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

Yes _____ No <u>N/A</u> If yes, Name them:	Name of pesticide	Name of pest, disease, weed	Number of times applied/ season	When did you apply (growth stage or month) Quantity purchased

If No, WHY?

Banana diseases are not prevalent

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

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

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

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

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

If No, WHY?

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

- (i) We use pesticides at regular intervals throughout the season(calendar) N/A
- (ii) We use pesticides when we see pests in the field(control)
- (iii) We use pesticides after field sampling and finding a certain number of pests or a certain level of damage (scouting)
- (iv) Told by someone to apply(specify who) \_\_\_\_\_
- (v) Other(specify), \_\_\_\_\_

d) Do you use a knapsack sprayer? Yes No

If yes,

(i) Do you own it Yes No N/A

(ii) Do you rent it Yes No

(iii) Do you borrow it Yes No

e) From your experience, are there any negative/harmful effects of using pesticides?

Yes.....No.....

f) If yes, list the negative effects:



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

g) Do you use any kind of protective clothing while applying or handling pesticides? Yes No

Why? N/A

h) If YES, what kind? .....

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

a) Do you read labels on the pesticide container before using?

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

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

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

c) Do you mix pesticides with your hands?

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

d) Do you observe the pre-harvest waiting periods after applying the pesticides?

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

e) After spraying, do you wait 12 hours before entering the field?

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

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

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

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

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

h) Where do you store your pesticides? .....

Why do you store them there? .....

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

j) Do you know of any beneficial insects (insects that are harmful insects)?

Yes..... No.....

k) If yes, name them:

i) \_\_\_\_\_ ii) \_\_\_\_\_ iii) \_\_\_\_\_

**3. Pesticides and Health**

a) Do you find that pesticide application is affecting the health of: Persons regularly applying pesticides?

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

Persons working in fields sprayed with pesticides

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

Persons harvesting the produce

Sometimes \_\_\_\_\_ Always \_\_\_\_\_ Never \_\_\_\_\_

#### 4. Options to Pesticides

a) From your experience, are you aware of other methods for controlling insects diseases and/or weeds besides pesticides?

Yes.....☒ No.....

b) If yes, describe the practices:

i) Mulching

ii) Organic/Natural control

iii) \_\_\_\_\_

iv \_\_\_\_\_

#### 5. Information

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

• Prices and marketing dynamics  
• Value addition

#### 6. Training

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

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

No. of times/ past yr. 1

b). Pesticide Usage Yes.....☒ No.....

No. of times/past yr. 8

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

No. of times/past yr. 1

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

No. of times/past yr. 1

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

No. of times/past yr. 1

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

No. of times/past yr. 1

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

• Genetically modified crops  
• More value addition

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



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
- ☐ Micro project specific ESIA's, if recommended, must be carried out by experts registered with NEMA and be followed by monitoring and review. During the process of conducting an EIA the proponent shall seek views of persons who may be affected by the micro project. The WB policy set out in OP 4.01 requires consultation of micro project affected groups and disclosure of EIA's conclusions. In seeking views of the public after the approval of the micro project, the proponent shall avail the draft ESIA report at a public place accessible to project-affected groups and local NGOs/CSOs.

Completed by: *[Signature]*

Name: SONGS MURINZA

Position / Community: Chairman - Mwimbi Muringa B.I. COOP

Date

Field Appraisal Officer (CDE):

Signature: *[Signature]*

Date: 6/12/2021

NATIONAL ENVIRONMENT  
MANAGEMENT AUTHORITY  
COUNTY ENVIRONMENT OFFICE  
P. O. Box 210, CHUKA.

Sign:.....

Date:.....

*Recommended to  
Undertake SPR.*

Annex 11: Submission form (form 2)

Form 2

Application Reference No..... r. 19))

For official use

**THE ENVIRONMENT MANAGEMENT AND CO-ORDINATION ACT**

**SUBMISSION OF ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT**

Part A: DETAILS OF PROPONENT

A1	Name of proponent (Person or Firm)	Mwimbi Muringa Banana Irrigation Co-operative Society Limited
A2	PIN No.	P.051910318V
A3	Address	P.O. Box 90 - 60401 CHOGORIA
A4	Name of contact person	John N. Njiru
A5	Telephone No.	0723126599
A6	Fax No.	-
A7	E-mail	-

Part B: DETAILS OF THE ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT

B1	Title of the proposed project	Proposed banana value addition project
B2	Objectives and scope of the project	To construct and equip banana value addition facility
B3	Description of the activities	Construction and equipping banana value addition centre to aggregate and value addition of banana
B4	Location of the proposed project	Noguturi, Narok

Part C: DECLARATION BY THE PROPONENT

I hereby certify that the particulars given above are correct and true to the best of my knowledge.

JOHN N. NJIRU CHAIRMAN

Name Position Signature

On behalf of Mwimbi Muringa Banana Irrigation Co-operative Society Limited Date 27/06/2022

(Firm name and seal)

Part D: DETAILS OF ENVIRONMENTAL IMPACT ASSESSMENT EXPERT

Name (individual/firm)	DIKSON KIRATHI ISLITHANNA		
Certificate of registration No.	6235		
Address	P.O. Box 2269 - 60200 Nyeri		
Tel.	0726259282	Fax	-
E-mail	dkmuthana@gmail.com		

Part E: OFFICIAL USE

Approved / not approved:		
Comments:		
Officer	Sign	Date

Important Notes: Please submit the following:

- (a) Three copies of this form
- (b) 10 copies of the project study report
- (c) the prescribed fees, to:

Director-General,  
The National Environment Management Authority,  
popo Road, South C,  
P.O. Box 47146,  
NAIROBI.

Tel. 254-02-6009013/27/79 or 6008999 Fax. 254-02-6008997

E-mail [dgnema@nema.go.ke](mailto:dgnema@nema.go.ke)