ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, COMPREHENSIVE PROJECT REPORT,

PROPOSED UPGRADING OF MT. ELGON COFFEE MILL THROUGH CONSTRUCTION OF A COFFEE PROCESSING UNIT AS WELL AS PROCUREMENT AND INSTALLATION OF COFFEE ROASTING AND PACKAGING UNIT IN CHESIKAKI WARD, MT. ELGON SUB-COUNTY, BUNGOMA COUNTY

G.PS COORDINATES

Latitude 0.80226, Longitude 34.50012

PROPONENT

Mount Elgon Farmers Co-operative Union Limited

P.O Box 69- Chaptais

PREPARED BY

Silas O. Rakama

EIA/EA Lead Expert Number: 9976

February 2026

SUB-PROJECT FACTSHEET

Project Title	Upgrading of Mount Elgon coffee mill in through construction of a processing unit as well as procurement and installation of a coffee roasting and packaging unit
Task	Environmental and Social Impact Assessment for a medium risk project based on legal notice 31& 32 of 2019
Project Duration	1 year (January, 2026 - December, 2026)
Project Objectives	To establish a coffee roasting and packaging unit at Mt. Elgon coffee mill for production of value-added coffee with good cup quality for improved earnings. Specific Objectives *i)* To enhance coffee processing and value addition through Roasting by 50% *ii)* To increase coffee value and farmers income through grounding and packaging by 70% ***iii)*** To increase local consumption of coffee by 10%
Specific Project scope	1. Construction of a coffee processing unit to host the roaster and packaging machines. 2. Acquisition, installation and test running of the coffee roaster and packaging equipment.
Implementing Agency	NAVCDP through the County Government of Bungoma and Mt. Elgon Farmers Cooperative Union Limited
Proposing Organization/Proponent	Mt. Elgon Farmers Cooperative Union Limited
Contact Person	Name: Amos Mamboleo Position: Chairman Cell Phone No. 0729159148 Email: amosmamboleo22@gmail.com
Key Financier	World Bank, National Government, County Government of Bungoma and Mt. Elgon farmers' Cooperative Union Limited
Project Cost	Total: 26,076,800 - MECOM: 2,000,000 - NAVCDP: 24,076,800

CERTIFICATION

A. Certification by the ESIA Lead Expert

I, the undersigned, hereby certify that the information provided in this Environmental and Social Impact Assessment (ESIA) report for the proposed upgrade of Mount Elgon coffee mill through construction of a coffee processing unit, procurement and installation of coffee roasting and packaging units in Chesikaki Ward, Mount Elgon Sub-County, Bungoma County, has been compiled in accordance with the requirements of the Environmental Management and Coordination Act (EMCA), 1999 (Revised 2015), and the Environmental (Impact Assessment and Audit) Regulations, 2003 (Amended 2019).

To the best of my knowledge, all the data presented is correct, accurate, and reflects a true representation of the potential environmental and social impacts of the proposed sub-project. The assessment has been conducted objectively and independently, incorporating public participation, the subproject design, baseline information of the area, relevant legal frameworks and professional judgment.

Name of Lead Expert: .....*Silas O. Rakama*.....

NEMA Registration No.: .....*9976*.....

Signature: ....

Date: .....*9th July, 2025*.....

B. Certification by the Project Proponent

I, the undersigned, on behalf of **Mt. Elgon Farmers' Cooperative Union LTD**, confirm that I have reviewed the contents of this ESIA report and agree to implement the proposed Environmental and Social Management Plan (ESMP) and all recommended mitigation and monitoring measures as outlined herein. I further commit to full compliance with the provisions of EMCA (1999, Revised 2015) and all applicable environmental laws and regulations.

Name of Proponent/Authorized Representative: ...*Amos Mamboleo*.....

Designation: .....*Chairman*.....

Organization: .....*Mt. Elgon Farmers' Cooperative Union LTD*.....

Signature: ....

Date: .....*10th July, 2025*.....

DETAILED SUMMARY OF THE PROPONENT

The proponent of the proposed coffee mill upgrade sub-project is Mt Elgon farmers' cooperative union limited, the union was registered in 1981 and was formed by several cooperatives. Currently the union has 24 cooperatives with a membership of 38,371 farmers. These societies are spread across Bungoma County, with a few coming from Vihiga, Busia, Kakamega, and Trans Nzoia Counties. In addition to working with societies, the union also collaborates with private coffee planters. The organization ventured into coffee marketing in 2023.

The Mount Elgon Cooperative Union has a board made of representatives of the Cooperatives. The Board is elected and provides strategic policy guidance and supervises the secretariat. The Secretariat is head by a Chief Executive Officer (CEO) who has a team of technically qualified officers. The Union has formed and established the Mt Elgon Coffee Mills, which does milling of parchment coffee from member cooperatives as well as private farmers. In addition, it receives coffee for milling from cooperatives that are not members, and also parchment coffee from outside Bungoma County.

EXPERTS FACT SHEET

The Environmental and Social Impact Assessment of the proposed upgrade of Mt. Elgon Coffee Mill sub project was collaborated work done by a multidisciplinary team of experts drawn from the Environment, Social Sciences, Agriculture, Engineering, cooperatives society sectors, ensuring a comprehensive and integrated evaluation of the project's potential environmental and social impacts (Table Below presents list of experts who took part in the assessment).

Name	Designation/Title	Qualifications	Role in the Study	Experience/Remarks
Mr. Silas Rakama	Lead Expert / NEMA Registered Expert (Reg. No. 9976).	BSc., MSc. in Sustainability Studies	Lead ESIA Expert	Over 12 years of experience in conducting ESIAs across multiple sectors.
Mr. Elijah Obadha	Environmental Safeguard Compliance Officer, Bungoma County NAVCDP	Environmental Management	Environmental Safeguard Support	Ensured compliance with environmental safeguards in accordance with NAVCDP protocols.
Madam Lenis Marani	Social Safeguard and Gender Mainstreaming Officer, Bungoma County NAVCDP	Social Development, Gender Mainstreaming	Gender and Social Inclusion Support	Provided oversight on gender integration and social inclusion.
Mr. Reuben Buchacha	Agricultural and Extension Services Specialist	Agriculture, Extension Services	Agricultural and Land Use Expert	Provided insights into local agricultural practices.
Miss Diana Nambuchi	Social Scientist	Social Sciences	Social Assessment Support	Assisted in social data collection and stakeholder consultations.
Miss Naomi Komol	Environmentalist	Environmental Science	Environmental Assessment Support	Participated in environmental baseline data collection and impact identification.

DISCLAIMER

This Environmental and Social Impact Assessment (ESIA) Report has been prepared by the appointed NEMA-licensed Environmental Expert on behalf of the proponent, Mt. Elgon farmers' Cooperative Union for the proposed upgrade of the Mt. Elgon Coffee Mill located in Chesikaki Ward, Mt. Elgon Sub-county, Bungoma County.

The contents of this report are based on information provided by the proponent, field assessments, public consultations, and secondary data obtained from relevant authorities and stakeholders. While reasonable care has been taken to ensure the accuracy and completeness of the information presented herein, the authors and consultants shall not be held liable for any unintended omissions, inaccuracies, or outcomes resulting from the use of this report for purposes other than those expressly intended.

This ESIA report is submitted exclusively for the purpose of facilitating environmental approval by the National Environment Management Authority (NEMA) and other relevant regulatory agencies in accordance with the provisions of the Environmental Management and Coordination Act (EMCA), 1999 (Cap 387) and its subsidiary regulations.

Use of this report by third parties, reproduction, or distribution without prior written consent from the proponent or the lead expert is strictly prohibited.

EXECUTIVE SUMMARY

Mt. Elgon farmers' cooperative union intents to upgrade their coffee milling facility in Chesikaki ward of Bungoma County by construction of a processing facility as well as procurement and installation of coffee roasting and packaging units. The sub-project is supported by the National Agriculture Value Chain development Project (NAVCDP) which is a collaborative initiative supported by Government of Kenya (GoK) through the Ministry of Agriculture and Livestock Development, State Department for Crop Development; the World Bank through the International Development Association (IDA) credit; Participating county governments through counterpart funding and facilitating the implementation of project activities at the local level; and Farmer Producer Organizations (FPOs). The Project Development Objective of NAVCDP is to increase market participation and value addition for targeted farmers in select value chains in project areas.

Mt. Elgon Coffee Mill, established in 2012, has been milling since 2020 and has acquired a coffee brokerage license to auction coffee in Nairobi Coffee Exchange. The Union processed 3,321,166kg of patchment and produced 2,366,249kg of clean coffee between 2021 and 2024. However, the product fetches low income due to lack of roasting and packaging. To increase earnings and meet domestic coffee consumption, the Union is proposing to install a coffee roaster and packaging unit. Feasibility study report indicated that the roasting and packaging will increase the coffee's value by KES. 1,500 per kg, resulting in an annual increase of KES. 1,732,094,268 for the Society and farmers. The objective of the project is to enhance value addition at the local level by transitioning from primary coffee processing to full processing, roasting, and packaging.

The sub-project will involve construction of a processing unit, procurement and installation of machines and related equipment for coffee roasting and packaging. The development is expected to occupy part of the existing cooperative land, which is already zoned and utilized for agro-processing.

As a legal requirement, the proposed sub-project was screened based on the legal notice 31 and 32 of 2019 as well as World Bank Environment and Social Framework (ESS 1) on Environmental Assessment. Based on the assessment, the proposed project was categorized to be of moderate risk.

The ESIA process adopted a participatory and collaborative approach in the course of the assessment. The assessment was carried out in between June 27th and 3rd July 2025 in accordance with the procedures and protocols in the Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019). The assessment involved: site visits to physically assess the socio-economic as well as physical characteristics of the sub-project area; review of relevant documents such as the sub-project proposal, minutes of the recent AGM, previous EIA reports, pieces of legislations, and feasibility study reports; Public participation through questionnaires, public meetings, and interviews with opinion leaders and lead agencies; reporting and documentation.

Key positive impacts anticipated include employment creation, value chain enhancement, improved income for farmers, local economic stimulation, and knowledge/technology transfer. Potential adverse impacts during construction include noise, dust, solid and liquid waste generation, and minor disturbances to local traffic and services. During operation, possible impacts relate to effluent generation, energy consumption, waste management, and equipment noise as well as emission.

Mitigation measures have been proposed to minimize negative impacts and enhance positive outcomes. These include proper waste and effluent handling systems, occupational health and safety measures, sustainable sourcing of construction materials, and a grievance redress mechanism in line with cooperative governance frameworks and the Cooperative Societies Act.

In conclusion, the proposed project is socially desirable, economically viable, and environmentally sustainable, provided the mitigation measures outlined in the ESMP are implemented and monitored. The ESIA recommends that the sub-project be granted environmental approval by NEMA to proceed to implementation. During the project operation phase, the proponent must hire a licensed NEMA lead expert to conduct independent environmental audits and provide a report detailing performance, weaknesses, and corrective actions.

ABBREVIATIONS AND ACRONYMS

AFA	Agriculture and Food Authority
CAIO	County Agriculture Infrastructure Officer

CESCO	County Environmental Safeguards Compliance Officer
CIDP	County Integrated Development Plan
CoG	Council of Governors
CPCU	County Project Coordinating Unit
CSSGMO	County Social Safeguard and Gender mainstreaming Officer
CSR	Corporate Social Responsibility
EA	Environmental Audit
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards (World Bank)
GIS	Geographic Information System
GoK	Government of Kenya
ILO	International Labour Organization
IP	Indigenous Peoples
KEBS	Kenya Bureau of Standards
KFS	Kenya Forest Service
Kgs	Kilograms
KPLC	Kenya Power and Lighting Company
LPG	Liquefied Petroleum Gas
MECOM	Mt. Elgon Coffee Mill
MoE	Ministry of Energy
MoEF	Ministry of Environment and Forestry

MoH	Ministry of Health
NAVCDP	National Agriculture Value Chain Development Project
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NPCU	National Project Coordinating Unit
OSHA	Occupational Safety and Health Act
PICD	Participatory Integrated Community Development
PPE	Personal Protective Equipment
SACCO	Savings and Credit Cooperative Organization
ToR	Terms of Reference
VC	Value Chain

DEFINITION OF TERMS

1) **Baseline Conditions**: The existing physical, biological, and socio-economic conditions of the project area prior to the implementation of the proposed project.

2) **Cumulative Impacts**: Impacts that result from the incremental effects of a project when added to other past, present, or foreseeable future actions.

3) **Effluent**: liquid waste or wastewater that is discharged from an industrial facility, sewage treatment plant, or commercial activity into the environment—typically into a water body such as a river, stream, or drainage channel.

4) **Environmental and Social Impact Assessment (ESIA):** A process of evaluating the likely environmental and social impacts of a proposed project, considering interrelated socio-economic, cultural, and human-health impacts.

5) **Environmental Impact**: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from a project's activities.

6) **Environmental Management Plan (EMP**: A detailed plan outlining measures to mitigate, monitor, and manage environmental impacts during the lifecycle of a project.

7) **Grievance Redress Mechanism (GRM):** A formal process through which people can raise concerns or complaints about a project and seek resolution.

8) **Mitigation Measures:** Actions taken to avoid, reduce, or compensate for negative environmental and social impacts of a project.

9) **Occupational Health and Safety (OHS):** Standards and procedures to ensure the safety, health, and welfare of workers and others affected by workplace activities.

10) **Proponent:** The individual, group, or organization proposing and responsible for the implementation of the project.

11) **Public Participation**: A process through which stakeholders are consulted and involved in decision-making regarding the planning and implementation of a project.

12) **Sensitive Receptors**: Locations or individuals that are more vulnerable to environmental impacts, such as schools, hospitals, the elderly, and young children.

13) **Solid Waste**: Non-liquid waste materials resulting from industrial, commercial, or domestic activities, such as packaging, paper, plastics, food waste, etc.

14) **Stakeholder**: Any individual, group, or organization that can affect or is affected by a project's decisions, activities, or outcomes.

15) **Value Addition**: The process of enhancing the value of a product through further processing, such as roasting and packaging coffee.

16) **Waste Water**: Water that has been adversely affected in quality by anthropogenic influence, typically from industrial or domestic processes.

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CHAPTER:1 : INTRODUCTION

1.1 Sub-Project Background

Mt. Elgon coffee mill was established in 2012 by Mt. Elgon Coffee Union but commenced milling in the year 2020. The mill has been in operation for the last four years and currently has acquired a coffee brokerage license that has enabled it to auction coffee in Nairobi Coffee exchange. The Union processed 3,321,166kg of patchment and produces 2,366,249kg of clean coffee between 2021 and 2024. Over the past four years the society milled 2,366,249kg of patchment which constituted 71% of its total collection/capacity and sold at the price of KES. 768 ($6).

However, the product fetches low income due to lack of further processing through roasting and packaging. To increase earnings and meet the domestic coffee consumption, the Union is proposing to install a coffee roaster and packaging unit to avail value added coffee to the market. The proposed investment is financed under the National Agriculture Value Chain Development Project (NAVCDP). Total sub-project cost stands at 26,000,000 Kenya Shillings with NAVCDP contribution being 24,000,000 Kenya Shillings and the Cooperative society contribution being 2,000,000 Kenya Shillings.

Roasting and packaging will increase the value of the coffee by KES. 1,500 per kg which translate to an increase of KES. 1,732,094,268 to the Society per year. The benefits with subsequently trickle down to the farmers through the affiliate Societies.

1.2 Sub-Project Objective

Broad Objective: To upgrade Mt. Elgon Coffee Mill through establishment of a coffee roasting and packaging unit for improved income and sustainability.

Specific Objectives

i.) To enhance coffee processing and value addition through Roasting by 50%

ii.) To increase coffee value and farmers income through grounding and packaging by 70%

iii.) To increase local consumption of coffee by 10%

1.3 Sub-Project Justification

One of the notable challenges in coffee marketing is low local consumption as only 4% of the coffee produced nationally is consumed locally. Bungoma County in the CIDP 2022 -2027 identified value addition as one of the drivers for the agricultural sector transformation. The draft Coffee Value Chain Strategy also identified processing as a key determinant of the value derived from the value chain and the importance it holds for the various players along the chain. The County Coffee Value Chain Investment plan further highlights the pivotal role processing and specifically roasting and packaging portends in the promotion of local consumption and in earning the County the marginal income associated with advanced processing to meet the demands of local market.

The Bungoma county CIDP, the VC strategy, the Investment plan and the PICD all identified coffee roasting and packaging as a major driver in unlocking the VC market potential and attracting premium prices in the market thus earning the farmers higher incomes. Mt. Elgon Coffee Mills was identified as a key institution in supporting the intervention. The Coffee Union is already in the business of aggregation and milling of coffee in the county. The union acquired a brokerage license four years back in the year 2020 that has enabled it to participate in the Nairobi Auction. The Union believes that roasting which brings out the aroma and flavour by shaping the sweetness into a whole that complements the overall flavour will encourage local consumption both in Bungoma County and Nationally.

Additionally, roasting and packaging will improve the incomes generated within the Value Chain. The value will increase by approximately KES. 1,500 per kg. This will be as a result of increased earnings from KES. 500 of milled clean coffee to KES. 2,000 per kg of roasted coffee. The benefits will trickle to the VC actors in proportion to the value offered in the processes. The farmers will earn higher incomes which will contribute to positive change in the livelihoods. There will be increased access to the market and consumption.

1.4 Objectives of the ESIA

The scope of the ESIA was determined through environmental screening which assessed different anticipated impacts that the project might have on the environment and well-being of the community. Issues considered included the physical location, sensitive issues and nature of anticipated impacts.

The ESIA study is meant to identify significant environmental and social impacts associated with the design, construction, operation and decommissioning of the proposed project and recommend appropriate enhancement and mitigation measures for the positive and negative impacts respectively.

Through the ESIA study, an Environmental and Social Management and Monitoring Plan was developed describing in detail the mitigation measures to be carried out, costing, scheduling and responsibility of such measures. The ESIA's specific objectives include;

i. To collect and analyse baseline information on bio-physical, ecological and socio-economic characteristics of the project area and to analyse their relevant to the proposed development;
ii. To analyse the design of the proposed project and related activities that may arise during project implementation;
iii. To Undertake public and stakeholders engagement through interviews with the anticipated project interested and affected parties;
iv. To review national and international legislation, standards, and guidelines and recommend how the proposed project will comply with the specific provisions;
v. To described and analyse alternatives to the proposed project including alternatives to the proposed location, design, technologies, and processes;
vi. To established key areas of environmental, health and safety concern focusing on both the positive and negative effects in relation to how they affect the biophysical, social, economic, and cultural components of the environment;
vii. To analyse impacts and recommended mitigation and enhancement measures for the adverse and positive impacts respectively;
viii. To design an Environmental Management Plan (including cost estimates) and a monitoring framework for the environmental impact of the project;
ix. To develop a comprehensive ESIA report in accordance with the ESIA regulations as outlined in the Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019); fill the project report submission form R6 and submitted the report and necessary soft and hard copies together with the statutory fees to the Authority for approval and/ or further instructions.

1.5 Terms of Reference

The terms of reference for the ESIA of the proposed coffee mill upgrade sub-project was in reference to the Environmental Management and Coordination Act (EMCA, Cap 387) and the Environmental (Impact Assessment and Audit) Regulations, 2003 (Reviewed 2019). These are to:

a) Establish key areas of environmental, health and safety concerns and effects associated with a proposed project focusing on both the positive and negative effects as well as effects to the

bio-physical, social, economic and cultural components of the environment. The potential impacts must relate to the location; design; construction works and operation of the proposed project.

b) Generate environmental baseline conditions of the project area and review of available information and data related to the project.

c) Obtain the views and opinions of the neighbours of the proposed site regarding the proposed project.

d) Describe the products, by-products and wastes generated by the proposed project and the potentially affected environments.

e) Outline the legislations and regulations relevant to the proposed project, review the relevant legislative frameworks, and show their relevance in relation to the proposed project.

f) Describe and analyze alternatives to the proposed project site, designs, technologies and processes and the reasons for preferring the proposed project's alternative.

g) Assess the capacities of agencies that will be involved in the implementation of mitigation measures.

h) Assess socio-cultural aspects including present and projected impacts by use of qualitative and quantitative methods.

i) Analyze social aspects and Beneficiary Participation Analysis of the social aspects.

j) Analyze impacts and recommend mitigation measures.

k) Generate a comprehensive environmental management outline for the proposed project covering all phases of the proposed project upon which mitigation/enhancement measures will be carried out, specifying responsibilities for their implementation and the schedule for implementation including any capacity building measures for its effective implementation.

l) Prepare an environmental monitoring plan for the proposed project indicating the parameters to be monitored, frequency of monitoring, indicators of performance, organizations/individuals responsible for monitoring and the associated costs.

m) Generate a comprehensive EIA report in accordance with the Environmental (Impact Assessment and Audit) Regulations, 2003 (Reviewed 2019) for submission to the Authority and for further instructions and/or approval.

1.6 Scope of the ESIA

The proposed sub-project was screened according to the Kenyan Legal Notice No. 31 of 2019 and the Second Schedule of EMCA 1999 (Amended 2015) which lists the projects to undergo EIA. An ESIA comprehensive project report was recommended. The proposed project falls under the category described as "Medium scale processing and manufacturing industries, including — food-processing plants or agro-based processing plants" which is of medium-risk in accordance with the Legal Notice No. 31, Legislative Supplement No. 16 published in the Kenya Gazette Supplement No. 62 on the 30th of April 2019.

The proposed project was also screened based on the World Bank Environment and Social Framework (ESS 1) on Environmental Assessment. World Bank classifies projects depending on the type, location, sensitivity, and scale of project and nature and magnitude of its potential environmental

impacts. Based on the assessment, the proposed project was placed under ''Category B", Projects which are likely to have potential adverse environmental impacts on human populations or environmentally important areas-- including wetlands, forests, grasslands, and other natural habitats which are less adverse than those of Category A projects thus require narrower Environmental Assessment.

1.7 Assessment Methodology

The ESIA process adopted a participatory and collaborative approach in the course of the assignment. The approaches encouraged active involvement of the stakeholders, who had crucial perspectives and knowledge of the areas' conditions, traditions and social structure. It also assisted the ESIA team to acquire reliable data, using a variety of formal and informal techniques that could be employed within a short timescale.

The assessment was carried out in between June 27th and 3rd July 2025 in accordance with the procedures and protocols in the Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019). The assessment involved:

a) Site visits to physically assess the socio-economic as well as physical characteristics of the area around the sub-project area (Chesikaki ward).
b) Screening: In screening, the site of the proposed project, the environmental characteristics of the areas surrounding the proposed site, the activities of the proposed project, the nature of community and expected social issues because of the proposed project were evaluated to confirm whether the proposed project fell within a category that requires an ESIA before commencement.
   Screening also determined the level of ESIA to which the proposed project was subjected to. This project is categorized as Medium-Risk in according with the Legal Notice No. 31, Legislative Supplement No. 16 published in the Kenya Gazette Supplement No. 62 on the 30th of April 2019 i.e., Amendment of the Second Schedule which lists the projects to undergo Environmental Impact Assessment (EIA) [Section 58 (1) of EMCA, 1999 (Revised 2015)] and, therefore, requires to be subjected to ESIA.
c) Desktop studies: to understand the project background and its context and legislations relevant to the proposed project, the ESIA team reviewed documents related to the proposed project including the sub-project proposal, minutes of the recent AGM, previous Environmental and Social Impact Assessment Report for the primary coffee processing facility, Bungoma County integrated development plan 2023-2027 (CIDP), proposed project feasibility study reports as well as case studies of similar projects.
d) Public participation: Views of the interested and affected parties were collected through administration of questionnaires to the project neighbouring households, public meeting as well as key informant interviews with opinion leaders and relevant lead agencies. The information gathered was subsequently synthesized and incorporated into the ESIA report.
e) Reporting and documentation: NEMA guidelines through the NEMA legal Notice No. 32 Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 was used as a guide in compiling this ESIA report. NAVCDP Environment and Social Management Framework (ESMF, 2023) also informed the ESIA study and the structure of the report. The Consultant ensured constant briefing of the client during the exercise. Description plans and sketches showing various activities are part of the Appendices of the report.

1.8 ESIA Team

The ESIA for the upgraded coffee mill project was conducted by a multidisciplinary team led by a NEMA-registered Lead Environmental Expert with extensive experience in environmental and social assessments. The team included environmental scientists, social scientists, trade department representative, health department representative and NAVCDP CPCU Bungoma county office representatives. Together, the team ensured comprehensive coverage of all environmental and social aspects of the project, including stakeholder engagement, impact analysis, mitigation planning, and preparation of a compliant ESIA report in line with Kenya's EMCA and EIA Regulations. The team was coordinated by the CESCO Bungoma County.

1.9 Project Implementing Agency

The upgraded coffee mill sub-project is being implemented under the framework of the National Agricultural Value Chain Development Project (NAVCDP), a government-led initiative funded through the Ministry of Agriculture and Livestock Development (MoALD) with support from the World Bank. NAVCDP is designed to support smallholder farmers through improved value chain infrastructure, productivity enhancement, and market access, with implementation structured across national, county, and ward levels.

1.10 Structure of the Report

The ESIA report has been organized into 9 chapters, chapter one is the introduction chapter, chapter two covers the project design, chapter three covers the legal, policy, institutional and multilateral environmental and social frameworks, chapter four covers baseline environmental and socio-economic characteristics of the project area, chapter 5 covers the public participation, chapter six covers the analysis of project alternatives, chapter seven covers identified environmental and social impacts as well as their mitigation measures, chapter eight covers the environmental and social management plan matrix while chapter nine covers the conclusions and recommendations. Section ten of the report covers the annexes attached in the report.

CHAPTER:2: SUB PROJECT DESCRIPTION

2.1 Introduction

This chapter presents a detailed description of the proposed sub-project, which involves the upgrade of a primary coffee processing facility through the construction of a permanent processing unit and the installation of modern coffee roasting and packaging equipment. The information in this chapter outlines the nature, components, layout, and operational details of the project and provides the necessary context for assessing potential environmental and social impacts.

2.2 Location of the Sub-Project

The proposed coffee processing sub-project is located in Chesikaki Ward, within Mount Elgon Sub-County of Bungoma County, Kenya. The site falls under the jurisdiction of the Mount Elgon Farmers Cooperative Society, which is the proponent of the project. Geographically, the sub-project site lies at coordinates Latitude 0.80226° North and Longitude 34.50012° East (Figure 1). The area is accessible via all-weather roads and is situated within a coffee-growing zone, making it ideal for value addition activities such as roasting and packaging.

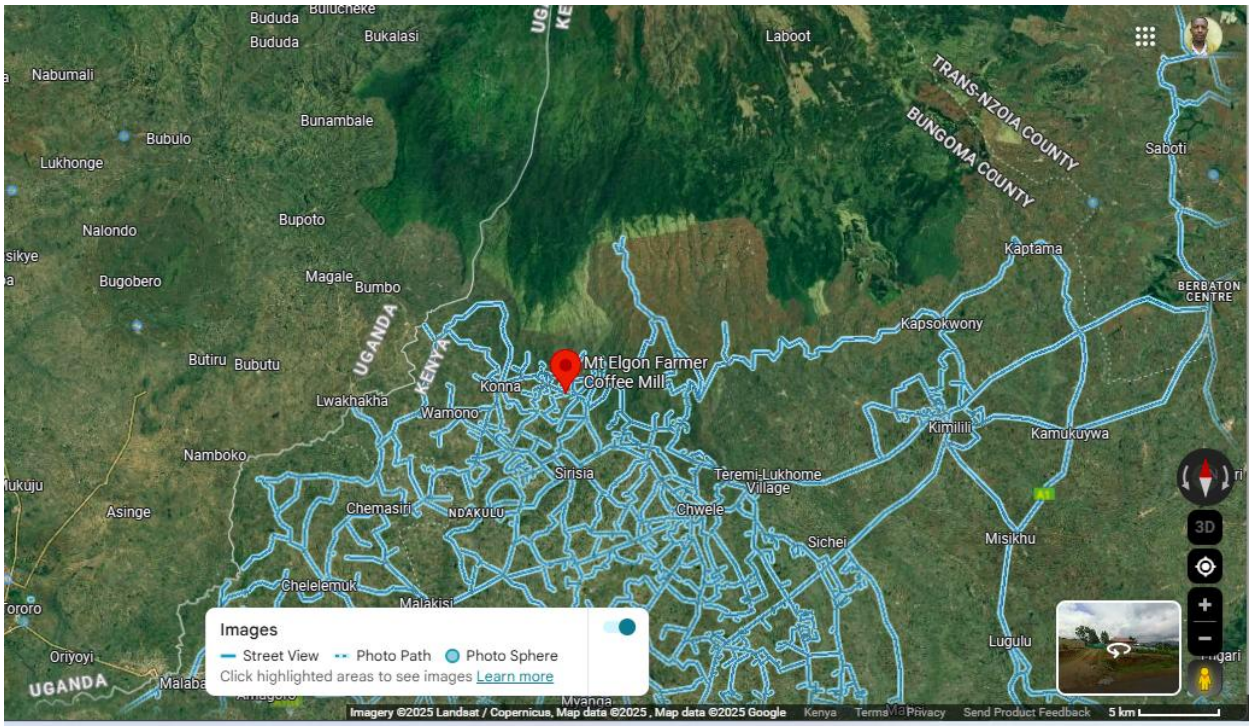

Figure 1: Land Sat image showing the sub-project site in red ribbon

2.3 Project Design

The proposed sub-project will entail acquisition, installation and test running of the roaster and the packaging equipment as well as building of a processing unit to host the equipment.

2.3.1 Coffee Processing Unit/Building

The proposed upgrade will include the construction of a modern coffee processing unit aimed at improving efficiency and hygiene in the processing of coffee. The unit will be designed to house essential coffee processing equipment such as coffee roaster and packaging equipment as well as other supporting infrastructure (*the building design is attached*). The structure will be built using durable materials with provision for proper drainage, waste handling, and ventilation.

2.3.2 Acquisition and Installation of Coffee Roaster

To support value addition, the sub-project will involve the acquisition and installation of a medium-capacity coffee roasting machine. The roaster will be installed within a designated section of the new facility to be constructed, complete with electrical and ventilation systems to support safe and efficient operation. This equipment will enable the mill to roast coffee beans on-site, providing an opportunity to access premium markets with roasted coffee products. The roaster will be selected based on energy efficiency and compliance with relevant occupational health and safety standards.

2.3.3 Coffee Packaging Equipment

To complement the roasting process and promote product branding, the sub-project will include the procurement and installation of coffee packaging equipment. The system will feature semi-automated machinery for weighing, sealing, and labelling coffee products in various retail-ready formats. The packaging unit will be installed in a clean, designated area to ensure product safety and compliance with food-grade handling requirements. This investment will enhance market access, traceability, and value capture by enabling the direct sale of roasted and branded coffee to local and export markets.

2.4 Construction and Installation Activities

The construction and installation phase of the proposed coffee mill upgrade will involve a series of coordinated activities aimed at setting up the necessary infrastructure and equipment for efficient coffee processing, roasting, and packaging. These activities will be undertaken over a defined implementation period and will include the following:

2.4.1 Site Preparation and Ground Works

The initial stage will involve clearing of vegetation, levelling, and demarcating the construction area. Earthworks such as excavation, backfilling, and compaction will be carried out to prepare the ground for foundation laying. Temporary access routes and storage areas for materials and equipment will also be established.

2.4.2 Construction of Coffee processing Unit

Civil works will include the laying of foundations, erection of structural walls, roofing, plastering, and installation of doors and windows. Internal works will involve partitioning of processing sections (e.g., roasting station, packaging areas), installation of drainage systems, water supply, and electrical wiring.

2.4.3 Delivery and Installation of Coffee Roaster

Once the roaster installation space is complete, the coffee roasting machine will be delivered to the site. This activity will include offloading, positioning, and mechanical installation of the equipment. Electrical and ventilation connections will be carried out, ensuring the system is safely integrated with the existing installed power supply. Manufacturer representatives or trained technicians will be involved in the setup and initial calibration of the roaster.

2.4.4 Installation of Coffee Packaging Equipment

Packaging equipment, including grinders, scales, sealing machines, and labelling units, will be delivered and installed in a designated clean area of the processing unit. The installation

process will involve mechanical setup, integration with power supply, and alignment with the production line for optimal workflow.

2.4.5 Testing and commissioning

Before transition to operational use, all installed systems including the roaster and packaging line will undergo comprehensive testing and trial runs. Adjustments will be made as needed, and operators will receive basic training. The construction contractor will conduct final inspections and hand over the completed facility for operational use. Coffee directorate at the Bungoma county office will be involved in the testing and commissioning of the coffee processing equipment.

2.5 Materials to be used in the Construction Works

The construction of the coffee processing unit will involve the use of both locally sourced and manufactured materials to ensure structural integrity, durability, hygiene, and compliance with food processing facility standards. The key materials are presented in Table 1.

Table 1: Materials required during construction and installation works

S/N	Material	Description
1.	Cement	Ordinary Portland Cement (OPC) will be used for all structural concrete works including foundations, columns, and floor slabs.
2.	Sand and Ballast	Clean, well-graded river sand and crushed ballast will be used for concrete mixing and masonry work.
3.	Reinforcement Steel Bar	High-tensile deformed steel bars of varying diameters (e.g., 8mm, 12mm, and 16mm) will be used to reinforce concrete elements such as beams, columns, and slabs.
4.	Concrete Blocks or Bricks	Machine-cut concrete blocks or baked clay bricks will be used for walling depending on local availability and structural requirements.
5.	Galvanized Iron Sheets	Corrugated GI sheets will be used for roofing.
6.	Timber	Timber will be used to support the roof structure.
7.	Wall Paint	Internal and external walls will be finished with washable, mould-resistant paint for hygiene and durability.
8.	Steel Doors and Windows	Steel frames with wire mesh or louvers will be used for windows, doors and ventilators.
9.	PVC Pipes and Fittings	For clean water supply and wastewater drainage, high-quality PVC piping of various diameters will be used.
10.	Electrical and Lighting Materials	Standard copper electrical cables and conduits for internal wiring will be used in compliance with local electrical codes. Distribution box and switch gear will be used to manage electrical supply to the roasting, packaging, and lighting systems.

11.	Fasteners and Joinery Items	Nails, screws, bolts, door locks, hinges, and other fittings will be required for structural assembly.

2.6 Project Activities during Operation Phase

During the operation phase, the upgraded coffee mill will engage in a series of integrated activities aimed at adding value to coffee through processing, roasting, packaging, and marketing.

After undergoing primary processing, coffee beans will be roasted to desired profiles depending on market preference. Roasted beans may be ground on-site, after which the coffee will be packaged using the installed packaging equipment into retail-ready pouches, sachets, or containers. The packaging process will include weighing, sealing, labelling, and, where applicable, batch coding for traceability.

Other supporting activities during this phase will include quality control, marketing and distribution of roasted and packaged coffee, staff management and training, routine maintenance of machines, and engagement with stakeholders such as farmers, buyers, regulatory agencies, and certification bodies.

2.7 Wastes to be Generates and Methods of Disposal

Wastes likely to be generated during construction as well as operational phase of the sub-project is presented in Table 2.

Table 2: Waste to be generated and disposal methods

Construction Phase			
S/N	**Type of Waste**	**Source of Waste**	**Disposal Methods**
1.	Construction debris	Includes broken stones, concrete offcuts, unused sand, ballast, and cement bags	Non-reusable construction debris should be collected and disposed of at a designated and approved construction waste disposal site by the county government
2.	Metal and wood scraps	Leftovers from structural steel, roofing sheets, timber offcuts, and formwork	Metal, timber offcuts, and leftover materials should be reused on-site where possible or sold to scrap dealers
3.	Excavated soils and rocks	Resulting from site preparation and levelling	Suitable excavated soils and rocks should be used for backfilling or landscaping.
4.	Human waste	From construction workers on-site.	Construction workers should be allocated a toilet for their use during construction/installation work
5.	General domestic waste	Food wrappers, plastic bottles, and leftover food from workers	On-site segregation of recyclables from general waste should be practiced for efficient disposal
Operation Phase			
6.	Organic waste (coffee husks, pulp, and defective beans)	Generated from pulping, hulling, and sorting processes	Coffee pulp and husks can be composted and used as organic manure, or supplied to farmers as animal feed or for briquette production

7.	Waste water	Produced during fermentation, washing of beans, cleaning of equipment, and floors	Wastewater should be directed to a sedimentation or soak pit system or treated through bio-digestion or constructed wetlands to prevent pollution
8.	Packaging waste	Includes plastic films, paper labels, cardboard, and defective packaging material	Recyclable packaging waste such as cardboard and plastic should be sorted and sent to recycling facilities
9.	Dust and chaff	From roasting and grinding processes	Installation of dust extractors or filters in the roasting and grinding sections to minimize air pollution
10.	Oil and grease residues	From maintenance of roasting and packaging machines	Should be collected in oil traps and disposed of by licensed hazardous waste handlers
11.	Solid domestic waste	From administrative and staff facilities (paper, food waste, bottles, etc.)	Should be sorted, collected in labelled bins, and disposed of regularly at licensed disposal sites by county-approved waste collectors
12.	E-waste or worn-out equipment parts	From damaged electrical or electronic components over time	Should be handled through authorized e-waste recyclers or returned to manufacturers if take-back programs exist.

CHAPTER:3 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 Introduction

This section outlines the key legal, regulatory, and institutional frameworks applicable to the proposed upgrade of the coffee mill. The purpose is to ensure that the project is implemented in full compliance with relevant Kenyan laws, policies, and regulations, as well as applicable international standards. The project activities comprising construction of a processing unit, installation of coffee roasting and packaging equipment, and commercial coffee processing operations are subject to a variety of environmental, health, safety, labour, trade, agricultural, and heritage laws.

3.2 Relevant Policies

The relevant policies for the proposed upgrade of the coffee mill are presented in Table 3.

Table 3: Key Relevant Policies for the proposed coffee Mill Upgrade

No	Policy	Description	Relevance to the project/compliance
1.	Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019–2029	The ASTGS 2019–2029 is Kenya's 10-year strategic blueprint aimed at transforming the agriculture sector into a more productive, commercialized, and competitive industry. It focuses on increasing smallholder farmer incomes, enhancing value addition, improving market access, and ensuring food and nutritional security.	*The proposed upgrade of the coffee mill is fully aligned with the objectives of the Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019–2029. It contributes to agricultural modernization, value addition, smallholder empowerment, job creation, and private sector-led rural industrialization.*
2.	National Environment policy 2013	The Policy sets out important provisions relating to the management of ecosystems and the sustainable use of natural resources. The policy seeks to develop an integrated approach to environmental management, strengthening the legal and institutional framework for effective coordination, promoting environmental management tools. The Policy recognizes ESIA as a tool for environmental management.	*This ESIA study has developed an ESMP to mitigate the impacts that may result during all phases of the proposed project. The preparation of this ESIA report is in accordance with the requirements of this Policy which the proponent has abided by.*

3.	Kenya Vision 2030	This is Kenya's economic development blueprint covering the period 2008 – 2030 which aims at making Kenya a newly industrializing middle-income country providing high quality life for all its citizens by the year 2030. The vision is based on three "pillars" i.e., Economic, Social, and Political pillars. The Economic Pillar aims at providing prosperity of all Kenyans through an economic development programme aimed at achieving an average GDP growth rate of 10 % per annum for the next 25 years. The Social Pillar seeks to build "a just and cohesive society with social equity in a clean and secure environment." The Political Pillar aims at realising a democratic political system founded on issue-based politics that respects the rule of law, and protects the rights and freedoms of every individual in the Kenyan society.	*The coffee mill upgrade supports Vision 2030 by promoting agro-processing, enhancing coffee quality, creating employment, and contributing to economic diversification within the agricultural value chain.*
4.	Bottom-Up Economic Transformation Agenda (BETA)	The Bottom-Up Economic Transformation Agenda (BETA) is the flagship development framework of the Government of Kenya (2022–2027). The agenda emphasizes support for sectors that employ the majority of Kenyans, especially agriculture, MSMEs, manufacturing, housing, and digital economy.	*The proposed coffee mill upgrade project is strongly aligned with the Bottom-Up Economic Transformation Agenda (BETA). It supports rural industrialization, job creation, agricultural value addition, MSME growth, and local economic empowerment.*

3.3 Institutional Framework

The key institutions involved in the coffee mill upgrade and their respective roles during both the construction and operation phases is presented in Table 4.

Table 4: Institutions Relevant to the proposed coffee mill Upgrade Sub-project in Chesikaki Bungoma County

No.	Institution	Role during construction	Role during operation
1.	NEMA	a) Review and approve the ESIA report. b) Issue the Environmental Impact Assessment (EIA) license. c) Monitor compliance with approved Environmental and Social Management Plan (ESMP). d) Conduct site inspections and enforce mitigation measures.	a) Monitor environmental performance (e.g. waste management, emissions). b) Issue instruction to the proponent to initiate environmental audits or renewals of licenses.
2.	County Government of Bungoma	a) Approve building plans and issue development permissions. b) Issue business permits, construction permits, and fire safety approvals. c) Enforce local environmental health and waste disposal bylaws.	a) Issue or renew the Single Business Permit and public health license. b) Regulate sanitation, public health, and solid waste collection.
3.	Agriculture and Food Authority (AFA) – Coffee Directorate	a) Provide technical advice on facility design to ensure compliance with coffee sector standards. b) May conduct pre-licensing inspection of proposed processing equipment.	a) Issue coffee processing license. b) Oversee quality control, traceability, and certification of coffee products.
4.	Kenya Bureau of Standards (KEBS)	a) Approve standards for coffee processing equipment.	a) Certify roasted and packaged coffee products with the Standardization Mark (SM).

			b) Enforce compliance with food safety, labelling, and packaging standards. c) Conduct product sampling and inspections for market surveillance.
5.	Ministry of Health / County Public Health Office	a) Inspect worker sanitation and ensure construction does not pose public health hazards.	a) Inspect premises and issue food handling and hygiene certifications. b) Monitor sanitary conditions, pest control, and disease prevention in food processing areas.
6.	Directorate of Occupational Safety and Health Services (DOSHS)	a) Inspect construction sites for compliance with Occupational Safety and Health Act.	a) Register the coffee processing facility as a workplace. b) Inspect working conditions, ventilation, and equipment safety. c) Monitor employee welfare and accident reporting systems.
7.	Kenya Industrial Research and Development Institute (KIRDI)	a) May offer technical input on equipment layout and energy efficiency.	a) Can provide support on product innovation, roasting techniques, and value addition best practices.

3.4 Legal Framework

The numerous national legislation that are pertinent to the proposed project's environmental management are listed in detail in Table 5. The Environmental Management and Coordination Act (EMCA 1999), as revised in 2015, will supersede any contradicting regulation at all times.

Table 5: The Kenya National Legislations Pertinent to the Proposed Project

No	Legislation	Description	Applicability/compliance in the proposed project
1.	The Constitution of Kenya 2010	The Constitution of Kenya is the supreme law of the Republic and binds all persons and all state organ at all levels of government. It provides a broad framework regulating all existence and development aspects of interest to the people of Kenya, and along which all national and sectoral legislative documents are drawn. Article 42 of the chapter 4, "The Bill of Rights", confers to every person the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generation through legislative measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70.	*The proponent of the project will ensure that every activity from construction, installation to operation of the coffee processing plant is in tandem with the constitutional provision of adherence to the right of every individual to a clean and healthy environment, protect and conserve the environment and ensure sustainable developments. This is be achieved by developing and adhering to the spelt out environmental management plan to curb probable adverse effects of the proposed project.*
2.	Environmental Management and Coordination Act, 1999 (Revised 2015)	The Act introduces two important aspects of environmental management, which are directly related to the proposed project: Environmental Impact Assessment (EIA) and Environmental Audit (EA). Section 58 (1) has underscored that any person being a Proponent of a project, shall, before financing, commencing or proceeding, submit an EIA report to the National Environmental Management Authority (NEMA) of Kenya. Section 68 (1) gives NEMA the mandate for carrying out all environmental audits of all activities that are likely to have significant	*The proponent has complied with the EMCA Act by undertaking an Environmental Impact Assessment of the proposed project.*

		impacts on the environment. It authorizes environmental inspectors, as appointed by NEMA to enter any development and determine how far the activities carried out conform to statements in the EIA study.	
3.	The Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019)	These regulations operationalize EMCA by outlining the ESIA process, public participation, licensing, and environmental audit procedures. They specify the categories of ESIA reports i.e. Summary Project Reports for low risk projects, Comprehensive Project Report for medium risk projects and Full Study Report for high risk projects, the regulations also specify timelines for review, and obligations of project proponents.	*This framework guides the preparation and submission of the ESIA for the coffee mill project and future environmental audits during its operation.*
4.	Crops Act (2013)	This Act classifies coffee as a scheduled cash crop and provides a legal framework for the promotion and regulation of all scheduled crops in Kenya. It mandates good agricultural and post-harvest practices and assigns oversight responsibilities to the Agriculture and Food Authority (AFA) through its Coffee Directorate.	*The proponent is required to comply with quality and safety standards prescribed by AFA, especially in storage, handling, and processing of coffee. Licensing from AFA's Coffee Directorate will also be necessary for the mill's operation.*
5.	The Coffee (General) Regulations Legal Notice 120 OF 2016	According to section 8 of the regulations, The following licences shall be issued by the Authority (AFA): (a)a coffee roasters' licence authorizing the holder to conduct the business of roasting coffee for local sale or for export; (b)a warehouseman's licence authorizing the holder to conduct the business of warehousing coffee; (c)a coffee trader's licence authorizing the holder to buy clean coffee from the Exchange or import clean coffee from outside Kenya for processing in Kenya for sale locally or for export; The licences issued under this Regulation shall be subject to such conditions as the issuing authority may prescribe.	*The proponent shall apply for the relevant licenses from the AFA's Coffee Directorate*

		A grower may enter into an agreement with other growers within the same county or region for purposes of accessing economies of scale in pulping, milling, warehousing, marketing or roasting coffee, and shall for that purpose (a) Apply for the necessary licences from the Authority; or (b) Where the parties to the agreement already hold such licences, inform the Authority accordingly in writing.	
6	Agriculture and Food Authority Act, CAP 317	This Act establishes the AFA, which regulates and promotes agricultural activities including coffee production, processing, and marketing. The AFA is mandated to ensure compliance with standards, issue licenses, and oversee the Coffee Directorate.	*Before commissioning, the proponent will need to seek AFA's approval for registration as a coffee processor or roaster, depending on the scope of operations.*
7.	Public Health Act (cap. 242) (Revised,2017)	The Public Health Act (Cap. 242) is a key legislation in Kenya that provides for the prevention and suppression of diseases and the promotion of public health and sanitation. It empowers public health authorities to regulate and inspect premises, ensure food hygiene, and enforce health standards in both residential and commercial settings.	*The proponent must provide adequate and hygienic sanitation facilities across the sub-project phases.* *The proponent must ensure clean working surfaces, protective clothing for staff, pest control measures, and regular cleaning of equipment and packaging areas.* *Food areas must be separated from waste and sanitation areas to avoid cross-contamination.* *A public health license or food handling certificate will be required for the facility to legally operate.*
8.	Food, Drugs and Chemical Substances Act, Cap. 254	According to the Act, any person who sells any food that— (a)has in or upon it any poisonous or harmful substance; or (b) is unwholesome or unfit for human consumption; or (c)consists in whole or in part of any filthy, putrid, disgusting, rotten, decomposed or diseased substance or foreign matter; or	*The proponent must ensure the facility comply with the food safety requirements for handling, processing, and packaging to ensure the coffee is not contaminated or harmful to consumers. This includes maintaining cleanliness in processing*

		(d) Is adulterated, shall be guilty of an offence. Any person who labels, packages, treats, processes, sells or advertises any food in contravention of any regulations made under this Act, or in a manner that is false, misleading or deceptive as regards its character, nature, value, substance, quality, composition, merit or safety, shall be guilty of an offence. Any person who sells, prepares, packages, conveys, stores or displays for sale any food under insanitary conditions shall be guilty of an offence.	*areas, use of food-grade equipment, pest control, and ensuring staff are trained in hygiene practices.*
9.	County Government Act No. 17 of 2012 (amended 2016)	Part II of the Act elaborate on the functions and powers of the county government. The Act gives county the responsibility of planning and co-coordinating all developments within their areas of jurisdiction. Under the Fourth Schedule of the Constitution of Kenya (2010), counties are responsible for trade development, public health, land use planning, agriculture, and local licensing.	*The proponent must engage relevant county Government of Bungoma departments particularly Physical Planning, Trade, Agriculture, Environment, and Public Health to ensure compliance and secure all necessary authorizations for construction and operation of the upgraded facility.*
10.	The Water Act, 2016	The Act establishes the Water Resources Authority (WRA), which is responsible for regulating the use, conservation, and protection of water resources.	*The proponent must ensure that any abstraction of water for coffee processing or discharge of wastewater from the mill complies with licensing requirements from the Water Resources Authority (WRA), and effluent discharge standards to protect water bodies.*
11.	Physical and land use planning (no. 13 of 2019)	The Physical and Land Use Planning Act, 2019 (PLUPA) of Kenya provides the legal framework for regulating land use, development, and planning at national and county levels. The Act stipulates that once in every ten years, a county government shall prepare a county physical and land use development plan for that county. Each county physical and land use development plan shall be	*The proponent must obtain development permits, and building plan approvals from the Bungoma County Government Department of Physical Planning and Lands.*

		in conformity with the National Physical and Land Use Development Plan and any relevant Inter-County Physical and Land Use Development Plan. Section 57 of PLUPA requires developers to obtain development permission from county governments. If a project involves change of land use, an application must be submitted to the County Executive Committee Member in charge of planning.	
12	Occupational safety and health Act (no. 15 of 2007)	This Act provides for the safety, health and welfare of workers and all persons lawfully present at workplaces where any person is at work, whether temporarily or permanently. Part II of the Act on General Duties states the following: • **Section 6 (1)** that, "Every occupier shall ensure the safety, health and welfare at work of all persons working in his workplace". • **Section 6 (2) (b)** "Arrangements for ensuring safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances". • **Section 6 (2) (c)** "The provision of such information, instruction, training and supervision as is necessary to ensure the safety and health at work of every person employed". **Section 13**: Workers must adhere to safety guidelines and report unsafe conditions. **Section 16**: Employers must provide clean drinking water, toilets, and first aid stations. Section 18: Proper shoring and barricading of trenches deeper than 1.5 meters.	*The contractor(s) and the Proponent will ensure the safety and health of those employed during construction and installation of the coffee roasting and packaging machines.* *Before commissioning, the proponent must ensure the facility is registered as a workplace by the (DOSH) and that all the requirements of a workplace are met.* *During the operation phase, the proponent must ensure safe working conditions, use of personal protective equipment (PPE), ventilation, fire safety, and regular inspections by the Directorate of Occupational Safety and Health Services (DOSHS).*

		Section 55: All construction machines must be well-maintained and used by trained personnel. Non-compliance can result in fines, project shutdowns, or legal action.	
13.	Work injury benefits (no. 13 of 2007)	This Act provides for compensation for employees on work related injuries and diseases contacted in the course of employment and for connected purposes. The Act includes compulsory insurance for employees. The Act defines an employee as any worker on contract of service with employer.	*During construction and operation of the coffee mill, the contractor and the proponent must ensures that workers are covered in case of accidents or occupational illnesses.*
14.	Employment Act No. 11 of 2007 (Amended 2022)	**Section 5:** Employers cannot discriminate based on gender, age, disability, or race. Workplace harassment and abuse are prohibited. **Section 9**: Every contract lasting more than three months must be in writing and workers must receive clear employment terms, including wages, working hours, benefits, and condition. **Section 17**: Employers must pay wages on time, at least once a month. **Section 27**: Normal working hours should not exceed 8 hours a day or 48 hours per week. Employees working beyond 52 hours per week (or 60 hours for farm workers) are entitled to overtime payment. **Section 35:** Employers must provide notice before termination or pay compensation. **Section 40:** Redundancies (e.g., after construction is completed) require prior notice, severance pay, and consultation with affected employees. **Section 53:** Employment of children under 13 is strictly prohibited. Children aged 13–16 can only do light work that doesn't interfere	*During both the construction and operation phases, the coffee mill will engage various categories of workers including casual labourers, skilled technicians, machine operators, packers, cleaners, and administrative staff. The Act requires that all employees be issued with written employment contracts (except for purely casual jobs lasting less than three months). These contracts must outline job descriptions, working hours, remuneration, and terms of service.* *The project proponent must ensure that hiring practices promote gender inclusivity and fair treatment of all employees, including women and youth who may participate in processing or packaging roles.* *The proponent should also liaise with the Ministry of Labour and maintain proper*

		with education. Children under 18 cannot work in hazardous conditions.	*employment records to support transparency and regulatory compliance.*
15.	Children Act (No. 29 of 2022)	The Act provides a comprehensive legal framework for the protection and welfare of children**.** The Act upholds children's right to health, education, and a safe environment**.** Additionally, Section 15 protects children from hazardous labour.	*The contractor and the project proponent should ensure that no minors are engaged, especially in hazardous activities such as construction, roasting, or machine operation.*
16.	HIV and AIDS prevention and control (no. 14 of 2006)	**Section 7** of the Act mandates the government to ensure the provision of basic information and instruction on HIV and AIDS prevention and control to employees in both public and private sectors. This includes promoting awareness about causes, transmission modes, consequences, and prevention methods. Unless the employer can demonstrate to a tribunal that the employment needs a specific state of health or medical or clinical condition, **Section 31** forbids any form of discrimination against qualified personnel based on real, perceived, or suspected HIV status.	*During recruitment and employment for both the construction and operational phases of the coffee mill, the project proponent must ensure that:* • *No job applicant or employee is denied work, demoted, or terminated based on their HIV status.* • *HIV testing is not used as a precondition for employment, unless prescribed by law for specific health-sensitive roles (which coffee processing typically does not fall under).* *The coffee mill's management must ensure that medical information is kept private and is not disclosed without the employee's written consent. The proponent is encouraged to implement HIV sensitization programs in collaboration with the Ministry of Health, local NGOs, or county health departments.*
17.	Sustainable waste	Sub-section 12 (1) states that all public and private sector entities shall segregate non-hazardous waste into organic and non-organic	*During construction and operation phases, the contractor and the proponent will provide labelled*

	management (no. 31 of 2022)	fractions. Sub-section 12 (2) requires the segregated waste to be placed in properly labelled and colour coded receptacles, bins, containers, and bags.	*waste collection bins at each collection point to separate wastes into appropriate sorts.*
18.	The Energy Act, 2019	The Energy Act of 2019 was passed in response to calls to, among other things, control midstream and downstream petroleum and coal industries, promote renewable energy, and encourage the discovery, recovery, and commercial use of geothermal energy.	*Given the energy requirements for operating roasters and packaging equipment, the proponent must ensure that the project complies with energy efficiency and electrical installation standards outlined in this Act.*
19.	National Construction Authority (2011)	The National Construction Authority Act, Number 41 of 2011, modernizes, reforms, and controls the Kenyan construction sector. Each and every contractor needs to register with the Authority. Any building activity that is done without first registering with the Authority is illegal. The Act includes provisions pertaining to the safety and quality requirements for any construction activities.	*During construction, the contractor will engage qualified and registered contractors and engineers.*
20.	Climate Change Act, 2016	The Act provide for a regulatory framework for enhanced response to climate change; to provide for mechanism and measures to achieve low carbon climate development, enhance climate change resilience and for sustainable development of Kenya. Section 15 of the Act requires public and private entities to integrate climate change actions into their development plans, programs, and operations.	*The project proponent is expected to adopt environmentally sustainable practices in construction and operations, reduce energy and water consumption, and engage with county structures for alignment with climate objectives.*
21.	Sexual Offences Act 2006	The **Sexual Offences Act (No. 3 of 2006)** of Kenya is a law designed to prevent and punish sexual offenses, protect victims, and ensure justice for survivors of sexual violence. The Act defines various **sexual offenses**, including **rape (Section 3), defilement (Section 8), sexual harassment (Section 23), indecent acts (Section 11), and sexual exploitation (Section 15)**, among others. It provides strict penalties, including life imprisonment for	*As part of the Contractor-ESMP (C-ESMP), an accountability and response framework will be developed. The SEA action plan will adhere to national SEA policies and regulations as well as the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works*

		defilement involving minors under 11 years and up to 20 years for rape. The Act also criminalizes offenses such as **sexual assault (Section 5)**, which includes forced sexual acts without consent, and **gang rape (Section 10)**, which applies when multiple perpetrators are involved. It addresses **child pornography (Section 14)** and **trafficking for sexual exploitation (Section 13)**, ensuring protection against exploitation through digital or physical means. The law emphasizes informed consent, recognizing that coerced or manipulated consent is invalid. The Act also applies to workplaces and institutions, prohibiting sexual harassment and abuse of power for sexual favours. It establishes mandatory reporting obligations, especially for cases involving minors, ensuring that authorities intervene promptly. By enforcing strict penalties and providing legal protection, the Sexual Offences Act aims to reduce sexual violence, promote justice, and safeguard the dignity of all individuals in Kenya.	*(September 2018). In addition to incorporating SEA into employment contracts, the contractor will engage with the County to raise awareness among employees and other site personnel. Any violation will be reported and dealt with legally.*
22.	The Standards Act Cap 496	In order to protect public health and safety, this Act encourages the standardisation of commodity specifications and establishes standards for both commodities and codes of practice. It creates the Kenya Bureau of Standards (KEBS), whose duties include: promoting industry and commercial standardisation; and arranging for or providing facilities for the testing and calibration of scientific apparatus, gauges, and precision instruments in order to assess their accuracy by comparing them to standards that the Minister has approved based on the Council's recommendation and to issue certificates in relation to those standards.	*The proponent must engage with KEBS early in the operation phase to obtain the necessary product certifications and implement internal quality control systems. This will enhance market credibility, consumer trust, and competitiveness both locally and internationally.*

23.	The National Museums and Heritage Act 2006	An Act of Parliament to repeal the National Museums Act and the Antiquities and Monuments Act (Cap. 215), to establish, control, manage, and develop national museums, and to identify, protect, conserve, and transmit Kenya's cultural and natural heritage, while also consolidating the laws pertaining to national museums and heritage.	*The contractor and the proponent must remain vigilant for heritage finds, consult NMK where necessary, and integrate a chance finds procedure into the Contractor's Environmental and Social Management Plan (ESMP).*
24.	Cooperative Societies Act of Kenya (Cap 490)	The Act provides for the promotion of cooperative development as a means of enhancing socio-economic empowerment, especially among small-scale producers, traders, and service providers. It outlines the legal rights and obligations of cooperative societies, their members, and the regulatory bodies, and establishes the office of the Commissioner for Cooperative Development to oversee compliance and capacity building within the sector. The Act allows cooperatives to engage in business activities, own property, enter contracts, and access credit or other financial services for the benefit of their members.	*The board of management of the Mt. Elgon farmers' cooperative union should ensures collective ownership and shared benefits among members, most of whom are smallholder coffee farmers.*
25.	(EMCA) Air Quality Regulations 2024	These regulations apply to all stationary and mobile sources of emissions and set national ambient air quality standards, emission limits, and compliance procedures. Key provisions include the requirement for emission licenses from NEMA for facilities that release pollutants into the air, mandatory installation of emission control systems, regular air quality monitoring, and strict limits for pollutants such as particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxides (NO_x), sulphur oxides (SO_x), volatile organic compounds (VOCs), and carbon monoxide (CO). The regulations also outline procedures for managing emissions in designated "controlled areas" and establish occupational exposure limits to protect worker health. Overall, the 2024 Air Quality Regulations enhance environmental and	*The project must secure an emission licence for the roasting unit, with approval contingent on demonstrating effective emission control technologies and compliance with pollutant limits.*

		public health protection by ensuring that industrial and commercial activities, such as coffee roasting, are carried out responsibly and with minimal air pollution impact.	
26.	(EMCA)Water Quality Regulation, 2024	The Environmental Management and Coordination (Water Quality) Regulations, 2024 (Legal Notice No. 177 of 2024) establish Kenya's updated legal framework for protecting all forms of water—drinking, agricultural, industrial, recreational, fisheries, and wildlife use. The regulations set enforceable water-quality standards, restrict pollutant discharges, mandate buffer zones around water bodies, and require permits for wastewater use and abstraction. They also introduce enhanced fees for controlled facilities through the Eleventh Schedule and align Kenya with international water protection benchmarks.	*The proponent should:* • *Install appropriate wastewater treatment (e.g., grease traps, sedimentation tanks, bio-digesters) to meet discharge standards before reuse or disposal;* • *Design, construct, and maintain buffer zones of at least 6–50 m around any nearby streams or springs used during operations;* • *Apply for an Effluent Discharge License from NEMA and adhere to the permit's conditions, including periodic sampling and reporting;* • *Avoid direct or untreated wastewater release into natural water bodies;* • *Promote water reuse (e.g., for toilet flushing or landscaping) to minimize abstraction and contamination risk.*
27.	(EMCA)Noise and Excessive Vibration Pollution Control Regulation,2009	The Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 (Legal Notice 61 of 2009) are designed to prevent and control intrusive noise and excessive vibrations that could harm human health, disturb communities, or damage property. They set maximum permissible noise and vibration levels for different zones (residential, commercial, and industrial), prohibit unnecessarily loud or disruptive sound, and require licensing from NEMA (or county authorities) for sources likely to exceed these levels. The regulations also outline exemptions	*The facility's roasting machinery, generators, deliveries, and other operational equipment could generate significant noise and vibrations. Under these regulations, the proponent must ensure that noise levels remain within legal limits.*

		for emergency services or essential events, but otherwise restrict disturbance during sensitive hours and near designated "silent zones" like schools and health facilities.	
28.	(EMCA)Waste Management Regulation, 2024	The Environmental Management and Coordination (Waste Management) Regulations, 2024 (Legal Notice No. 178 of 2024) establish Kenya's updated framework for handling all waste streams—from generation through collection, segregation (including mandated color-coding of bins for organic, recyclable, and general waste), transport (licensed by NEMA), treatment, storage, and disposal—aligned with the polluter-pays principle and circular economy goals. They introduce requirements for waste segregation at source, licensing of waste transporters and disposal facilities, mandatory tracking and reporting, and strict management of hazardous and industrial wastes, with substantial penalties (fines or imprisonment) for non-compliance.	*The facility will generate both general and organic waste (e.g., packaging materials, coffee husks/chaff, and used PPE). To comply, the proponent must implement on-site waste segregation, use color-coded bins, contract licensed waste transporters, and either send waste to authorized disposal or pursue composting/reuse of organic waste, supporting the country's circular economy agenda and avoiding legal or financial penalties. Additionally, if any hazardous waste is produced (e.g., used oils or solvents), it must be managed under the enhanced hazardous waste protocols.*
29.	(EMCA) Management and Control of Plastic Packaging Materials Regulations, 2024	The regulations establish Kenya's strongest legal framework yet for minimizing plastic pollution. These regulations impose strict controls on the manufacture, importation, distribution, and disposal of plastic packaging, including bans on non-biodegradable single-use plastic bags and lightweight plastic films. They mandate the extended producer responsibility (EPR) model, requiring companies to finance or organize collection, recycling, or disposal of the plastic packaging they introduce to the market. Other provisions include standardized labelling for recyclability, minimum recycled-content requirements, and reporting obligations to regulators to ensure accountability.	*Given the project's reliance on packaging materials, it is essential to prioritize biodegradable, recyclable, or reusable packaging compliant with labelling and recycled-content rules. The proponent will also need to register under the EPR system and coordinate collection or take-back programs for used coffee bags.*

3.5 World Bank Environmental and Social Standards (ESS)

The World Bank Environmental and Social Framework (ESF) is a set of policies that governs how the World Bank addresses environmental and social risks in projects it finances. It came into effect on October 1, 2018, replacing the earlier Safeguard Policies. Table 6 shows the applicability of World Bank Environment and Social Framework to the proposed project.

Table 6: World Bank ESS and their Relevance to the proposed Sub-Project

Operational policy	Policy Description	Relevance
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	It requires project proponents to identify, assess, and manage environmental and social risks throughout the project lifecycle, ensuring sustainable outcomes. ESS1 emphasizes the preparation of appropriate instruments such as Environmental and Social Impact Assessments (ESIA), Environmental and Social Management Plans (ESMP), and stakeholder engagement processes, tailored to the nature and scale of the project.	After screening, the proposed Mount Elgon Coffee mill upgrade project was categorised as category B since the impacts are site-specific and, for the most part, standard mitigation measures are easier to implement. The Environmental and Social Impact Assessment requirement is being met by this ESIA. The WB policy framework on best practices must be followed when implementing the project.
ESS2: Labour and Working Conditions	The framework ensures safe, fair, and healthy working conditions, including protection against forced labour and child labour, fair wages, and grievance mechanisms for workers.	The project proponent and contractor must ensure safe and fair working conditions for construction and coffee processing workers, including compliance with labour laws, fair wages, occupational health and safety measures, and access to a grievance redress mechanism for workers.
ESS3: Resource Efficiency and Pollution Prevention and Management	It focuses on promoting the sustainable use of resources (including energy, water, and raw materials) and managing pollution to minimize negative environmental and human health impacts throughout the project lifecycle. ESS3 covers air, water, and soil	Construction materials such as sand and ballast should be sourced from NEMA and county government approved sources. The proponent must put in place measures to prevent water wastage and discharge of untreated waste water into the water sources.

	pollution, hazardous and non-hazardous waste management, and greenhouse gas (GHG) emissions.	The proponent should install appropriate emission control technologies (e.g., filters, scrubbers) to reduce air pollution from the coffee roasting and protect worker and community health. The proponent is mandated to ensure safe handling, storage, and disposal of waste, and encourages recycling or composting where possible.
ESS4: Community Health and Safety	Requires projects to protect local communities from health and safety risks, including traffic hazards, exposure to chemicals, and emergency response planning.	During the construction phase, the contractor and the proponent should implement traffic management plans, install warning signage, and engage the public on safety protocols to minimize likely adverse impact from the project. During operation phase, the proponent must put in place pollution control systems, enforce waste management protocols, and ensure that operations do not negatively impact the surrounding environment.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.	The framework ensure protection of ecosystems, wildlife, and natural resources by ensuring sustainable project practices.	During construction phase, the contractor and the proponent should manage runoff and wastewater properly, and implement soil conservation measures to protect local ecosystems.
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	The framework aims to protect the rights, culture, identity, and livelihoods of Indigenous Peoples or communities with distinct social and cultural characteristics closely tied to their ancestral territories and natural resources.	The sub-project is located in Mount Elgon Sub-county, where the Sengwer, an Indigenous community recognized as a marginalized group in Kenya have historically lived in forested areas and maintain a strong spiritual and cultural connection to land and natural resources. Although the coffee roasting and packaging facility is situated in Chesikaki Ward, which may be outside core Indigenous territories, the proponent should ensure equitable access to

		project benefits, including opportunities for participation in coffee value chains, employment, and capacity-building.
ESS8: Cultural Heritage	The framework ensure protection of cultural heritage, including historical and archaeological sites, from project-related damage.	Excavation and land development could impact historical sites, sacred grounds, or cultural heritage. An archaeological impact assessment must be conducted, and a chance-find procedure must be in place to guide the contractor in case of any discoveries.
ESS10: Stakeholder Engagement and Information Disclosure	Requires consultation with affected communities, transparency, and grievance mechanisms.	The project proponent must engage farmers, local communities, government agencies, and civil society to ensure transparency, address concerns, and establish a grievance mechanism for affected stakeholders.

CHAPTER:4 CHARACTERISTICS OF THE PROJECT AREA

4.1 Background Information of the Sub project Investment

Mt Elgon Coffee Mills (MECOM) was registered in 1981 by the Mt. Elgon Coffee Union that had four coffee cooperative societies. Milling operations began in 2020, leading to a significant increase in the number of affiliated societies, which has now grown to 21. The Mill serves 21 affiliate coffee Cooperative Societies with a membership of 38,371 farmers. These societies are spread across Bungoma County, with a few coming from Vihiga, Busia, Kakamega, and Trans Nzoia Counties. In addition to working with societies, MECOM also collaborates with private coffee planters. The organization ventured into coffee marketing in 2023.

Over the years, the volume of coffee collected has fluctuated. In 2022, they collected 18,000 bags of parchment, which increased to 25,000 bags in 2023. However, due to weather changes, the collection dropped to approximately 12,000 bags in 2024. Despite these fluctuations, MECOM continues to process and cap its coffee to maintain quality standards. MECOM auctions its coffee at Nairobi Exchange Market. They believe ones they start roasting and packaging they will make more profits thus the farmers' payment will increase.

4.2 Overview of the Coffee Value Chain

4.2.1 National Perspective

Coffee is among the highest-traded commodities globally, with a volume of more than nine (9) billion kg annually. It sustains over 100 million people and is also the third most consumed beverage in the world, after water and tea. The coffee consumption is dominated by industrialized countries. Coffee production, globally, has steadily increased over the last decade. According to the International Coffee Organization (ICO), production has increased from 141.33 (50 Kg bag) million bags in the year 2011/12 to 175.35 million bags in 2020/21, representing a 24% increase (ICO, 2021). Overall, African coffee production contributes up to 12% of the global production of coffee beans. Ethiopia is the top coffee producing African nation, followed by Uganda, Cote d'Ivoire, Tanzania and Kenya (ICO, 2020). In East Africa, Ethiopia and Uganda dominate the region in coffee production, together accounting for 62% of sub-Sahara African coffee output. Kenya ranks 5th and accounts for 5% of the regional coffee production (ICO, 2020).

In Kenya, coffee is grown in 33 Counties occupying 109,385 hectares and by two (2) distinct categories of farmers: smallholder (70%) and estates (30%). The smallholder farmers are estimated to be 800,000 organized into 590 farmer Cooperatives Societies, whereas the number of active estate farmers is 2,694. Despite the smallholder farmers dominating Kenya's coffee sub-sector, their productivity lags at an average yield of 280 Kg/hectare annually, while estate yields averaged 466kg/hectare, with the national average being 280kg/hectare annually, while estates yield average being estimated at 318 kg/hectare. The national average coffee production is 2kg of cherry/tree per year against a potential of 30 Kgs. In 2021/2022, the country produced 51,853 Metric tons of clean coffee (AFA, 2021, 2022).

Over the years, the national coffee production has declined by about 70%. The decline is attributed to a host of challenges relating to production, processing, marketing and fluctuating global coffee prices. A review of the production trend over the last decade shows that Kenya's clean coffee production has oscillated between 40,000MT and 50,000MT. In the year 2021/22, the industry made a remarkable recovery in coffee production, achieving a production of 51,853 MT, which was an increase of 47% compared to 34,512 MT in 2020/21. Kenyan coffee is mainly exported to the European Union countries and the USA. The top ten export destinations during 2021/22 were USA, Belgium, Germany,

South Korea, Sweden, Tunisia, Australia, Denmark, Norway and Japan. The export values for 2020/21 season was KES 27 Billion and for 2021/22 was KES 34 Billion.

4.2.2 County Perspective

Coffee is one of the highly ranked priority value chains among industrial crop in Bungoma County. It is grown in all the 9 sub/counties, both by smallholder (84.25%) and estate (15.75.1%) farmers, with total acreage estimated at 8,098 hectares. The bulk of the coffee produced, (96%), is exported to various destinations and only 4% is consumed locally. In the year 2021/2022 Bungoma earned KES1.85 billion in foreign currency from coffee exports. Despite the crucial role the sub-sector plays, coffee production and productivity has remained low at 0.3 MT of clean coffee per hectare against a potential of 12.0 MT per hectare. This low performance is attributed to a number of key challenges. These include inadequate supply of quality inputs, low adoption of Technologies, Innovations and Management Practices (TIMPs), increasing severity of pests and diseases, inefficiency of farmer cooperative societies, poor and uncoordinated agricultural extension services, and poor marketing structures.

The coffee sub-sector in Bungoma is one of the major contributors to the county's economy. It is a key contributor to foreign exchange earnings, family incomes, food security and employment to over 200,000 Kenyans. Bungoma is renowned for some of the best mild Robusta and Batian coffee varieties in the world, produced by both the smallholder and estate farmers estimated at 93,074 and 50, respectively. The county has 90% arable land with conducive ecological zones supporting a variety of key agricultural value chains where coffee is considered as flagship project according to the CIDP 2023-2027 which has cited Agricultural Value Addition and Agro-processing as a key pillar in improving the county's economy.

The County produces 99 percent Arabica coffee and less than 1 percent Robusta coffee. In the coffee year 2022/2023 the County produced a total of 2,572,818 Kgs of clean coffee which is equivalent to 18,009,726 Kgs of coffee cherries and an annual net income of 862 million. With an estimated acreage of 8,098 Ha. The County has potential to increase production to an average of 17 to 20 Kgs of cherry per tree from the current 2kgs per tree. Bungoma has established two coffee mills namely Musese Coffee Mill and Mt. Elgon Coffee Mill with a milling capacity of 1.2 tons/hour for each.

4.2.3 Project Area Perspective

Coffee production in Mount Elgon Sub-county is a significant agricultural activity that supports the livelihoods of thousands of smallholder farmers. The region's high altitude, fertile volcanic soils, and favourable climate conditions make it ideal for growing Arabica coffee, which is known for its high quality and rich flavour profile. Coffee farming in the area is primarily carried out by small-scale farmers organized into cooperative societies such as the Chebich, Kibingei, and Chesikaki Farmers' Cooperative Societies. These cooperatives play a vital role in supporting farmers through provision of inputs, extension services, and market access.

In recent years, there has been increased investment in coffee infrastructure in the sub-county, including the establishment of coffee mills such as the Mt. Elgon Cooperative Union Mill in Chesikaki. This mill, along with others in the region, has reduced farmers' reliance on distant milling facilities and improved the efficiency of post-harvest processing. The Bungoma County government, in collaboration with national agencies and development partners, has also been instrumental in reviving the sector through initiatives that include farmer training, distribution of improved seedlings, and promotion of value addition. Despite challenges such as fluctuating market prices and aging coffee

trees, coffee production in Mount Elgon continues to grow, driven by strong farmer organization and ongoing efforts to improve quality and sustainability, (AFA Coffee year book 2022/23).

4.3 Project Location

The MECOM is located in Cheptais of Bungoma County. It is off the main road from Bungoma to Cheptais Market/Town, and so quite accessible. It is well served with basic infrastructure including roads, water, electricity and internet connection.

4.4 Demographic and Population Profile

According to the 2019 Kenya Population and Housing Census, Mount Elgon Sub-county had a total population of 78,873 individuals—38,977 males, 39,893 females, and a small number identifying as intersex . The age distribution showed a young population, with approximately 46.2% under 15 years, 50.2% aged 15–64, and 3.7% aged 65 and above . The sub-county covers about 944 km², with a population density of approximately 84 persons/km².

Within this context, Chesikaki Ward, one of six wards in Mount Elgon Sub-county, had an estimated population of 27,894 residents in 2019. This places Chesikaki as one of the more populous wards in the sub-county.

4.5 Bio-Physical Characteristics of the Area

4.5.1 Climate

Mount Elgon Sub-county in Bungoma County experiences a highland equatorial climate, characterized by relatively cool temperatures and significant rainfall throughout the year. The area enjoys a bimodal rainfall pattern, with long rains typically falling between March and June, and short rains from September to November. The average annual rainfall ranges between 1,200 mm and 2,000 mm, largely influenced by the area's altitude and the presence of Mount Elgon, which creates orographic rainfall conditions.

Temperatures in the sub-county are generally moderate, with average daily temperatures ranging from 15°C to 25°C, making the climate conducive for agricultural activities, particularly the cultivation of coffee, maize, beans, and horticultural crops. The combination of ample rainfall, fertile volcanic soils, and favourable temperatures supports both crop and livestock farming, which form the backbone of the local economy. The relatively cooler and wetter conditions, especially at higher altitudes, also contribute to the maintenance of forest ecosystems and water catchment areas that are vital for the region's ecological sustainability.

4.5.2 Topography

Chesikaki Ward, located on the lower eastern slopes of Mount Elgon, is characterized by undulating hills and moderately steep gradients, interspersed with small flat valleys and riverine systems. The elevation in Chesikaki ranges between 1,800 to over 2,300 meters above sea level. This diverse topography supports both subsistence and small-scale commercial farming, particularly coffee, maize, and horticultural crops, while also playing a crucial role in water catchment and biodiversity conservation.

4.5.3 Geology and Soil

The dominant geological features in the sub-project area include volcanic rocks such as basalt, phonolite, and trachyte, which have over time weathered to form deep, fertile soils. The soils in Chesikaki are primarily well-drained, reddish-brown to dark brown andosols and nitisols, which are rich in organic matter and minerals, making them highly suitable for agricultural production. These soils exhibit good structure and moisture retention capacity, supporting the cultivation of a wide range

of crops, including coffee, maize, bananas, beans, and various horticultural produce. However, due to the area's sloping terrain, the soils are prone to erosion, particularly in areas with poor vegetation cover or unsustainable land use practices. To sustain soil fertility and prevent land degradation, soil conservation measures such as terracing, contour farming, and agroforestry are commonly practiced by farmers in the ward.

4.5.4 Hydrology

The high rainfall received in the area give rise to permanent rivers and streams. The rivers exhibit a radial drainage system, with most rivers originating from the Mount Elgon peaks. They provide for the livelihoods of people within and without Bungoma County. Their distribution is generally even and traverses the mountain slope, which makes them fast moving. Mount Elgon is a major catchment for L. Victoria and Turkana with its many tributaries draining into the major rivers that lead to these main water bodies. Rivers include: Kamukuywa, Sosio, Kimilili, Kibisi, Kuywa, Malakisi, Sit and Lwakhakha. The Lwakhakha River, which flow southwards, marks the international boundary between Kenya and Uganda.

4.5.5 Biological Environment

Around the sub-project area, the natural vegetation includes patches of indigenous montane forest, grasslands, and riverine vegetation along watercourses. These ecosystems provide habitat for a variety of plant species, some of which are endemic to the region, as well as animal species such as birds, small mammals, reptiles, and insects.

However, human activities such as deforestation, overgrazing, and expansion of agricultural land pose ongoing threats to the biological environment in the region.

The area has also exotic species of trees, the main ones includes: *Grevillea robusta, Eucalyptus spp., Cupressus lusitanica and Pinus patula.* These trees were mainly observed in private farm lands in the project area.

4.5.6 Air Quality

The air quality in the sub-project area is generally good due to its rural setting, low population density, and limited industrial activity. The area benefits from abundant vegetation, including woodlots, farmland, and natural grasslands, which contribute to natural air purification through carbon dioxide absorption and oxygen release.

However, localized air quality degradation may occur in the sub-project area due to specific human activities including: the operations of the coffee mill, use of firewood and charcoal for domestic cooking, occasional open burning of agricultural waste, bush clearing, as well as dust emissions from unpaved rural roads.

4.5.7 Noise Levels

Noise levels in Chesikaki Ward are generally low due to its rural and predominantly agricultural setting, which lacks major industrial, commercial, or high-traffic urban activities. However, intermittent noise disturbances occur from local human activities. These include the use of small machinery (such as coffee millers maize millers, water pumps, or chainsaws during tree felling), community gatherings or church services with loudspeakers, and vehicle noise from motorcycles and occasional trucks along rural roads.

Despite these occasional sources, noise pollution in the sub-project area remains minimal and localized, with no persistent or high-intensity sources. Nonetheless, future development and increased

mechanization may warrant consideration of basic noise control measures to preserve the area's quiet rural character.

4.6 Socio-Economic Characteristics of the Sub-Project Area

4.6.1 Agriculture

Crop farming and livestock production are the main sources of livelihoods for the majority households in the sub-project area. The average farm size is approximately four acres. The main crops grown in the area include: maize, beans, tomatoes, onions, coffee, tomatoes, onions, tobacco.

Livestock keeping is another critical component of agriculture in the sub-project area, with households rearing cattle, goats, sheep, poultry, and pigs. Livestock contribute to food security, income generation.

Despite its potential, agriculture in the sub-project area faces several challenges, including soil erosion, land fragmentation, post-harvest losses, and limited access to credit and modern inputs. However, ongoing support from government programs, NGOs, and farmer cooperatives is gradually helping to improve productivity and sustainability.

4.6.2 Ethnic Groups

The sub-project area is inhabited mainly by three main ethnic groups i.e. Sabaots, Luyhas (mainly Bukusu), and Tesos. Of these, the Sabaots are the majority. Individuals from the three ethnic groups have practised intermarriage for long ending up with some individuals speaking almost all the three ethnic languages. The indigenous ethnic group of the Ndorobos, although inhabit Mount Elgon sub-county are not common in Chesikaki which is the sub-project area, they inhabit the upper parts of the Mount Elgon in Chepkitale area where they practice limited amount of pastoralism.

4.6.3 Cooperatives Societies

The Mount Elgon Cooperative Union was formed by several cooperatives, and now has 24 Cooperatives as members. It has a board made of representatives of the Cooperatives. The Board is elected and provides strategic policy guidance and supervises the secretariat. The Secretariat is head by a Chief Executive Officer (CEO) who has a team of technically qualified officers. The Union has formed and established the Mt Elgon Coffee Mills, which does milling of parchment coffee from member cooperatives as well as private farmers. In addition, it receives coffee for milling from cooperatives that are not members, and also parchment coffee from outside the County.

4.6.4 Available Land for the Mill

The study established that MECOM already owns about two acres of land on which it mills green beans, with possible expansion potential around the mill. The Cooperative has also purchased an adjacent 1-acre land and are in the process of securing the title deed.

4.6.5 Energy

The sub-project area is served by the national grid electricity. Data from REREC as of 2022 showed that only 10.6% of household in the area were connected to electricity. The coffee mill relies on electricity for its operations and has in place a transformer supplying adequate power (3-phase). A 30 KVA generator is available for power back-up. Currently the plant operates during the day, but with the anticipated increase in its operations they could in future take advantage of the electricity costs incentives given by the KPLC to factories that operate at night/off-peak times. Furthermore, MECOM could look towards harnessing renewable energy from the sun and as well, from recycling biomass by-products of the processing processes.

4.6.6 Water Sources

Sources of water around the sub-project area include: ponds, streams/rivers, springs, wells, borehole as well as piped schemes mainly in peri-urban establishments such as Cheptais trading centre and adjacent neighbourhoods. MECOM is connected to the local water supply, and has a few tanks for rainwater harvesting. The panel of experts proposes that MECOM fully develops the roof catchment water resources, and stores it in large underground reservoirs for its factory use, as well as use in its nursery.

4.6.7 Quality of River Water

According to NEMA 2013, coffee factories are the main source of industrial pollution of rivers in the former Mount Elgon district. They discharge raw waste into rivers and most of them have no waste management systems. Due to low toilet coverage, human waste pollution of water sources is the main cause of diarrheal diseases. Water pollution can also be traced at watering points from livestock's discharge of urine and faecal waste into the river. Other sources of pollution include bathing and washing in rivers. Car wash activities though limited due to low vehicle ownership in the sub-county, do take place.

Application of excessive chemical fertilizer and other agro-chemicals, has also contributed to water pollution. These chemicals are washed into the river during and after heavy downpours. This is dangerous to human and animal health, as rivers are major source of domestic water supply.

Due to high rainfall and intensive cultivation of the undulating landscape, and deforestation, erosion and siltation occurs during the rainy seasons in the sub-project area. The water in the river is therefore quite turbid during the rainy season but becomes cleaner during the dry season. The following parameters relate to water quality in Mount Elgon sub-county as per NEMA 2013 report: PH: Varying from 6.8 to 8.3 for all of the rivers. TDS: Vary with seasons but are usually higher than the recommended WHO of less than 1,000 Mg/l during rainy season. TURBIDITY: All the rivers have turbid water of more than 60NTU. COLOUR: All these rivers have water that is highly coloured to tunes of more than 200 mg Pt/L. FAECAL COLIFORMS: They all have a high number of faecal coliforms of more than 100/100m/s. TOTAL COLIFORMS: All Rivers have waters of high counts of more than 200/100m/s. HARDNESS: All Rivers have water that is not hard.

4.6.8 Labour Requirements

MECOM is a working enterprise, fully established with employees. For the first 3-5 years, MECOM can make do with the current staffing levels. Efficiency and effectiveness may be improved by enhancing the capacity of its current staff, especially technicians. MECOM will need to recruit skilled roasters and contract coffee tasters. While MECOM has proposed to market its roasted coffee, the panel of experts believes that MECOM should instead sub-contract or work in partnership with a skilled and experienced marketer in order to sell its coffee. To the largest extent possible, MECOM should eschew the temptation to employ marketing and sales staff or be deeply involved in selling the coffee.

4.6.9 Gender Perspective in Coffee Value Chain

The gender perspective in the coffee value chain in Mount Elgon Sub-county and the entire Bungoma County reveals a clear disparity in roles, access, and benefits between men and women, despite both genders contributing significantly to coffee production. Women are heavily involved in key agricultural tasks such as planting, weeding, harvesting, and drying of coffee cherries. However, their contributions are often undervalued and under-recognized, with men typically controlling decision-making and income generated from coffee sales.

Although women provide the bulk of labour during production and post-harvest handling, men dominate the more lucrative segments of the value chain, such as marketing, cooperative leadership, and interactions with buyers. This dynamic contributes to unequal benefit-sharing and restricts women's participation in the higher levels of the coffee economy.

Stakeholders in the coffee value chain should work with farmer cooperatives to integrate a gender-sensitive approach into coffee production in the sub-project area. These include training programs that empower women with agronomic knowledge, financial literacy, and leadership skills; promoting joint ownership of land and income; and encouraging women's active participation in cooperative governance structures.

4.6.10 Security Law and Order

Security, law, and order in the sub-project area, are generally maintained through a combination of community vigilance, administrative leadership, and formal government institutions. The area experiences relative calm, though occasional cases of theft, land disputes, and boundary conflicts have been reported, particularly in areas bordering forest reserves or where population pressure on land is high. The primary institution responsible for law enforcement is the Chesikaki Police Post, which operates under the jurisdiction of the Cheptais Police Station, the main police station serving the wider Cheptais area. These police units are supported by community policing initiatives and Nyumba Kumi structures that enhance grassroots security efforts.

4.6.11 Solid Waste Management

Being predominantly rural with dispersed settlements, the sub-project area does not have dedicated waste collection services. Most residents rely on informal disposal methods such as burning, burying, or dumping in nearby plots.

4.7 Physical Infrastructure

4.7.1 Waste Water Management Infrastructure

The sub-project area generally fall outside the public sewer networks of Bungoma County. Residents therefore rely on on-site sanitation systems, such as pit latrines or septic tanks, which are typically evacuated by private de-sludging operators/ private "exhauster" services permitted by the county government of Bungoma. The Mount Elgon Coffee Mill facility has an existing pit latrine to manage human waste and sedimentation ponds to manage waste water from the coffee processing mill.

4.7.2 Road Infrastructure

The main tarmac road in the sub-project area is the Chwele-Namwela-Cheptais road which was upgraded to tarmac in the year 2020. Other secondary feeder roads in the area are unpaved and remain vulnerable to erosion and washout during heavy rainy seasons.

4.7.3 Other infrastructure

MECOM has 2 5000-bags (50 kg each) or 500 MT capacity warehouses and another building with ample space to accommodate the proposed roasting and packaging units. Another a warehouse to be constructed will enhance the storage capacity.

CHAPTER:5 PUBLIC AND STAKEHOLDER CONSULTATION

5.1 Public Participation

Public participation is a fundamental requirement under the Environmental Management and Coordination Act (EMCA), 1999 (Revised 2015) and the Environmental (Impact Assessment and Audit) Regulations, 2003. It aims to ensure that stakeholders particularly local communities likely to be affected by the project are informed, consulted, and involved in decision-making throughout the project lifecycle. Public engagement also promotes transparency, improves project design, and builds social license by integrating local knowledge and concerns into the ESIA process.

5.2 Purpose for the Public and Stakeholder Consultation

The purpose of public and stakeholder consultations for the proposed coffee mill upgrade project is to ensure that affected individuals, interest groups, and regulatory authorities are meaningfully involved in the planning and decision-making process. These consultations provide a platform for the local community, coffee farmers, cooperative society management and members, public officials, and other interested parties to understand the nature, scope, and potential impacts of the project, and to express their views, expectations, and concerns. The consultations aim to promote transparency, accountability, and community ownership of the project, while helping the proponent identify and address social, environmental, and economic risks early on. Additionally, stakeholder engagement ensures that traditional knowledge, cultural values, and local development priorities are incorporated into project design, thus enhancing the project's sustainability, acceptability, and regulatory compliance under Kenya's environmental laws and international best practices.

5.3 Public Consultation Process

The public participation process for the proposed upgrade of the coffee mill was conducted in accordance with the Environmental Management and Coordination Act (EMCA), 1999 (Revised 2015) and the Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019). The process was designed to ensure meaningful engagement with all parties likely to be affected by or have an interest in the project, and to incorporate their input into the Environmental and Social Impact Assessment (ESIA).

5.3.1 Stakeholder Identification and Mapping

The first step involved identifying key stakeholders whose interests could be impacted by the project. These included:

a) Local community members (coffee farmers and residents near the project site);
b) Village elders and community opinion leaders;
c) National Government Administration Officers (Assistant chiefs, chiefs, Deputy county Commissioners);
d) Officials from the County Government of Bungoma (Departments of Environment, Agriculture, Trade, Public Health, and Physical Planning);
e) Representatives of local cooperative societies;
f) Youth and women's groups representatives;
g) Environmental Officers from NEMA;

h) The proponent and the consultants

5.3.2 Information Dissemination

To ensure transparency, information about the project was shared with stakeholders two weeks in advance of the meetings. Posters and verbal invitations were distributed through local leaders, management of the Mt. Elgon Farmers Cooperative Union, and community networks to maximize attendance and awareness.

5.3.3 Public Meeting

Public meeting was organized on 3rd July at the proposed sub-project site in Chesikaki ward, Mount Elgon Sub-County, Bungoma count, where residents, including women, youth, elders, and persons with disabilities, were encouraged to voice their views, concerns, and expectations. A total of 81 individual attended the public meeting (55% male and 45% female); (List of attendance attached).

The engagement process was guided by the principles of transparency, inclusivity, and free, prior, and informed consent, as required by Kenyan environmental regulations and international standards. Feedback gathered during these sessions informed the identification of project impacts and the formulation of appropriate mitigation measures in the ESIA report.

5.3.4 Questionnaire Approach

In addition to public barazas and key informant interviews, the ESIA process employed the questionnaire approach as a structured method for collecting data from a wide range of stakeholders in the sub-project area. The questionnaires were designed to capture both quantitative and qualitative information on the community's perception of the proposed project, current environmental conditions, socio-economic activities, and potential environmental and social impacts.

Environmental and Social assessment assistant team administered the questionnaires to a representative sample of community members who attended the baraza. A total of 7 questionnaires were responded to, efforts were made to ensure gender balance and inclusivity during data collection (Questionnaire attached as annexes). The data obtained through the questionnaires was then analysed to complement findings from other engagement methods, helping to identify community priorities, potential areas of concern, and recommended mitigation strategies.

5.4 Issues Raised during the Consultation

During the public participation forum for the proposed upgrade of Mt. Elgon coffee mill in Chesikaki Ward, several key issues were raised by stakeholders reflecting community concerns, expectations, and suggestions. Primary concerns include the following:

Issues raised by women

- Air pollution from coffee roasting facility
- Noise pollution from the machines
- Waste water from the facility cleaning

Issues raised by youth

- Prioritization of the locals on employment during construction and operation phases
- Low wages and poor working conditions
- Generational gap and youth exclusion
- Gender based violence

Issues raised by men

- Economic hardship due to coffee market price fluctuations
- Increased competition from more industrialized competitors
- Climate change on coffee yield and the project sustainability

While the community expressed support for the project due to its potential to create jobs, improve incomes, and boost the local economy, they emphasized the need for transparency, inclusion, and environmental safeguards throughout the project lifecycle.

5.5 Grievance Management Mechanism

The proponent, a farmers' cooperative union with affiliated member societies, has an existing Grievance Redress Committee (GRC) which will need to be strengthened and aligned as per Cooperative Societies Act and NAVCDP requirement, the committee should be aligned to comprise representatives from the cooperative's management board, community representatives, youth and women's groups, and local administration.

During construction, the GRC will work with the contractor to ensure grievances related to construction work and related impacts on the community are received through designated channels such as suggestion boxes at the project site, direct reporting to cooperative offices, or through village elders. These grievances will be recorded, acknowledged within 48 hours, investigated, and resolved within 14 working days. For the non-sensitive grievances not resolved and are project related, they will be escalated as per various chains of command in NAVCDP from the ward level to sub-county, county and NPCU. For the sensitive grievances, they will be reported directly to the law enforcers and handled directly by the Kenya law enforcement institutions.

In the operation phase, grievances may include issues of mismanagement, benefit-sharing disputes, unfair coffee pricing, or delays in payments. Such concerns will be addressed through internal cooperative governance structures as stipulated in the Cooperative Societies Act, which mandates the use of member general meetings, supervisory committees, and dispute resolution frameworks provided under the Act. A clear escalation mechanism will also be in place, starting from the GRC, then to the cooperative board, and if unresolved, to the Commissioner for Cooperative Development. The cooperative will also maintain a grievance register and ensure regular communication to members on actions taken, thereby promoting accountability, member confidence, and social sustainability of the project.

CHAPTER:6 ANALYSIS OF PROJECT ALTERNATIVES

Legal notice 32 specifies the basic content of an Environmental Impact Assessment Report subsequent to which, subsection (i) requires an analysis of alternatives including site, design, technology and processes. The purpose of this section is to examine feasible alternatives to the project. The benefits of the proposed project will be considered against any potential environmental cost. The general principle involved in identifying alternative option(s) to a proposed development is to ensure that the option chosen would result in optimal social, environmental, and capital benefits not only for the developer, but also for the environment and stakeholders in the area. For the proposed upgrade of the coffee mill sub-project, the alternatives analysed in this ESIA report was based on the technical designs of the project, baseline study of the project area as well as potential environmental and social impacts analysed for the proposed project.

6.1 No Project Alternative

The No Project Alternative is a critical component of the Environmental and Social Impact Assessment (ESIA), used to evaluate the likely environmental, social, and economic outcomes if the proposed project is not implemented.

If the proposed project is not undertaken, the existing coffee milling facility is likely to continue operating in its current state. The absence of the extra processing unit, coffee roaster, and packaging equipment would result in continued reliance on traditional or low-capacity methods that limit productivity, reduce product quality, and constrain access to high-value markets. As a result, coffee farmers and local cooperatives will continue to experience low returns due to minimal value addition and weak market competitiveness.

While the No Project Alternative would avoid certain short-term environmental impacts, it would result in lost socio-economic and technological development opportunities for the region, stagnation in the local coffee value chain, and continued underperformance of the agricultural sector. Therefore, the No Project scenario is considered less desirable, especially when compared with the proposed project coupled with effective mitigation measures.

6.2 Alternative Location

The Alternative Location Option assesses the potential of relocating the proposed coffee mill upgrade to a different site other than the currently selected location. In environmental and social impact assessments, this analysis is essential to determine whether an alternative site would offer fewer environmental or social risks, or greater technical and economic viability.

In this case, the proposed site is already owned by the Mt. Elgon Farmers' Cooperative Society, which minimizes land acquisition costs and legal complications. The site has existing infrastructure used for primary coffee processing, and the proponent has previously been licensed by NEMA for similar processing activities at this location. This indicates that the site has already been evaluated for environmental suitability and found to be acceptable under national regulations. Furthermore, the area has no zoning restrictions, meaning that the proposed upgrade does not conflict with local land-use plans or county spatial development frameworks.

Relocating the project to an alternative site would introduce several challenges including:

a) Land acquisition costs and potential disputes;
b) Additional cost for utility connections e.g. electricity, water and sanitation facilities;

Moreover, the current site is strategically located near the farmer members of the cooperative, which facilitates easy delivery of raw coffee cherries and encourages strong farmer participation. Relocating

the facility would likely increase transportation costs, reduce farmer engagement, and negatively impact the supply chain efficiency.

Based on reasons presented in the above paragraph, the alternative location option is not preferred for the coffee mill upgrade sub-project in Chesikari ward. The current site is technically, economically, environmentally, and socially optimal for the proposed upgrade. Therefore, the project should proceed at the existing location, with implementation of mitigation measures to manage any potential impacts.

6.3 Alternative Design and Technology

6.3.1 Processing Unit Design Alternatives

a) Conventional Semi-Permanent Structure with Corrugated Iron Sheets and Timber

This option involves construction using timber posts, corrugated iron sheet walls and roofing, and a raised earthen or compacted floor. It is typically used in low-cost, smallholder settings. This alternative entails low initial construction cost, it is easy and quick to assemble using locally available materials and is suitable for temporary or mobile operations. However, this mode of construction has shorter lifespan and high maintenance need. This option may be suitable for informal or seasonal operations but is not recommended for modern, certified processing of roasted and packaged coffee.

b) Masonry-Walled Structure with Concrete Floor and Corrugated Roofing

This option features stone or brick masonry walls, a reinforced concrete floor, and a corrugated iron sheet or colour-coated steel roof. It may include metal or timber trusses, ventilation openings, and plastered internal walls.

The structure under this option is strong, durable, and provides insulation and security. However this option entails high initial capital investment.

6.3.2 Coffee Roasting Technology Alternatives

a) Conventional Drum Roaster (Manual or Semi-Automatic)

This is one of the most widely used conventional roasting systems, where coffee beans are placed in a rotating metal drum heated externally by gas, wood, or electricity. The drum rotates slowly to ensure even heat distribution.

Although the technology is widely available and proven, it entails high energy consumption.

b) Fluid Bed (Hot Air) Roaster

This technology roasts coffee beans by suspending them in a stream of hot air (fluidization), allowing even roasting and quick heat transfer. No drum is used.

This technology entails faster roasting times compared to drum roasters, the technology is also preferred due to its lower risk of scorching the beans. The technology also generates less chaff and particulate matter. One major disadvantage of the technology is its higher initial capital cost than conventional drum roasters.

c) Infrared Roasting Technology

This technology uses infrared radiation as a heat source for roasting coffee beans. Heat is transferred directly to the beans without contact with combustion gases or hot air. The technology entails energy efficient with precise heat control, produces uniform roasts with less risk of over-roasting, and is compact in size, suitable for confined spaces. The technology also entails low air emissions and minimal particulate release.

However, the main disadvantages of this technology is high initial investment and specialized spare parts, it is less common, hence fewer local technicians for maintenance.

Preferred Alternative

After careful analysis of the available options, the conventional drum roaster powered by LPG with emission control add-ons (e.g., afterburners or cyclone filters) is proposed as the preferred alternative. This option balances affordability, scalability, operational familiarity, and environmental responsibility.

6.3.3 Coffee Packaging Unit Technology Alternatives

Following roasting and grinding, packaging is a critical component of the value chain in coffee processing. It preserves freshness, ensures hygiene, communicates branding, and extends shelf life. Several packaging technology alternatives were considered based on scale, cost, environmental footprint, technical capacity, and market demands.

a) ***Manual Packaging with Heat Sealing***

This technology entails operators manually filling pre-formed bags or pouches with ground or whole bean coffee and seal them using a heat sealer. The technology entails low capital investment, is simple to operate and allows customization and artisan-style branding.

However, the technology is labour intensive, time consuming, has greater potential for inconsistencies in filling and sealing and it is exposed to contamination risks due to human contact.

b) Semi-Automated Packaging Machines (Weighing + Sealing)

This technological system combine electronic weighing scales with automatic bag sealing machines. Product is manually dosed into the machine, weighed, and sealed automatically.

The technology has improved accuracy in portioning and reduced material wastage, is faster than fully manual packaging, with moderate investment cost and is suitable for medium-scale operations. However major disadvantages of the technology is that it requires electricity and trained operators to operate, it has higher initial capital cost than manual system and it requires periodic maintenance.

c) Fully Automated Packaging Lines (Filling, Weighing, Sealing, Labelling)

This technology entails high-capacity systems that automatically fill coffee into pouches, weigh accurately, seal, and label the product with minimal human input. The technology may also include nitrogen flushing, vacuum sealing, and coding.

The technology entails high efficiency and productivity, consistent product quality and shelf life and is ideal for commercial scale packaging. However, the technology's main setbacks are high capital and maintenance costs, requires skilled personnel and stable power supply and is not economically viable for small cooperatives or pilot operations.

Preferred Alternative

The semi-automated packaging system is recommended as the preferred alternative for the coffee mill upgrade. This option balances operational efficiency, product quality, scalability, and environmental responsibility.

To further reduce the environmental impact, the proponent should encourage:

- Use of biodegradable or recyclable packaging materials, in the event that they opt to use plastic packaging materials, approvals should be sought from NEMA.
- Training staff on food-grade handling, waste reduction, and energy efficiency.

6.3.4 Waste Water Management Alternatives

The proposed coffee roasting and packaging facility is expected to generate wastewater primarily from equipment cleaning, floor washing, domestic use, and potentially cooling systems. Effective wastewater management is essential to protect local water resources and comply with Kenya's EMCA (Water Quality) Regulations, 2024. Several alternatives are available for managing wastewater sustainably, each with varying levels of complexity, cost, and environmental effectiveness:

a) Soak Pit with Grease Trap System (Basic Alternative)

This is a simple, low-cost option suitable for facilities generating moderate, non-toxic wastewater volumes. Wastewater first passes through a grease trap, which captures oils and solids, then drains into a soak pit where it infiltrates into the ground.

This alternative is cost-effective, easy to install and maintain and requires no electricity. However, the alternative is not suitable for large volumes or contaminated effluents and may pose groundwater pollution risks if not lined or maintained.

b) Constructed Wetlands or Reed Bed System

This nature-based system treats wastewater through biological filtration using wetland vegetation. Wastewater passes through gravel beds planted with reeds, where nutrients and contaminants are broken down naturally.

The alternative is eco-friendly, aesthetically pleasing and ideal for rural settings but requires large land space and is only ideal for moderate waste water volumes. It also requires periodic maintenance of vegetation and sludge.

c) Septic Tank with Anaerobic Baffled Reactor (ABR)

This system includes a septic tank for primary treatment and an anaerobic baffled reactor for enhanced breakdown of organic pollutants. It provides more effective treatment than a soak pit alone. The alternative is ideal for biodegradable wastewater and medium-scale operational facility. The technology has higher initial cost, requires periodic sludge removal and is less effective for chemical-laden waste.

d) Package Wastewater Treatment Plant (Mechanical/Biological Treatment)

This is a modular system involving mechanical, biological, or chemical treatment stages, often including sedimentation, aeration, filtration, and disinfection. Water treated through the technology is suitable for reuse (e.g., irrigation) and for commercial scale projects. However, the technology requires high capital and operating cost, skilled operation and regular maintenance.

e) Off-site Disposal via NEMA-Licensed Transporter

In this option, wastewater is collected in a holding tank and periodically evacuated by a licensed waste handler for off-site treatment at an approved facility. This alternative does not require on-site treatment infrastructure but entails recurring costs of the exhaust services. The alternative is prone to risk of illegal dumping by transporters and only effective for small volumes.

Preferred Alternative

For the proposed coffee roasting facility, a hybrid system combining a grease trap, and sedimentation chamber is recommended due to its balance of efficiency, cost, and environmental safety. For long-term sustainability, the facility may consider reusing treated wastewater for cleaning or landscaping purposes. The facility has existing sedimentation chambers that should be maintained to standards.

6.3.5 Solid Waste Management Alternatives

The proposed coffee roasting and packaging facility will generate various types of solid waste, including: organic waste (coffee husks, chaff, food remains), Packaging materials (paper, plastics, cartons), general waste (dust, sweepings, PPE), and hazardous waste (e.g., used oils, cleaning agents).

Effective management of these waste streams is critical for environmental sustainability, operational efficiency, and compliance with the EMCA Waste Management Regulations, 2024. Below are key alternatives to consider:

a) **Composting of Organic Waste (On-site or Off-site**)

Coffee husks, chaff, and food scraps are highly biodegradable and can be composted to produce organic fertilizer. Although this technology converts waste into valuable compost and reduce disposal volume at low cost, it requires space, time and proper management of moisture and aeration.

b) Recycling and Material Recovery

Sorted plastic, paper, and metal waste can be collected and sold to local recyclers or taken to a material recovery facility (MRF). This approach reduces landfill burden, generates some income and aligns with Kenya's circular economy goals. The alternative requires reliable off-takers or recycling partners and is best suited for facilities producing significant recyclable packaging waste.

c) Briquette Production from Coffee Husks/Chaff

The dry, fibrous waste from coffee roasting can be used to produce biomass briquettes, which are an alternative fuel source for local industries or households. The alternative adds economic value to the waste and promote reduction in fossil fuel use, however; it requires processing equipment and partnerships for off-take.

d) Contracting Licensed Waste Collectors/Disposal Services

Non-recyclable and residual waste can be collected by NEMA-licensed waste service providers for disposal in designated landfill sites or transfer stations. This approach ensures regulatory compliance and safe disposal. However, it entails ongoing service costs and it depends on third-party reliability.

Preferred Alternatives

The most sustainable approach combines several alternatives:

- Source segregation,
- On-site composting of organic waste,
- Partnerships for recycling, and
- Use of licensed collectors for final disposal.

This integrated strategy aligns with the EMCA Waste Management Regulations, 2024, supports the polluter-pays principle, and promotes circular economy practices while minimizing the project's environmental footprint.

CHAPTER:7 ANALYSIS OF POTENTIAL IMPACTS AND MITIGATION MEASURES

7.1 Introduction

The sub-project design, baseline information collected, and the project characteristics discussed form the basis for impact identification and evaluation. The proposed project will bring about both positive and negative environmental and social impacts.

7.2 Construction phase

7.2.1 Positive Impacts during Construction Phase

The proposed upgrade of the coffee mill sub-project is expected to generate several positive environmental and social impacts during the construction phase, these include: the following:

7.2.1.1 Employment Creation and Income Generation

The construction phase will create direct employment opportunities for both skilled and unskilled labour, including masons, welders, plumbers, electricians, and casual labourers. Local community members, particularly youth and women, are expected to benefit from short-term job opportunities, thereby improving household incomes and reducing poverty levels in the project area.

7.2.1.2 Skills Development and Knowledge Transfer

Workers engaged during construction will gain hands-on experience and technical skills in civil works, plumbing, electrical installation, and machine fitting. This exposure will enhance their future employability and capacity to engage in similar projects elsewhere, contributing to local human capital development.

7.2.1.3 Local Economic Stimulation

Procurement of local construction materials such as sand, ballast, cement, timber, and fittings will support local suppliers and stimulate economic activities in nearby towns and trading centers. This multiplier effect will benefit small-scale traders, transporters, food vendors, and service providers.

7.2.2 Negative Impacts during Construction Phase

The proposed coffee mill upgrade, though beneficial, may lead to several negative environmental and social impacts if not properly managed. Key anticipated adverse impacts during construction phase and their corresponding mitigation measures include the following:

7.2.2.1 Disturbance of Vegetation

The proposed project will entail excavation work for the foundation of the coffee processing building unit. Impacts on vegetation will be from excavation works and compactions. Most of these impacts are short-lived and localized. Plants at the proposed site which is mainly grass will be cleared to pave way for the construction activities.

Mitigation measures

a) Properly demarcate the project area to be affected by the construction activities to avoid spill over effects to neighbouring areas.
b) Re-establish vegetation in the area after construction.

7.2.2.2 Soil Erosion

Excavations if not well managed will result into loose soil which is prone to both water and wind erosion. The source of loose soil will be form excavation work for the building foundation. Loose soil generated during excavation works may lead to increased soil erosion and dust at the project site and neighbourhood. Earthworks and vegetation clearance may increase runoff and soil loss.

Mitigation measures

a) Clear vegetation at the sites only when due for construction works and not weeks in advance.
b) Encourage re-use of excavated materials for back-filling and landscaping activities.
c) Install proper and functional wastewater and storm water drainage channels.

7.2.2.3 Noise and Vibration

During the planned project's construction, there could be noticeable increases in vibration and noise levels. Construction workers, excavators, loaders, concrete mixers, trucks can produce such noise and vibrations. The noise level from the site will be of minimal consequences as it will be short lived, those working at the site will have noise attenuation gadget.

Mitigation measures

a) In order to meet noise level requirements, those handling noisy equipment will be equipped with standard noise attenuation features.
b) The construction work will be limited to normal working hours (8am-5pm), unless otherwise, no construction work will be done at night.
c) The contractor should establish means for the public to raise their complaints when the noise becomes too much (i.e., provide telephone number, email, etc.) and methods to handle noise complaints.

7.2.2.4 Dust and Air Pollution

Excavation, loading/unloading of materials, and vehicular movement may generate dust and airborne particles.

Mitigation measures

a) Regularly spray water on dry and exposed soil, particularly during excavation and earthworks, to reduce dust emissions.
b) Enforce a speed limit (e.g., 20 km/h) on unpaved roads to minimize dust.
c) Provide workers with dust masks, goggles, and respirators in high-risk areas.
d) Set up a system where affected communities can report dust-related concerns.

7.2.2.5 Solid waste Generation

During the construction phase of the coffee mill upgrade sub- project, solid waste such as excavated soil, packaging materials, metal scraps, plastic pipes, and other construction debris may be generated. Proper management is crucial to prevent environmental pollution and ensure compliance with environmental regulations and best practices.

Mitigation measures

a) Store construction materials in designated areas to prevent damage and reduce wastage.
b) Excavated soil and rocks should be reuse for backfilling or levelling areas instead of disposal.
c) Metal and Plastic Pipes will be collected for re-use and recycling.
d) Open burning of waste should be strictly avoided to prevent air pollution.

7.2.2.6 Excessive Use of Construction Inputs/Materials

The construction phase of the coffee mill upgrade will require significant quantities of construction materials such as sand, ballast, hard-core, cement, bricks, timber, water, and steel. If not well planned and controlled, the excessive or unsustainable use of these materials can result in a range of environmental and social issues, including: depletion of natural resources, land degradation and greenhouse gas emission.

Mitigation measures

a) A qualified engineer or quantity surveyor will ensure accurate material estimation to prevent over-ordering.

b) Construction materials such as sand, timber, and ballast will be sourced only from licensed and environmentally compliant sites. Suppliers will be required to provide documentation of compliance with NEMA regulations and county approvals.

7.2.2.7 Community Disruption and Traffic Congestion and traffic accidents

Construction vehicles may increase traffic and pose risks to pedestrians and other road users especially on the local narrow feeder roads.

Mitigation measures

a) Heavy construction traffic will be scheduled during off-peak hours, typically mid-morning or early afternoon, to avoid interfering with school opening/closing times and market hours.
b) Clear and visible signage will be placed at entry and exit points, construction zone, and along the access road to warn drivers and pedestrians.
c) Trucks transporting soil, sand, or gravel will be covered with tarpaulins to prevent dust and spillage.
d) Undertake road safety awareness and enforce speed limit of 30km/hr for trucks
e) Ensure the drivers sign code of conduct, attend toolbox meetings and are sober before start of works.
f) Community members will be sensitized on reporting procedures of any traffic related complaint and a traffic incident logbook will be maintained to document any accidents or complaints from road users and community members.
g) Any damage caused to public or community roads by construction activities should be repaired and restored upon project completion.

7.2.2.8 Occupational Health and safety

Public and construction worker safety can be jeopardised during civil works projects by a variety of construction-related activities, including deep excavations, the operation and movement of large machinery and trucks, injuries from falling materials and the failure to wear personal protective equipment (PPE).

Mitigation measures

a) Undertake induction training for new staff and hold daily toolbox meetings before commencement of works
b) Undertake job safety analysis and put in safety measures depending on the risk of the activity
c) Warning/exclusion tapes should be put around the construction area to alert visitors on the ongoing construction works.
d) A fully equipped First Aid Kit shall be provided at the construction site always and manned by trained/qualified persons.
e) Depending on OHS hazards anticipated while performing assigned jobs/task(s), workers will require proper fitting PPE to avoid injuries and illnesses. The PPEs will include: working boots, overalls, helmets, goggles, earmuffs, dust masks, and gloves among others that will be deemed necessary.
f) Maintain an effective reporting procedure and recording for all accidents.
g) The contractor shall have group Insurance Cover for the workers.
h) In case of an accident, the injured person should be given first aid and immediately taken to the nearby hospital, an investigation should be initiated immediately to ascertain the cause of the accident and preliminary findings released within 12 hours.
i) Provide adequate and gender segregated sanitary facilities
j) Provide drinking water for workers

k) Provide a grievance mechanism for workers to raise complaints, make suggestions or compliments.

7.2.2.9 Risk of increased incidences of HIV/ AIDS and STIs

Considering the possibility that construction workers in most sites are young males with increased income, sexual interactions between local women and construction workers may contribute to spread of communicable diseases in the project area, including sexually transmitted diseases such as HIV and AIDS.

Mitigation measures

a) Proponent and Contractor(s) to sensitize workers and community members on HIV/ AIDS and STIs as part of the contractor's Health and Safety Management Plan.
b) Contractor to ally with nearest Sub County Hospital for provision of VCT services on site to the workers and community at large.
c) Contractor to avail condom dispensers at the construction site.

7.2.2.10 Child Labour and Abuse

The project area is neighboured by residential areas. Children within the residential areas are likely to be exposed to risks associated with interaction between them and construction workers. These include child labour and sexual abuse which coherently leads to teenage pregnancies and exposure to communicable diseases such as HIV/ AIDS and sexually transmitted diseases STDs.

Mitigation measures

a) The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.
b) All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behaviour.
c) Children under the age of 18 years will not be hired at the site.

7.2.2.11 Gender-Based Violence/ Sexual Exploitation, Harassment and Abuse (GBV/ SH)

This impact is likely to be triggered during project construction phase through the relationships between the construction workers and the local community, particularly young women, boys and girls.

Mitigation measures

a) Develop a human resources policy against sexual harassment that is aligned with national law.
b) Develop a Code of Conduct with specific provisions on protection from sexual exploitation and abuse and ensure employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with it.
c) Sensitise workers as well as have display signage around the project site that signal to workers and the community that the project site is an area where SH/SEA/GBV is prohibited.
d) Establish an appropriate GRM to monitor and address SH and GBV in collaboration with the set legal systems and health workers within the locality.

7.2.2.12 Unresolved Grievances/Conflicts

Common grievances expected to arise during the proposed project construction include: grievances from those not considered for the construction work at the site; grievances as a result of negative project impacts which may include physical harm and nuisance from construction activities; health and safety risks; socially unacceptable staff relations with the communities and other stakeholders; conflicts over shared resources such as water and facilities such as latrines and access roads.

Mitigation measures

a) The contractor should put in place a pre-emptive community liaison structure aimed at identifying potential issues arising from project-related impacts and addressing them before they become grievances or escalate to the relevant government authorities those that cannot be addressed.
b) The contractor shall put in place a grievance redress mechanism for the general community and workers in line with the NAVCDP GM.

7.3 Operation Phase

7.3.1 Anticipated Positive Environmental and Social Impacts during Operation Phase

The implementation of the coffee mill upgrade project is expected to generate numerous long-term environmental and social benefits, key ones include the following:

7.3.1.1 Economic and Social Development Benefits

The mill will offer long-term employment opportunities for plant operators, quality controllers, technicians, and administrative staff. This steady source of income will enhance household welfare and support local livelihoods. Furthermore, by adding value through roasting, grinding, and packaging, the project will increase the income potential for farmers and the cooperative by opening access to more lucrative domestic and export markets.

7.3.1.2 Technology Transfer and Capacity Building

Cooperative members and employees will gain hands-on experience in secondary coffee processing technologies, quality assurance, and business management.

7.3.2 Anticipated Adverse Environmental and Social Impacts during operation Phase

7.3.2.1 Air pollution from Roasting and Emissions

This impact arises from the combustion of fuel used to heat the roaster and the release of fine particles and volatile organic compounds during the roasting of coffee beans.

Mitigation measures

a) Install emission control equipment such as the electrostatic precipitator.
b) Opt for electric roasters or roasters powered by liquefied petroleum gas (LPG) or natural gas, which produce fewer emissions compared to diesel or firewood.
c) Design tall exhaust stacks or chimneys to effectively disperse emissions above breathing level, the chimney should have proper orientation and placement to avoid directing emissions toward sensitive receptors (e.g. schools, homes).
d) Regularly inspect and maintain roasting and ventilation equipment to prevent incomplete combustion and malfunction, clean filters and replace parts of the air control systems as per manufacturer guidelines.
e) Provide personal protective equipment (PPE) such as respiratory masks for operators and monitor worker exposure levels and ensure compliance with national occupational health standards.
f) Inform neighbouring communities about emission control measures and create channels for them to raise complaints or concerns.
g) Conduct frequent air quality monitoring (especially for PM, CO, and VOCs) at key points within the premises and at property boundaries.

7.3.2.2 Solid Waste Generation

During the operation phase of the upgraded coffee mill, the facility will generate various types of solid waste as a result of roasting, grinding, packaging, and general administrative activities. If not properly managed, this waste can result in environmental degradation, health risks, and operational inefficiencies.

Mitigation measures

a) Place clearly labelled bins for different types of waste: organic, recyclable, non-recyclable, and hazardous and train staff to sort waste correctly and avoid mixing hazardous waste with general or organic waste.
b) Coffee chaffs and organic residues can be composted, used as biofuel or for making briquette.
c) Engage licensed waste collection companies to remove and dispose of non-recyclable and hazardous waste in compliance with national environmental regulations (e.g., NEMA guidelines in Kenya).
d) If possible, Use eco-friendly and biodegradable packaging materials as opposed to single use plastic packaging materials.
e) Maintain waste inventory register capturing the type of waste, quantity generated, method of disposal and the contracted solid waste handler.

7.3.2.3 Noise Pollution

During the operation phase of the upgraded coffee mill, noise pollution may arise from operation of the roaster and associated equipment such as the air blower and associated fan as well as machine maintenance activities. While coffee processing is generally a medium-noise industrial activity, prolonged exposure to elevated noise levels can affect both workers and nearby residents if not well managed.

Mitigation measures

a) Install noise-dampening equipment such as silencers, mufflers, and acoustic panels on or around noisy machinery.
b) Ensure regular servicing and lubrication of machinery to reduce rattling, grinding, and other avoidable mechanical noises.
c) Restrict noisy operations to daytime hours to minimize disturbance to the surrounding community.
d) Provide workers exposed to high noise levels with appropriate ear protection gear such as earmuffs or earplugs and display safety signage in designated high-noise areas to remind staff to wear PPE.
e) Maintain an open grievance redress mechanism to allow neighbours to report noise concerns.

7.3.2.4 High Energy Demand/Consumption

During the operation phase of the upgraded coffee mill, the facility is expected to experience high energy demand due to continuous operation of the coffee roasting and packaging machine and related components. High consumption may lead to voltage fluctuations, affecting nearby households or small businesses, especially in rural or semi-urban settings with limited grid capacity. Energy costs may form a significant portion of the facility's expenses, reducing profit margins and making the operation less sustainable in the long run.

Mitigation measures

a) Procure energy-efficient roasters and machinery (preferably those with high energy star ratings or energy-saving features).

b) Install solar PV systems for powering lighting, office equipment, and light machinery to supplement the grid power.
c) Turn off machines and lights when not in use.
d) Maintain energy backup systems (e.g., solar with batteries or efficient generators) to ensure continuous operation without over-reliance on the grid.
e) Monitor energy usage patterns to identify inefficient equipment or operational areas with excessive energy demand and use audit results to implement targeted efficiency measures.

7.3.2.5 Water Use and Wastewater Generation

During the operation phase of the upgraded coffee mill, water will be used in various processing and auxiliary activities, leading to both significant water consumption and generation of wastewater. If not well managed, this can result in environmental pollution, resource strain, and social conflict. Water from the coffee processing facility may contain organic matter (coffee residue, chaff particles), detergents, grease, and suspended solids, if released untreated, can pollute water bodies, contaminate groundwater, and cause odors and vector attraction.

Mitigation measures

a) Install water-saving fixtures such as use of low-flow nozzles, taps, and dual-flush systems.
b) For organic-rich wastewater, consider anaerobic digesters or constructed wetlands for treatment and nutrient recovery.
c) Discharge treated water only after meeting national effluent discharge standards as per NEMA effluent discharge/water quality guidelines apply for effluent discharge license from NEMA before releasing effluent into the environment.
d) Maintain a log of water usage and effluent volumes to track trends and identify areas for efficiency improvement.

7.3.2.6 Occupational Health and Safety Risks

During the operation phase of the upgraded coffee mill, workers will be exposed to various occupational health and safety risks stemming from interaction with machinery, equipment, materials, and the work environment. If not adequately managed, these risks can lead to injuries, illnesses, lost productivity, and legal liability.

Mitigation measures

a) Provide appropriate PPE to workers at the coffee mill based on job roles, including: gloves, aprons, and heat-resistant gear for machine operators; dust masks or respirators for workers near roasting and grinding stations; earplugs or earmuffs for noisy areas and safety boots, helmets, and goggles.
b) Ensure the machines are operated only by trained personnel.
c) No worker should be allowed at work when sick or under the influence of alcohol or other drugs and substance abuse.
d) Install appropriate ventilation system in roasting and grinding rooms.
e) Heat shields or insulators should be used to protect workers in the coffee roasting chamber.
f) Provide first Aid box and train staff on the emergency response.
g) Maintain and practice emergency response plans for fire, injury, chemical spill, or mechanical failure.
h) Register the facility as a work place under DOSH, provide the facilities required of a work place.

7.3.2.7 Fire Risk

During the operation phase of the upgraded coffee mill, there is a significant risk of fire due to the nature of activities and materials used. The coffee roasting and packaging processes involve heat-generating equipment, flammable materials, and electrical systems, all of which can serve as ignition sources or fuel for fires.

Mitigation measures

a) Ensure electrical installations are done by licensed technicians in accordance with national electrical codes.
b) Install smoke detectors, heat sensors, and fire alarms in all processing and storage areas and equip the facility with portable fire extinguishers (CO_2, dry chemical powder, and foam types) at accessible points, ensure the fire extinguishers are regularly serviced.
c) Train workers on fire prevention and on fire fighting techniques.
d) Keep packaging materials and coffee chaff away from heat sources and electrical outlets.
e) Clearly mark and illuminate emergency exits and escape routes and establish fire assembly point and mark it.
f) Provide guideline on what to do in case of fire.
g) Apply for fire safety license and conduct regular fire safety audit of the facility as well as training of workers on fire safety and fighting.

7.3.2.8 Security Related Risk

During the operation phase of the upgraded coffee mill, several security-related risks may arise due to the presence of valuable assets, movement of people and goods, and interactions with external stakeholders. If not properly addressed, these concerns can lead to theft, vandalism, unauthorized access, conflict, or damage to property and personnel.

Mitigation measures

a) The facility has a chain-link fence with secure gates to control access to the facility.
b) Install CCTV surveillance systems to monitor critical areas such as storage rooms, processing units, and entry/exit points.
c) Deploy trained security guards at all access points during the day and at night and provide visitors log to capture details of those visiting the facility.
d) Implement digital stock tracking systems to monitor coffee flow and packaging materials, ensure valuable stock and equipment are locked in controlled-access rooms which are burglar proof.
e) Schedule transport during daytime hours and use reliable logistics partners.
f) Collaborate with the local police station for night patrols and surveillance along the coffee processing facility.

7.3.2.9 Competition from Other Operators in the Market

During the operation phase of the coffee roasting and packaging sub-project, competition from other operators in the same value chain is an anticipated risk. The market may have several players offering similar services, which could potentially affect the sub-project's market share, profitability, and sustainability. This competition may lead to price undercutting, reduced client base, and pressure to maintain high operational standards and quality output.

Mitigation measures

a) Implement stringent quality control measures to ensure consistent production of high-quality roasted and packaged coffee.

b) Develop a strong brand identity that communicates the value proposition clearly to consumers.
c) Invest in targeted marketing strategies including digital platforms, local trade shows, and partnerships with coffee shops and retailers.
d) Adjust pricing, packaging, and distribution strategies based on consumer preferences and market demands.

7.3.2.10 Gender and Labour Inequities

During the operation phase of the upgraded coffee mill, gender and labour inequities may arise if fair employment practices are not embedded in the project's management systems. These inequities can manifest in terms of unequal access to jobs, discrimination in pay or roles, and lack of voice or protection for certain groups, especially women and youth.

Mitigation measures

a) Adopt a non-discrimination policy that promotes fair hiring, equal pay, and career growth for all, regardless of gender, age, or background. Ensure compliance with national labour laws (e.g., Kenya's Employment Act, 2007 and Gender Act, 2011).
b) Provide separate and safe sanitation facilities for men and women.
c) Establish anonymous reporting channels and ensure zero tolerance for harassment or intimidation at work.
d) Support skills development and leadership training especially targeted at women and youth.

7.3.2.11 Gender-Based Violence/ Sexual Exploitation, Harassment and Abuse (GBV/ SH)

This impact is likely to be triggered during project operation phase through the relationships between the construction workers and the local community, particularly young women, boys and girls.

Mitigation measures

e) Develop a human resources policy against sexual harassment that is aligned with national law.
f) Develop a Code of Conduct with specific provisions on protection from sexual exploitation and abuse and ensure employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with it.
g) Sensitise workers as well as have display signage around the project site that signal to workers and the community that the project site is an area where SH/SEA/GBV is prohibited.
h) Establish an appropriate GRM to monitor and address SH and GBV in collaboration with the set legal systems and health workers within the locality.

7.3.2.12 Grievances and Conflicts

During the operation phase of the upgraded coffee mill, various grievances and conflicts may arise among different stakeholders including employees, community members, suppliers, and local authorities. If not proactively managed, these issues can disrupt operations, harm the mill's reputation, and result in legal or social consequences.

Mitigation measures

a) Set up a formal, accessible, and confidential system for employees and external stakeholders to submit complaints. The system may include: suggestion boxes, hotlines, HR desks, or community liaisons.
b) Maintain open communication with local communities, authorities, and suppliers through: periodic stakeholder meetings, community notice boards or radio announcements, information sessions about project activities and changes.

c) Ensure clear written contracts with workers and maintain equal opportunity policies and transparent promotion criteria.
d) Train management and supervisors in communication, negotiation, and conflict resolution skills.

7.4 Decommissioning Phase

It is expected that the proposed development will be used for many years to come. However, in the near future, the possibility of decommissioning the coffee mill and related infrastructure cannot be ruled out. The decommissioning phase will entail permanent shut down of the facility as well as dismantle or repurpose for other use the associated infrastructure and equipment. This phase may occur due to the end of the facility's economic life, change in land use, relocation, or project abandonment. The objective is to ensure that the site is left in a safe, stable, and environmentally sound condition, while minimizing residual impacts to the community and ecosystem.

Major impact anticipated during decommissioning include:

a) Solid waste/debris accumulation
b) Air and noise pollution from demolition
c) Work related accidents from demolition works
d) Job losses and income disruption for workers and suppliers
e) Reduced business for local service providers and traders.

Mitigation measures

i. Develop a decommissioning plan in consultation with NEMA and relevant departments at the county government of Bungoma. Based on the decommissioning plan, NEMA will guide on further action i.e. whether to develop a decommissioning ESIA or ESMP to guide in the management of the impacts during decommissioning. The development of the ESS instruments (decommissioning ESIA or ESMP) will entail stakeholder's engagement including workers and the host community.
ii. The decommissioning plan should be submitted to NEMA at least 3 months before the intended decommissioning of the project.

CHAPTER:8; ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

This Environmental and Social Management Plan (ESMP) presents the framework for managing and mitigating the potential environmental and social impacts associated with the implementation of the proposed coffee processing sub-project in Chesikaki Ward, Mount Elgon Sub-County in Bungoma County. The sub-project, spearheaded by the Mount Elgon Farmers Cooperative Society under the National Agricultural Value Chain Development Project (NAVCDP), involves the construction of a permanent processing unit and the installation of coffee roasting and packaging equipment. This ESMP outlines specific mitigation measures, responsibilities, monitoring indicators, and institutional arrangements aimed at ensuring that all identified impacts are addressed effectively during the construction, operation, and decommissioning phases of the project. It serves as a practical tool for guiding environmental compliance and promoting sustainability throughout the project's lifecycle.

The ESMP is based on data gathered through site visits, stakeholder consultations, baseline environmental and social assessments, and technical project design reviews as well as Key environmental and social (E&S) risks and impacts identified. The ESMP is a living document subject to modification as situation changes. The ESMP matrix for the proposed sub-project is presented in Table 7.

Table 7: Environmental and Social Management Plan for the Proposed Mt. Elgon Coffee Mill Upgrade Sub-Project in Chesikaki Ward, Mount Elgon Sub-County, Bungoma County

PHASE						
A	**CONSTRUCTION PHASE**					
Potential Environmental and social impacts	**Recommended Actions**	**Monitoring Indicator**	**Responsibility**	**Monitoring frequency**	**Who to monitor**	**Estimated cost in (Ksh)**
Disturbance of vegetation	a) Properly demarcate the project area to be affected by the construction activities to avoid spillover effects to neighbouring areas. b) Re-establish vegetation in the area after construction.	• Spatial scale of the excavation works and other construction activities that affects vegetation. • Number of trees planted through CSR by the project contractor	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	Throughout construction period	-KFS, -NEMA, - CESCO	20,000 for tree seedlings
Soil erosion	a) Clear vegetation at the sites only when due for construction works and not weeks in advance. b) Encourage re-use of excavated materials for back-filling and landscaping activities. c) Install proper and functional wastewater and storm water drainage channels.	•Scale of excavations • Construction debris management practice	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	During Excavation works	-CESCO, -NEMA	50,000 for soil erosion control measures
Noise and vibration	a) In order to meet noise level requirements, those handling noisy equipment will be equipped with standard noise attenuation features. b) The construction work will be limited to normal working hours (8am-5pm), unless otherwise, no	• Complain from households near construction points • Availability and use of noise attenuation gadgets by those	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	Throughout the construction period	-NEMA -Environment department at the County Government of Bungoma	40,000 for the noise attenuation PPEs

	construction work will be done at night. c) The contractor should establish means for the public to raise their complaints when the noise becomes too much (i.e., provide telephone number, email, etc.) and methods to handle noise complaints.	handling noisy equipment				
Dust and Air pollution	a) Regularly spray water on dry and exposed soil, particularly during excavation and earthworks, to reduce dust emissions. b) Enforce a speed limit (e.g., 20 km/h) on unpaved roads to minimize dust. c) Provide workers with dust masks, goggles, and respirators in high-risk areas. d) Set up a system where affected communities can report dust-related concerns.	• Dust suppression techniques used during dry weather • Complains from community members	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	During dry periods of the construction phase	-NEMA -CESCO	30,000 for dust suppression during dry weather
Solid waste/Debris	a) Store construction materials in designated areas to prevent damage and reduce wastage. b) Excavated soil and rocks should be reuse for backfilling or levelling areas instead of disposal. c) Metal and Plastic Pipes will be collected for re-use and recycling. d) Open burning of waste should be strictly avoided to prevent air pollution.	Solid waste management practices employed	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	Throughout the construction period	-NEMA -CESCO	20,000 for solid waste storage facility and management
Excessive Use of Construction Inputs/Materials	a) A qualified engineer or quantity surveyor will ensure accurate material estimation to prevent over-ordering. b) Construction materials such as sand, timber, and ballast will be sourced only from licensed and	• Types and quantity of construction materials procured • Compliance documentations from the suppliers	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	During construction material sourcing	-NEMA -CESCO	No added cost

	environmentally compliant sites. Suppliers will be required to provide documentation of compliance with NEMA regulations and county approvals.					
Community Disruption and Traffic Congestion	a) Heavy construction traffic will be scheduled during off-peak hours, typically mid-morning or early afternoon, to avoid interfering with school opening/closing times and market hours. b) Clear and visible signage will be placed at entry and exit points, construction zone, and along the access road to warn drivers and pedestrians. c) Trucks transporting soil, sand, or gravel will be covered with tarpaulins to prevent dust and spillage. d) Community members will be sensitized on reporting procedures of any traffic related complaint and a traffic incident logbook will be maintained to document any accidents or complaints from road users and community members. e) Any damage caused to public or community roads by construction activities should be repaired and restored upon project completion.	• Traffic management plan in place • Complains from other road users • Condition of the local access roads • Traffic warning signs put along the entry and exit points	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	During transportation of construction materials	-Traffic police -CESCO - CSSGMO	30,000 for warning signs and reporting logs
Incidents and construction work related accidents	a) Warning/exclusion tapes should be put around the construction area to alert visitors on the ongoing construction works. b) A fully equipped First Aid Kit shall be provided at the construction site	•Safety protocols at the site •Presence and use of PPEs	-Contractor -Directorate of Occupational safety and health	Throughout the construction period	DOSH, CESCO CSSGMO	100,000 for PPEs

	always and manned by trained/qualified persons. c) Depending on OHS hazards anticipated while performing assigned jobs/task(s), workers will require proper fitting PPE to avoid injuries and illnesses. The PPEs will include: working boots, overalls, helmets, goggles, earmuffs, dust masks, and gloves among others that will be deemed necessary. d) Maintain an effective reporting procedure and recording for all accidents. e) The contractor shall have group Insurance Cover for the workers. f) In case of an accident, the injured person should be given first aid and immediately taken to the nearby hospital, an investigation should be initiated immediately to ascertain the cause of the accident and preliminary findings released within 12 hours.	•Number of accidents reported	Bungoma County office -Mt.Elgon Farmers Cooperative Union Limited			
Risk of increased incidences of HIV/ AIDS and STIs	a) Proponent and Contractor(s) to sensitize workers and community members on HIV/ AIDS and STIs as part of the contractor's Health and Safety Management Plan. b) Contractor to ally with nearest Sub County Hospital for provision of VCT services on site to the workers and community at large. c) Contractor to avail condom dispensers at the construction site.	• Number of new Infections reported in the project area • Rate at which dispensed condoms are used/ picked • Number of sensitization meetings held	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	Regularly during the construction period	- Department of Health -CSSGMO	150,000 for sensitization, voluntary counselling and testing as well as condom dispensers

Child labour and abuse	a) The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project. b) All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behaviour. c) Children under the age of 18 years will not be hired at the site.	Number of reported cases of child labour and abuse	-Contractor -Office of the chief/National Government Administration Office (NGAO) -Mt.Elgon Farmers Cooperative Union Limited	Throughout the construction period	-Department of Child protection, -CSSGMO NGAO	50,000 for sensitization training of workers on child abuse
Gender-based violence/ sexual exploitation, harassment and Abuse (GBV/ SH)	**a)** Develop a human resources policy against sexual harassment that is aligned with national law. **b)** Develop a Code of Conduct with specific provisions on protection from sexual exploitation and abuse and ensure employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with it. c) Sensitise workers as well as have display signage around the project site that signal to workers and the community that the project site is an area where SH/SEA/GBV is prohibited. **d)** Establish an appropriate GRM to monitor and address SH and GBV in collaboration with the set legal systems and health workers within the locality.	Number of complaints reported; Number of cases handled, number of cases escalated to the police and finally to court of law.	-Contractor -Office of the chief/National Government Administration Office (NGAO) -The Kenya national police service -Mt.Elgon Farmers Cooperative Union Limited	Throughout the construction period	-Office of the chief/National Government Administration Office (NGAO) -CSSGMO	50,000 for training and sensitization of the construction workers and the community members.
Unresolved Grievances/conflicts	a) The contractor should put in place a pre-emptive community liaison structure aimed at identifying potential issues arising from	Number of grievances reported, Number of grievances resolved	-Contractor -Mt.Elgon Farmers Cooperative Union Limited	Throughout the construction period	CSSGMO CESCO	100,000 for community liaison work

	project-related impacts and addressing them before they become grievances or escalate to the relevant government authorities those that cannot be addressed.	Number of grievances escalated.				
				CONSTRUCTION PHASE COST = 640,000		
PHASE						
B	**OPERATION PHASE**					
Potential Environmental and social impacts	**Recommended Actions**	**Monitoring Indicator**	**Responsibility**	**Monitoring frequency**	**Who to monitor**	**Estimated cost in (Ksh)**
Air pollution from Roasting and Emissions	a) Install emission control equipment such as the electrostatic precipitator. b) Opt for electric roasters or roasters powered by liquefied petroleum gas (LPG) or natural gas, which produce fewer emissions compared to diesel or firewood. c) Design tall exhaust stacks or chimneys to effectively disperse emissions above breathing level, the chimney should have proper orientation and placement to avoid directing emissions toward sensitive receptors (e.g. schools, homes). d) Regularly inspect and maintain roasting and ventilation equipment to prevent incomplete combustion and malfunction, clean filters and replace parts of the air control systems as per manufacturer guidelines.	• Stack emission and air quality reports • Nature and height of the exhaust chimney • Presence and use of PPEs for the workers	-Mt.Elgon Farmers Cooperative Union Limited -NEMA	Regularly Throughout the project operation phase	NEMA	300,000 for air quality monitoring

	e) Provide personal protective equipment (PPE) such as respiratory masks for operators and monitor worker exposure levels and ensure compliance with national occupational health standards. f) Inform neighbouring communities about emission control measures and create channels for them to raise complaints or concerns. g) Conduct frequent air quality monitoring (especially for PM, CO, and VOCs) at key points within the premises and at property boundaries.					
Solid Waste Generation	a) Place clearly labelled bins for different types of waste: organic, recyclable, non-recyclable, and hazardous and train staff to sort waste correctly and avoid mixing hazardous waste with general or organic waste. b) Coffee chaffs and organic residues can be composted, used as biofuel or for making briquette. c) Engage licensed waste collection companies to remove and dispose of non-recyclable and hazardous waste in compliance with national environmental regulations (e.g., NEMA guidelines in Kenya). d) If possible, Use eco-friendly and biodegradable packaging materials as opposed to single use plastic packaging materials. e) Maintain waste inventory register capturing the type of waste,	• Solid waste management practice implemented at the facility • Presence and content of the waste inventory	-Mt.Elgon Farmers Cooperative Union Limited -Department of Environment Bungoma County Government	Weekly Throughout the project operation phase	NEMA	400,000 for solid waste management

	quantity generated, method of disposal and the contracted solid waste handler.					
Noise Pollution	a) Install noise-dampening equipment such as silencers, mufflers, and acoustic panels on or around noisy machinery. b) Ensure regular servicing and lubrication of machinery to reduce rattling, grinding, and other avoidable mechanical noises. c) Restrict noisy operations to daytime hours to minimize disturbance to the surrounding community. d) Provide workers exposed to high noise levels with appropriate ear protection gear such as earmuffs or earplugs and display safety signage in designated high-noise areas to remind staff to wear PPE. e) Maintain an open grievance redress mechanism to allow neighbours to report noise concerns.	• State of the machines and the noise level they generate • Operational time/ schedule of the facility • PPEs provided against noise • Reported and unreported complaints from neighbours	• Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	-Department of environment County government of Bungoma -NEMA	500,000 for PPEs and noise level measurement
High Energy Demand/Consumption	a) Procure energy-efficient roasters and machinery (preferably those with high energy star ratings or energy-saving features). b) Install solar PV systems for powering lighting, office equipment, and light machinery to supplement the grid power. c) Turn off machines and lights when not in use. d) Maintain energy backup systems (e.g., solar with batteries or efficient generators) to ensure continuous	• Type/ energy rating of the coffee roasting and packaging machine and equipment procured • Sources of energy at the facility • Energy usage pattern at the coffee processing facility	-Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	-EPRA -KPLC -Coffee Directorate	1,000,000 for energy

	operation without over-reliance on the grid. e) Monitor energy usage patterns to identify inefficient equipment or operational areas with excessive energy demand and use audit results to implement targeted efficiency measures.					
Water Use and Wastewater Generation	a) Install water-saving fixtures such as use of low-flow nozzles, taps, and dual-flush systems. b) For organic-rich wastewater, consider anaerobic digesters or constructed wetlands for treatment and nutrient recovery. c) Discharge treated water only after meeting national effluent discharge standards as per NEMA effluent discharge/water quality guidelines apply for effluent discharge license from NEMA before releasing effluent into the environment. d) Maintain a log of water usage and effluent volumes to track trends and identify areas for efficiency improvement.	• Volume of water consumed and volume of waste water generated • Waste water management strategies employed • Water quality of the effluent	-Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	-NEMA -WRA	500,000 for monitoring and waste water management
Occupational Health and Safety Risks	a) Provide appropriate PPE to workers at the coffee mill based on job roles, including: gloves, aprons, and heat-resistant gear for machine operators; dust masks or respirators for workers near roasting and grinding stations; earplugs or earmuffs for noisy areas and safety boots, helmets, and goggles. b) Ensure the machines are operated only by trained personnel.	• Types of PPEs provided and their use • Safety protocols employed at the facility • Registration certificate of the facility under DOSH	-Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	DOSH	300,000 for the registration and Work Place Audits

	c) No worker should be allowed at work when sick or under the influence of alcohol or other drugs and substance abuse. d) Install appropriate ventilation system in roasting and grinding rooms. e) Heat shields or insulators should be used to protect workers in the coffee roasting chamber. f) Provide first Aid box and train staff on the emergency response. g) Maintain and practice emergency response plans for fire, injury, chemical spill, or mechanical failure. h) Register the facility as a work place under DOSH, provide the facilities required of a work place and ensure compliance Audits are undertaken through DOSH.					
Fire Risk	a) Ensure electrical installations are done by licensed technicians in accordance with national electrical codes. b) Install smoke detectors, heat sensors, and fire alarms in all processing and storage areas and equip the facility with portable fire extinguishers (CO_2, dry chemical powder, and foam types) at accessible points, ensure the fire extinguishers are regularly serviced. c) Train workers on fire prevention and on fire fighting techniques. d) Keep packaging materials and coffee chaff away from heat sources and electrical outlets.	• Design of the electrical installation • Fire fighting initiatives in place	-Mt Elgon FCS	Throughout the project operation phase	Fire Department at the County Government of Bungoma	350,000 for fire fighting equipment, staff training and Audits

	e) Clearly mark and illuminate emergency exits and escape routes and establish fire assembly point and mark it. f) Provide guideline on what to do in case of fire. g) Apply for fire safety license and conduct regular fire safety audit of the facility as well as training of workers on fire safety and fighting.					
Security Related Risk	a) The facility has a chain-link fence with secure gates to control access to the facility. b) Install CCTV surveillance systems to monitor critical areas such as storage rooms, processing units, and entry/exit points. c) Deploy trained security guards at all access points during the day and at night and provide visitors log to capture details of those visiting the facility. d) Implement digital stock tracking systems to monitor coffee flow and packaging materials, ensure valuable stock and equipment are locked in controlled-access rooms which are burglar proof. e) Schedule transport during daytime hours and use reliable logistics partners. f) Collaborate with the local police station for night patrols and surveillance along the coffee processing facility.	• Infrastructural and operational security design and protocol employed at the facility.	-Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	National Police Service through the OCS Cheptais Police station	500,000 for security infrastructure and human resource
Competition from Other Operators in the Market	a) Implement stringent quality control measures to ensure consistent	• Quality control measures implemented at the	-Mt.Elgon Farmers	Throughout the operation phase	_ Competition Authority of Kenya (CAK)	Cost to be determined by the proponent

	production of high-quality roasted and packaged coffee. b) Develop a strong brand identity that communicates the value proposition clearly to consumers. c) Invest in targeted marketing strategies including digital platforms, local trade shows, and partnerships with coffee shops and retailers. d) Adjust pricing, packaging, and distribution strategies based on consumer preferences and market demands.	coffee processing facility • Branding techniques used • Marketing strategy employed	Cooperative Union Limited		-Coffee Directorate	
Gender and Labour Inequities	a) Adopt a non-discrimination policy that promotes fair hiring, equal pay, and career growth for all, regardless of gender, age, or background. Ensure compliance with national labour laws (e.g., Kenya's Employment Act, 2007 and Gender Act, 2011). b) Provide separate and safe sanitation facilities for men and women. c) Establish anonymous reporting channels and ensure zero tolerance for harassment or intimidation at work. d) Support skills development and leadership training especially targeted at women and youth.	• Number of individuals employed against gender • Incentive measures in place to promote skill development for women and youth	Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	Bungoma County Gender and Labour Offices	The cost to be determined during operation by the proponent
Grievances and Conflicts	a) Set up a formal, accessible, and confidential system for employees and external stakeholders to submit complaints. The system may include: suggestion boxes, hotlines, HR desks, or community liaisons.	• Grievance reporting mechanism in place • Grievance management system in place	Mt.Elgon Farmers Cooperative Union Limited	Throughout the project operation phase	Department of Cooperative Societies, the Bungoma County office	The cost to be determined during operation by the proponent

	b) Maintain open communication with local communities, authorities, and suppliers through: periodic stakeholder meetings, community notice boards or radio announcements, information sessions about project activities and changes. c) Ensure clear written contracts with workers and maintain equal opportunity policies and transparent promotion criteria. d) Train management and supervisors in communication, negotiation, and conflict resolution skills.	• Communication protocol with aggrieved parties in place				
						OPERATION PHASE COST= 3,850,000
PHASE C DECOMISSIONING PHASE						
Potential Environmental and social impacts	**Recommended Actions**	**Monitoring Indicator**	**Responsibility**	**Monitoring frequency**	**Who to monitor**	**Estimated cost in (Ksh)**
Major impact anticipated during decommissioning include: a) Solid waste/debris accumulation b) Air and noise pollution from demolition c) Work related accidents from demolition works	a) Develop a decommissioning plan in consultation with NEMA and relevant departments at the county government of Bungoma. Based on the decommissioning plan, NEMA will guide on further action i.e. whether to develop a decommissioning ESIA or ESMP to guide in the management of the impacts during decommissioning. The development of the ESS instruments (decommissioning ESIA	• Decommissioning plan submitted to NEMA	Mt.Elgon Farmers Cooperative Union Limited	3 months before decommissioning	-NEMA -Coffee Directorate County - Government of Bungoma through the relevant departments	To be determined 3 months before decommissioning

d) Job losses and income disruption for workers and suppliers e) Reduced business for local service providers and traders.	or ESMP) will entail stakeholder's engagement including workers and the host community. b) The decommissioning plan should be submitted to NEMA at least 3 months before the intended decommissioning of the project.					
TOTAL COST FOR THE ESMP IMPLEMENTATION = 4,490,000						

The cost estimates provided in the Environmental and Social Management Plan (ESMP) are indicative and are intended to guide the implementation of mitigation and monitoring measures during the different phases of the sub-project. The costs associated with the construction phase are applicable for the entire duration of the construction period and should be loaded into the contract, the cost may be subject to adjustments based on prevailing market rates and inflation trends at the time of implementation.

Similarly, the costs outlined for the operation/implementation phase are applicable for the first year of project operation. These costs have been estimated based on current market conditions and typical operational requirements. However, they may be revised in subsequent years to reflect changes in market dynamics, including fluctuations in labour, material, and service costs, as well as evolving environmental and regulatory requirements.

The proponent shall ensure that adequate budgetary provisions are made to implement the ESMP throughout the project lifecycle and will update the cost estimates as necessary during periodic reviews or environmental and social audits.

CHAPTER:9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

The Environmental and Social Impact Assessment, Comprehensive Project Report (ESIA)(CPR) for the proposed coffee roasting and packaging sub-project by Mt. Elgon Farmers' Cooperative Society in Chesikaki Ward, has been conducted in accordance with the Environmental Management and Coordination Act (EMCA), 1999 (amended 2015), and relevant national regulations and policies. The assessment also aligns with applicable international environmental and social safeguards principles, including World Bank Environmental and Social Standards (ESS), where applicable.

The sub-project, involving a coffee roasting and packaging unit, is expected to boost local community's socio-economic benefits, including increased household incomes, job creation, market expansion, and skill enhancement, while supporting national and county development priorities. The project, if not managed properly, could lead to significant environmental and social impacts, including air pollution, increased energy and water demand, waste generation, occupational health risks, noise and traffic disturbances, and potential competition or exclusion among local actors.

However, through this ESIA, detailed mitigation and enhancement measures have been identified and incorporated into an Environmental and Social Management Plan (ESMP). Moreover, the project proponent is committed to ongoing environmental monitoring and stakeholder consultation throughout the project lifecycle.

The assessment concludes that the proposed sub-project is environmentally and socially viable, provided mitigation measures and management plans are fully implemented. The project's potential benefits outweigh residual environmental and social impacts, making it manageable and reversible. ESIA recommends approval for implementation subject to compliance with all relevant environmental regulations and continuous monitoring to ensure sustainability and community acceptance.

9.2 Recommendations

Based on the findings of this Environmental and Social Impact Assessment (ESIA), the following recommendations are proposed to ensure that the sub-project is implemented in an environmentally sound, socially acceptable, and legally compliant manner:

i. The proponent should closely follow the ESMP, ensuring that all mitigation measures and environmental safeguards are effectively implemented throughout the project. During construction phase a contractor's ESMP should be adopted and a specialised Environmental and Social Safeguards Officer be hired to ensure compliance, monitoring, and reporting.
ii. To reduce air pollution and energy consumption, the project should make use of cutting-edge, low-emission coffee roasting technology.
iii. To ensure compliance with the NEMA Air Quality Regulations (2014), the proponent should install emission control systems such as afterburners, filters, or scrubbers to reduce particulate matter and volatile organic compound emissions, as well as monitor air quality within and around the facility on a regular basis.
iv. The proponent should rehabilitate the existing waste water management infrastructure, including sedimentation ponds, soak pits, grease and oil traps, and apply for an effluent discharge licence before releasing treated waste water to the receiving environment.
v. The proponent should develop and implement a solid and organic waste management plan in accordance with EMCA waste regulations. Approaches include promoting waste segregation at the source, exploring composting or biogas options for organic waste from husks or chaff, and engaging licensed waste handlers for non-biodegradable waste disposal.

vi. The proponent should ensure full compliance with the Occupational Safety and Health Act (OSHA), 2007, which includes providing all personnel with Personal Protective Equipment (PPE) and training on how to operate roasting equipment safely. Regular safety drills should be carried out, and all incident and safety audit records should be kept up to date.

vii. During both construction and operation, the contractor and the proponent should maintain an open and continuous consultation process with local stakeholders, such as coffee farmers, local leaders, youth and women groups, and establish a grievance management mechanism (GRM) to handle complaints, concerns, and suggestions in a transparent and timely manner.

viii. The contractor and proponent should promote equitable access to project benefits, such as employment and market opportunities for women, youth, and people with disabilities, while also ensuring gender-sensitive hiring and procurement practices and encouraging women to participate in coffee value addition initiatives.

ix. During the project operation phase, the proponent should engage a licensed NEMA Lead Expert or firm to conduct independent environmental audits in compliance with the EMCA (1999, amended 2015). The audit report should be sent to NEMA, outlining performance, shortcomings, and corrective actions.

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26) World Bank (2018) Environment and Social Management Framework.

ANNEXES

Annex1: ESS Screening Checklist

ANNEX 3: ENVIRONMENTAL AND SOCIAL SCREENING SUBPROJECTS CHECK LIST BY BENEFICIARY COMMUNITIES (MICRO PROJECTS, FPO INVESTMENTS AND MULTI COMMUNITY INVESTMENTS)

Section A: Background Information

Name of County....BUNGOMA..

Name of CPCU/Environmental and Social Safeguard Compliance Officers:
i) CSS&GMO....LEWIS MARAH!...

ii) CESCO ....ELIJAH OBADHA...

SLM LOCATION..CHESIKAKI...Geo Reference points (Latitude.0.5603034.Longitude..34.5553576)

Name of CIG/VMG .....ME COM...Postal Address:....69-50201 CHEPTAIS...

Name of Contact Person..Amos..Mombole O.......................Cell phone: ....0729159148.................................
Name of the Sub-Project .UPGRADING MT. ELGON COFFEE MEAL THROUGH ESTABLISHMENT OF COFFEE ROASTING AND PACKAGING UNIT

Estimated cost (Kshs.)..~~26M~~..32,246,000...........

Approximate size of land area available for the Sub-Project......0.4 Ha...

Objectives of the Sub-Project ...Enhance coffee processing and value addition through roasting by 50%
..To increase local consumption of coffee by 10%...
..To increase coffee value and farmer's income through grounding and packaging by 70%.............

Activities/enterprises undertaken ..Construction..

....
Installation...
Operation:..

How was the Sub -Project Chosen? ....
..Through PICD process and CIDP...
....

Expected sub - project duration: .1year (January 2025-December, 2025)

Section B: Environmental Issues

Will the Subproject:	Yes	No	Remarks- If yes, elaborate
Create a risk of increased soil erosion?	☐	☑	
Create a risk of increased deforestation?	☑	☐	
Create a risk of increasing any other forms of soil degradation?	☐	☑	
Affect soil salinity and alkalinity?	☑	☑	
Divert the water resource from its natural course/location?	☐	☑	
Cause pollution of aquatic ecosystems through sedimentation, agrochemicals, oil spillage, effluents, etc.?	☐	☑	
Introduce exotic plants or animals to the ecosystem?	☐	☑	
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?	☐	☑	
Be on monoculture cropping?	☐	☑	
Affect any watershed?	☐	☑	
Focus on Biomass/Bio-fuel energy generation?	☐	☑	

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

Section C: Socio-economic Issues

Will the subproject:	Yes	No	Remarks (if yes, elaborate)
Have challenges for women farmers to benefit	Yes		
Target vulnerable community members such as physically challenged, LGBTQ, child-headed household etc..?	☑	☑	
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 the introduction of the project?	☐	☑	
Increase exposure of the community to HIV/AIDS?	☐	☑	
Induce conflict within the project area?	☐	☑	
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, prostitution, etc.)?	☐	☑	
Will the Sub-Project activities engage community labour?	☑	☐	If yes, Commmunity labor engagement agreement required

Section D: Natural Habitats

Will the Subproject:			Remarks- If yes, elaborate
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened plant and animal 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?	☐	☑	
Use irrigation system in its implementation?	☐	☑	

If the answer to any of the above is 'yes', please include an ESMP with the Subproject application.

Section E: Pesticides and Agricultural Chemicals

Will the subproject:			Remarks-If yes, elaborate
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?	☑	☐	
Involve annual inspections of the producers and unannounced inspections for Export produce?	☑	☐	
Require scheduled chemical/pesticide applications?	☐	☑	
Require chemical application even to areas distant away from the focus?	☐	☑	
Require chemical/pesticide application to be done by vulnerable groups (pregnant mothers, chemically allergic persons, elderly, etc.)?	☐	☑	

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

Section F: Indigenous Peoples/VMGs as per ESS7

Are there:			Remarks
IVMGs living within the boundaries of, or near the project?	☐	☑	Name of the VMG community
Members of VMGs in the area who could benefit from the project?	☑	☐	
IVMGs livelihoods to be affected by the subproject?	☐	☑	If yes, How
Unique/specific challenges for VMGs to benefit from the project?	☐	☑	Explain
VMGs as minority in the community?	☐	☑	If yes, Explain/name of minority VMG

Does VMG require to donate land to benefit from the project		NO ✓	If yes, follow Free, prior and informed consent procedure.

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

Section G: Land Acquisition and Access to Resources

Will the subproject:	Yes	No	Remarks
Require that land (public or private) be acquired (temporarily or permanently) for its development?	☑	☐	If yes, elaborate the tenure type
Require that community land be acquired (temporarily or permanently) for its development?	☐	☑	If yes, elaborate the registration status and community claims. Community land agreement required following principles of FPIC.
Require more than 10 percent of the affected private land parcel	☐	☑	If yes, exclude from the project proposal
Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)	☐	☑	If yes, Elaborate the current use.
Are complete land ownership documents available for the Sub- Project investment?	☑	☐	If no, what process is needed?
Is the land proposed have encumbrances (cautions, property tax, leases, easements, mortgages, etc)?	☐	☑	If yes, elaborate the encumbrance

Physically displace individuals, families or businesses?	☐	☑	If yes, exclude from the project proposal
Cause loss of income for more than 30 days	☐	☑	If yes, how many. Exclude from the project proposal
Result in temporary or permanent loss of crops, fruit trees/fencing and pasture land/ loss of income from business activity?	☐	☑	If yes, elaborate and prepare IRP
Adversely affect small communal cultural property such as funeral and burial sites, or sacred graves?	☐	☑	If yes, avoid or exclude from project proposal
Result in involuntary restriction of access by people to legally designated parks and protected areas?	☐	☑	If yes, exclude
Be on monoculture cropping?	☐	☑	

If the answer to any of the above is 'yes', please consult the mitigation measures in the ESMF.

Section H: Proposed action

(i) Summarize the above:	**(ii) Guidance**
☐ All the above answers are 'No' ☐ There is at least one 'Yes'	• If all the above answers are 'No', there is no need for further action; • If there is at least one 'Yes', please describe your recommended course of action (see below).

(iii) Recommended Course of Action

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

☐ CPCU, Social services officer, labour Officer, Children Officer and CDE will provide detailed guidance on mitigation measures as outlined in the ESMF; and

☐ Specific advice is required from CDE[1], Lead Scientist and CPCUs regarding Sub -project specific EA(s) and also in the following area(s)

☐ All Subproject applications/proposals MUST include a completed ESMF checklist. The NAVCDP-CPCU will review the subproject applications/proposals and the CDEs will sign off; The input from the NLC, Social Services office, Children's office, labour office, the CESCO, and CSS & GMO will be required before the documents are presented to the CPSC.

☐ The proposals will then be submitted to CPSC for clearance for implementation by communities in the proposed Subprojects. The projects that require CPRs will be forwarded to NPCU for further analysis, then forwarding to the World bank for approval and finally to NEMA for clearance certificate.

Expert Advice

☐ The Government of Kenya through the Department of Monuments and Sites of the National Museums of Kenya can assist in identifying and, mapping of monuments and archaeological sites;

☐ Expert guidance will also be provided by the land registrar on all issues related to land tenure, The children department on all issues on children, especially child labour, plus department of social services on IPs and vulnerable groups in the community, and

☐ Subproject specific EAs, if recommended, must be carried out by experts registered with NEMA and be followed by monitoring and review. During the process of conducting an EA the proponent shall seek views of persons who may be affected by the Subproject. The ESS10 requires consultation of Subproject affected groups and disclosure of EA's conclusions. In seeking views of the public after the approval of the Subproject, the proponent shall avail the draft EA report at a public place accessible to project-affected groups and local NGOs/CSO/SAIC/CDDCs.

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

Completed by: .....

Name: ..AMOS.....KOMBOLED.....

Position / Community: ..CHAIRPERSON.....

Date: .....2ND JULY 2025.....

Field Appraisal Officer (CDE):...Moni Komol.....

Signature: .....

COUNTY DIRECTOR OF ENVIRONMENT
NEMA - BUNGOMA
03 JUL 2025
P. O. Box 506-50200,
Email: bungoma@nema.go.ke

Date..3/7/2025.....

Note:

Project category	**Characteristics**
High	Full and extensive EIA needed- irreversible environmental impacts; impacts not easy to pick or isolate and mitigation cost expensive; EMP design not easily done; Must have the EIA done and future annual EAs instituted
Medium	Site specific environmental impacts envisaged; mitigation measures easy to pick, not costly and EMP design readily done; need an EIA and future EAs
Low	Have minimal or occasionally NO adverse environmental impacts; exempted from further environmental processes save environmental audits
Land	Land tenure documentation needed and land resolution and consent Form needed with project affected person/community
Loss of income and assets	Income restoration plan (IRP) needed

Presence of VMG/IP	Additional actions needed
Risk of Child labor/SEAH	Additional actions needed

Presence of VMG/IP	Additional actions needed
Risk of Child labor/SEAH	Additional actions needed

Annex 2: Certificate of registration of the Farmers Cooperative Union

DUPLICATE/RENEWAL

REPUBLIC OF KENYA

MINISTRY OF CO-OPERATIVE DEVELOPMENT

CERTIFICATE OF REGISTRATION

THE CO-OPERATIVE SOCIETIES ACT
(Cap. 490. Section 7)

REGISTRATION No. 3591

I hereby certify that the society under the name of

MOUNT ELGON FARMERS CO-OPERATIVE UNION 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 24TH *day of* OCTOBER *,19* 81

E.K. MUREITHI

Commissioner for Co-operative Development

Annex 3: Land Ownership Document

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

(*No.* 3 *of* 2012, *section* 108)

THE REGISTERED LAND ACT

(*Chapter* 300) (REPEALED)

Title Deed

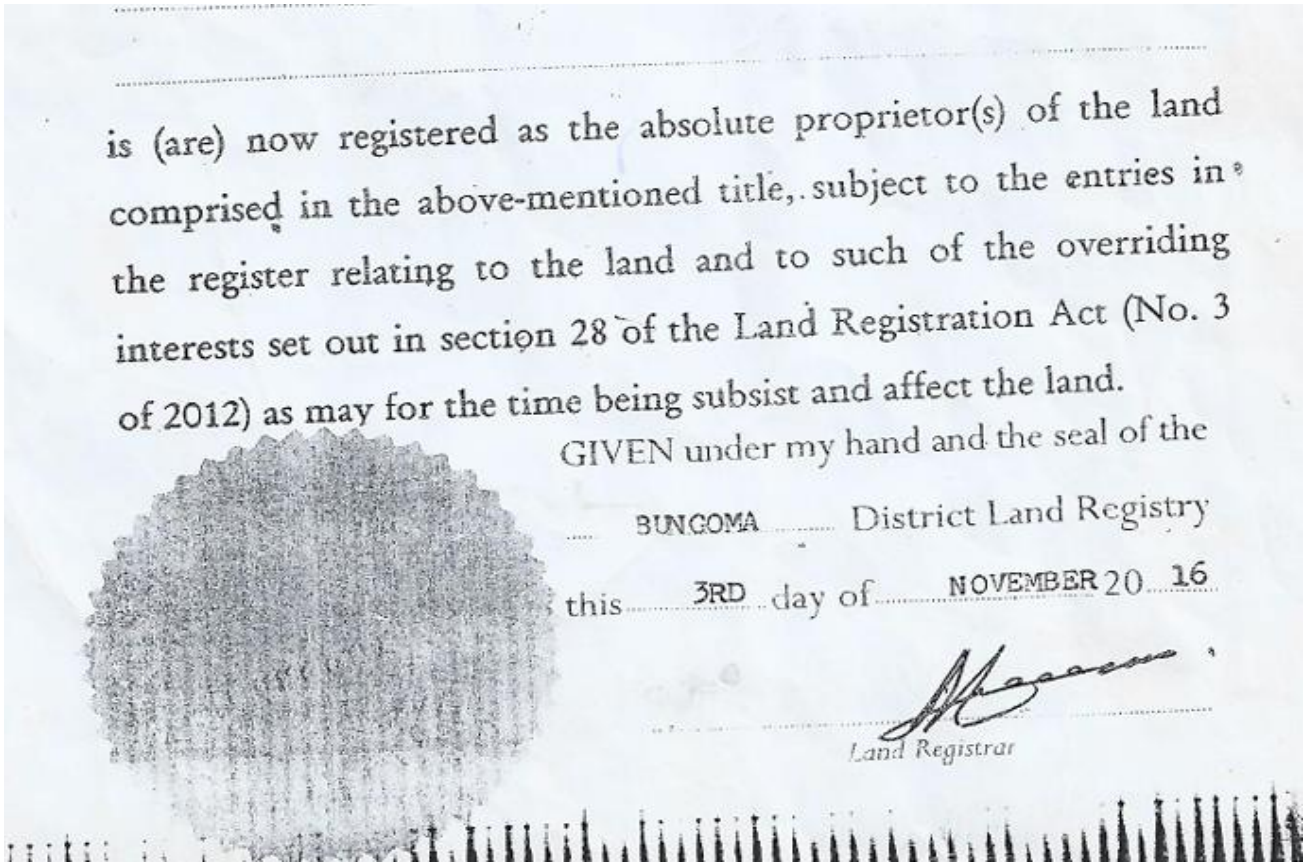
Title Number N.MALAKISI/W.SASURI/2015

Approximate Area ..... (0.40) HA

Registry Map Sheet No. 19

This is to certify that ..... MOUNT ELGON FARMER'S CO-OPERATIVE

UNION LIMITED, P O BOX 69 CHEPTAIS = = = = = = = = =



is (are) now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and to such of the overriding interests set out in section 28 of the Land Registration Act (No. 3 of 2012) as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the

..... BUNGOMA ..... District Land Registry

this ..... 3RD ..... day of ..... NOVEMBER 20 16

Land Registrar

1

31.10.2016

N. MALAKISI/W. SASURI

2015

0.40

19

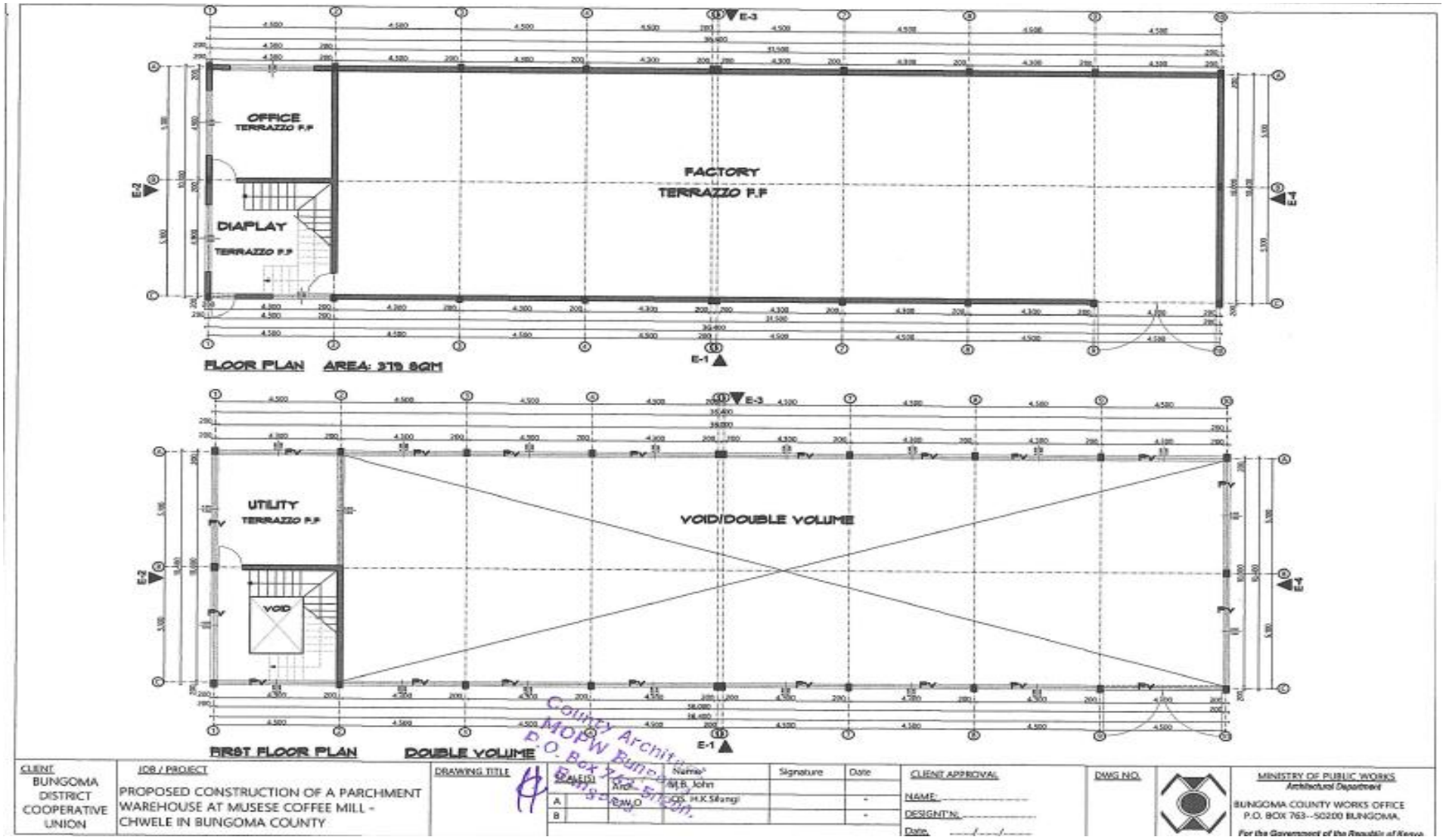
JB DIVISION OF PLOT NO.1523

2 31.10.2016 MOUNT ELGON FARMER'S CO-OPERATIVE UNION LTD

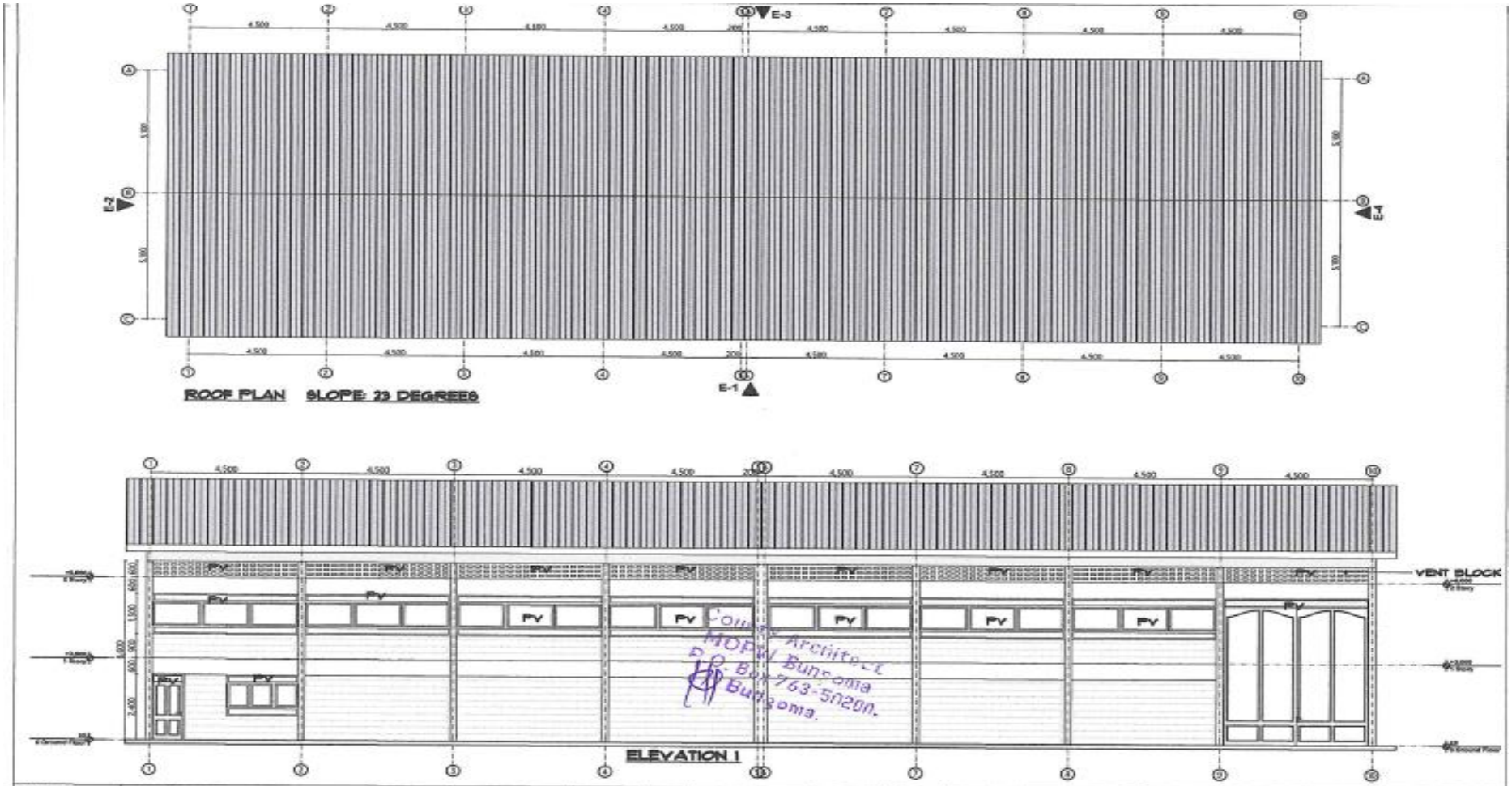
3 3.11.2016 TITLE DEED ISSUED

Annex 4: Design and Layout of the Coffee Processing Unit

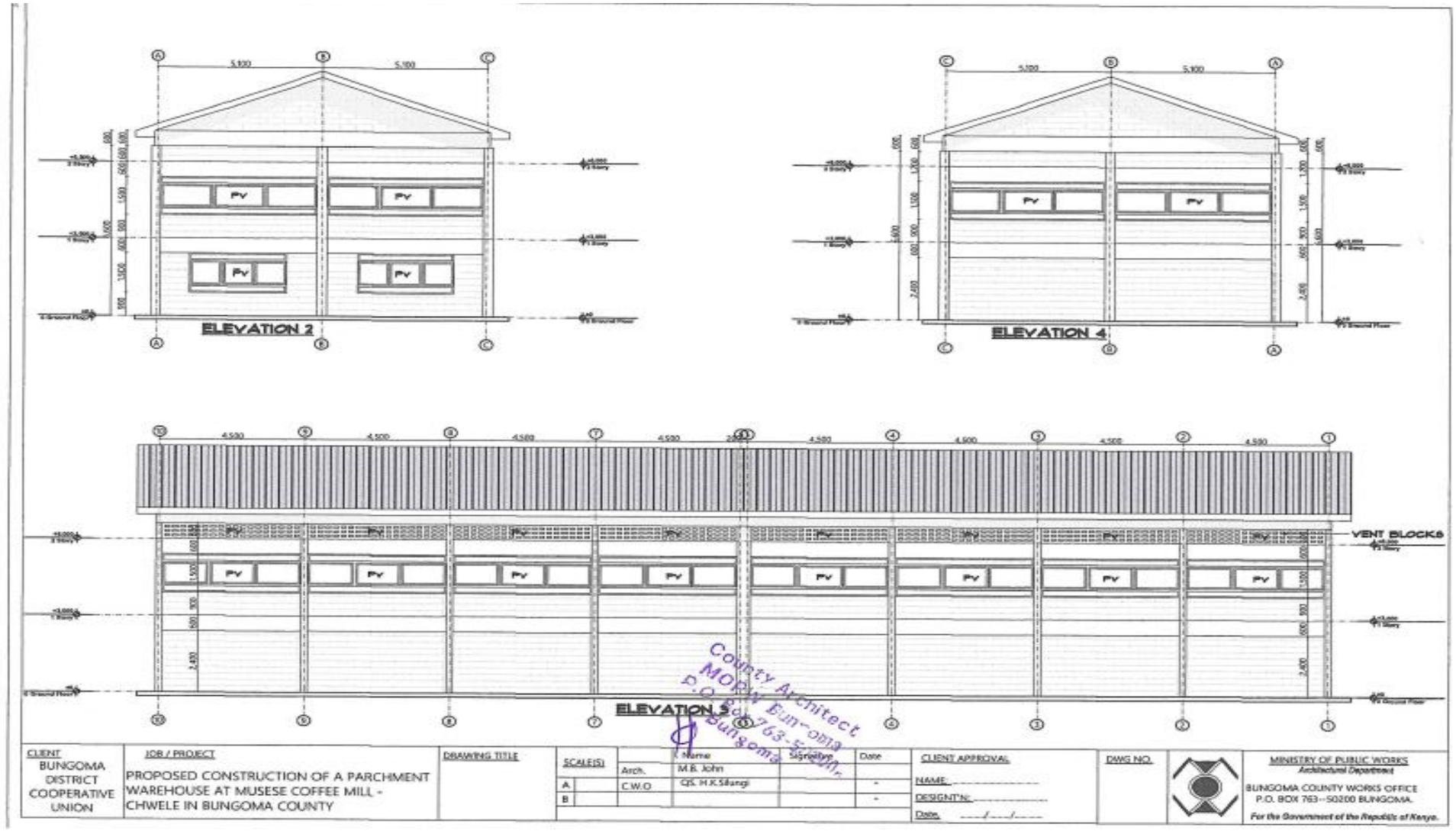
3D Layout of the processing and packaging unit



Floor Design of Processing & Packaging unit



CLIENT	JOB / PROJECT	DRAWING TITLE	SCALE(S)		Name	Signature	Date	CLIENT APPROVAL	DWG NO.	
BUNGOMA DISTRICT COOPERATIVE UNION	PROPOSED CONSTRUCTION OF A PARCHMENT WAREHOUSE AT MUSESE COFFEE MILL - CHWELE IN BUNGOMA COUNTY			Arch.	M.B. John			NAME:		MINISTRY OF PUBLIC WORKS Architectural Department BUNGOMA COUNTY WORKS OFFICE P.O. BOX 763--50200 BUNGOMA.
			A	C.W.O	QS. H.K.Silungi			DESIGNT'N:		
			B					Date:		



View Designs of the processing and packaging unit

Annex 5: Bills of Quantities

COUNTY GOVERNMENT OF BUNGOMA
MINISTRY OF ROADS, INFRASTRUCTURE AND PUBLIC WORKS
DEPARTMENT OF PUBLIC WORKS

SPECIFICATIONS AND BILLS OF QUANTITIES

FOR

THE PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHESIKAKI IN BUNGOMA COUNTY.

TENDER NO.....

PREPARED BY

County Quantity Surveyor
P.O Box 763
Bungoma.

County Elect./Mech. Engineer
P.O Box 763
Bungoma.

County Works Officer
Department of Public Works
P.O. Box 763
Bungoma

County Architect
P.O Box 763
Bungoma.

County structural Engineer
P.O Box 763
Bungoma.

Issued By:
Chief Officer
Ministry of Roads,
Infrastructure and Public works
Bungoma

JAN 2025

County Architect
MOPW Bungoma
P.O. Box 763-

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	Site preparations:				
A	Clear site of all grass, shrubs, debris, undergrowth including small trees not exceeding 600mm girth; grub up roots and cart away from site	Sm	379	45	17,055.00
	Excavations and Earthworks				
	Excavations to include; trimming sides and bottoms of excavations to approval;				
B	Excavate to reduce levels commencing from existing ground level	Cm	569	400	227,600.00
C	Excavate pits for column bases not exceeding 1.5meters deep starting from mass excavated levels; excavation in fill material	Cm	67	350	23,450.00
D	Excavate trenches for foundations not exceeding 1.5meters deep starting from mass excavated levels; excavation in fill material	Cm	71	350	24,850.00
E	Extraover all excavations for excavating in soft rock including for 'tuff' (provisional)	Cm	12	600	7,200.00
F	Extraover all excavations for excavating in hard rock Class I	Cm	32	1800	57,600.00
	Disposal				
G	Backfill with selected excavated material around foundations; compaction in layers not exceeding 150mm thick; including double or multi handling of excavated materials if required	Cm	1	200	200.00
H	Load, remove and deposit surplus excavated material away from site; including double and multi - handling where required	Cm	1	450	450.00
	Filling				
	Hardcore or other approved filling as described				
J	Imported selected and approved murrum base or other equal and approved material to make up levels: scarify, spread, grade and compact to approval: in layers not exceeding 200mm: standard compaction to 95% MDD AASHTO T180; on well rammed hard stratum	Sm	379	400	151,600.00
	Sub - Total Carried to Collection				265,350.00
	Page 2/1				

County Architect
MOPW Bungoma
P.O. Box 763-Bun

A	300mm hand packed hardcore fill; in 150mm layers; levelled and graded to falls, crossfalls and slopes; blind with quarry waste layer; heavy compaction by rolling to 98% MDD AASHTO; blinded with 50mm thick stone dust to receive surface bed (m.s)	Sm	379	350	132,650.00
	Sundries				
B	Allow for planking , strutting and shoring to sides of all excavations; and keeping all excavations free from all fallen materials (provisional)	Item	1	10000	10,000.00
C	Allow for keeping excavations free from mud and all waters including for spring or running water (provisional)	Item	1	10000	10,000.00
	Surface treatment				
	Anti - termite treatment				
D	Approved chemical anti-termite treatment as Premise 200 SC supplied by Bayer Environmental Science executed by an approved specialist under a ten-year guarantee,to surfaces of hardcore and tops of foundation walls; applied strictly in accordance with the manufacturer's instructions	Sm	379	150	56,850.00
	Thermal and Moisture Protection				
	Damp-proof membrane				
E	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (m.s) with 300mm side and end laps (measured nett, allow for laps)	Sm	379	150	56,850.00
	Damp-proof courses, as described, to walls; 3-ply bituminous felt bedded in cement sand (1:4) mortar with 300mm end laps;				
F	200mm wide	Lm	71	200	14,200.00
	Sub - Total Carried to Collection				280,550.00

Page 2/2

County Architect
MOPW Bungoma
P.O. Box 763-...
Bu...

	Concretework				
	Insitu Concrete:				
	Plain: class 15: in				
A	**Blinding: 30mm thick under column bases (m.s)**	Sm	43	430	20,230.00
B	Blinding: 50mm thick under strip footings (m.s)	Sm	47	450	21,150.00
	Vibrated; reinforced; class 25; in				
C	**Foundation walls strip footings**	Cm	11	14300	139,300.00
D	Column bases	Cm	14	14500	203,000.00
E	Columns	Cm	8	14500	116,000.00
F	150mm thick ground floor surface slab; with and including construction joints, saw cut joints finished with mastic sealant to structral engineer's approval	Sm	379	2175	824,325.00
	Reinforcement				
	Ribbed Reinforcement Bars: High tensile: to B.S 4449: virgin bars from approved supplier: (approval by structural engineer.)				
G	16mm diameter Bars	Kg	865	160	138,400.00
H	10mm diameter Bars	Kg	293	160	47,200.00
J	8mm diameter Bars	Kg	876	160	140,160.00
	Mesh fabric reinforcement ref A142 to B.S 4483; weighing 2.22 kg per square metre and setting in concrete with 200mm side and end laps (measured nett, allow for laps); from approved supplier; (approval by client, architect and structural engineer.)				
K	Ground floor surface slab (m.s)	Sm	379	450	170,550.00
	Shuttering				
	Sawn formwork; to				
L	Vertical sides of footings	Sm	102	500	51,000.00
M	Vertical sides of column bases	Sm	42	500	21,000.00
N	Vertical sides of columns	Sm	82	500	41,000.00
P	Vertical edges of surface slab over 75mm but not exceeding 150mm girth	Lm	54	75	4,050.00
	Expansion joint				
Q	20mm thick compressible joint filler Flexcell or equal between columns and walls	Sm	26	800	20,520.00
R	20 x 20 mm deep Sika flex Pro-2HP or Equal joint Sealant	Lm	85	800	68,000.00
	Sub - Total Carried to Collection				2,046,105.00
	Page 2/3				

County Architect
MOPW Bungoma
P.O. Box 763-50200
Bungoma

	Walling				
	Natural hard machine cut stone; selected and approved; in walling with a crushing strength of 7.5 N/mm²; walling bedded and jointed in cement and sand (1:3) mortar in 200mm course height; reinforcement with and including 25mm wide x 20 gauge hoop iron and column wall ties at every alternate course as described; including all cuttings as required; in:				
A	200mm thick foundation walling	Sm	118	1500	177,000.00
	Plinth Finishes				
	15 mm cement and sand (1:3) render finished with woodfloat to;				
B	Concrete/masonary surfaces to receive stone cladding (m.s.)	Sm	65	350	22,750.00
	Prepare and apply three coats bituminous paint; application strictly to manufacturer's instructions; to				
C	Rendered plinths (m.s)	Sm	65	350	22,750.00
	Sub - Total Carried to Collection				222,500.00
	COLLECTION				
	From Page 2/1				265,350.00
	From Page 2/2				280,550.00
	From Page 2/3				2,046,105.00
	From Above				222,500.00
	Total for Substructure: Carried to Main Summary				**2,814,505.00**
	Page 2/4				

County Architect
MOPW Bungoma
P.O. Box 763-

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	Concretework				
	Insitu Concrete:				
	Vibrated; reinforced; class 25; in				
A	Columns	Cm	19	14500	275,500.00
B	Bracing beams	Cm	5	14500	72,500.00
C	Beams	Cm	15	14500	217,500.00
D	Ring beams	Cm	11	14500	159,500.00
E	Gable beams	Cm	1	14500	14,500.00
F	Staircases	Cm	5	14500	72,500.00
G	200mm thick suspended slabs	Sm	146	2900	423,400.00
H	150mm thick staircase landings	Sm	5	2175	10,875.00
	Reinforcement				
	Ribbed Reinforcement Bars; High tensile; to B.S 4449; virgin bars from approved supplier; (approval by client, architect and structural engineer.)				
G	16mm diameter Bars	Kg	2315	160	370,400.00
H	10mm diameter Bars	Kg	897	160	143,520.00
J	8mm diameter Bars	Kg	1041	160	166,560.00
	Sub - Total Carried to Collection				**1,926,755.00**
	Page 2/5				

County Architect
MOPW Bungoma
P.O. Box 763-Bu...

	Shuttering				
	Sawn formwork to:				
A	Vertical sides of columns	Sm	196	500	98,000.00
B	Sides and soffits of bracing beams	Sm	65	500	32,500.00
C	Sides and soffits of beams	Sm	87	600	52,200.00
D	Sides and soffits of ring beams	Sm	75	600	45,000.00
F	Soffits of suspended solid slabs; horizontal	Sm	146	500	73,000.00
H	Soffits of landing	Sm	5	500	2,500.00
I	Soffits of staircases waist; sloping over 15degrees from the horizontal	Sm	9	600	5,400.00
J	Vertical edges of suspended slabs over 225mm but not exceeding 300mm girth	Lm	21	100	2,100.00
K	Vertical edges of risers over 75mm but not exceeding 150mm girth	Lm	32	100	3,200.00
	Corner edge protection				
	Mild steel protection angles and flats				
L	50 x 50 x 6mm angle rail, 1500mm high fixed to corners of columns with lugs at 300mm centres	Lm	48	950	45,600.00
	Touch up primer coat, prepare and apply two undercoats and one gloss finishing coat of eggshell paint to metalwork				
M	Surfaces not exceeding 100mm girth	Lm	48	100	4,800.00
	Sub - Total Carried to Collection				364,300.00

County Architect
MOPW Bungoma
P.O. Box 763-E...
Bun...

	COLLECTION				
	From Page 2/3				1,926,733.00
	From Page 2/6				364,300.00
	Total for Reinforced Superstructure Carried to Main Summary				2,291,033.00
	Page 2/7				

County Architect
MOPW Bungoma
P.O. Box 763-Bu...

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL, CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 3				
	WALLING				
	External Walling				
	Precast concrete class 20 (12mm aggregate), including formwork, finishing four face on all exposed surfaces, hoisting and placing in position, bedding and jointing in cement and sand (1:3) mortar				
A	200 x 200mm lintol	Lm	17	1,200	20,400.00
B	350 x 50mm coping; throated	Lm	56	650	36,400.00
	Natural hard machine cut stone; selected and approved; in walling with a crushing strength of 7.5 N/mm²; walling bedded and jointed in cement and sand (1:5) mortar in 200mm course height; reinforcement with and including 25mm wide x 20 gauge hoop iron and column wall ties at every alternate course as described; including cutting as required; in:				
C	200mm thick walling	Sm	595	1700	676,600.00
D	200mm thick to gable walling	Sm	22	1700	37,400.00
E	200mm thick parapet walling	Sm	8	1700	14,110.00
	Internal Walling				
	Natural hard machine cut stone; selected and approved; in walling with a crushing strength of 7.5 N/mm²; walling bedded and jointed in cement and sand (1:3) mortar in 200mm course height; reinforcement with and including 25mm wide x 20 gauge hoop iron and column wall ties at every alternate course as described; including cutting as required; in:				
F	200mm thick walling	Sm	165	1700	280,500.00
	Total for Walling Carried to Main Summary				**1,065,410.00**
	Page 2/8				

County Architect
MOPW Bungoma
P.O. Box 763-Bu...

County Architect
MOPW Bungoma
P.O. Box 763-Bun...

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL, CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 4				
	ROOF CONSTRUCTION AND FINISHES				
	Roof Structure				
	Structural steel complete with all plates, all bolts, cleats, caps, brackets etc as described to B.S. 449 Part 2				
	The following in framed structural steelwork complete with and including all welded and bolted connections; delivery to site and erection with and including one shop coat red oxide zinc chromate primer or similar approved; hoisting and fixing in position average 8550mm height; including rafter expansion joints; drilling holes for bolts				
	Prepare, touch up primer, apply two undercoats and one zinc chromate or equal enamel paint; colour as selected by architect and approved by client; to all exposed metal surfaces				
A	75 x 50 x 3.0mm RHS External Truss members	Lm	829	950	787,550.00
B	50 x 50 x 3.0mm SHS Internal Truss members	Lm	632	950	600,400.00
C	12mm dia antisag rods	Lm	121	200	24,200.00
D	50 x 50 x 6.0mm Angle Bracings	Lm	213	950	202,350.00
E	152.4 x 50.8 x 2mm Z Purlins	Lm	748	1000	748,000.00
	Roof Covering				
	28gauge (0.50mm thick) prepainted resin coat IT5 roofing sheets; colour as selected by Architect; fixed with self-drilling fasteners to steel purlins; allow foam fillers to open eaves and ridge				
F	Roof covering not exceeding 45 degrees from the horizontal	Sm	598	1800	1,076,400.00
	0.50mm thick prepainted resin coat mild steel plain sheet; colour to match roofing sheets fixed with self-drilling fasteners/screws				
G	Ridge/hip sheet to match; 600mm girth	Lm	41	990	40,590.00
H	Dimo but berge flashing; trapezoidal sheets	Lm	21	990	20,790.00
	1mm thick UV IT5 profile translucent roofing sheets; fibre glass; 3.5m long, clear type; complete withwith self-drilling fasteners/screws, flashings and all fixtures necessary for erection				
I	Roof lights	No	6	10200	61,200.00
	Total for Roof Construction Carried to Main Summary				3,561,480.00
	Page 2/9				

County Architect
MOPW Bungoma
P.O. Box 763-Bun...

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 5				
	FINISHES				
	External Wall finishes				
	15 mm cement and sand (1:3) render finished with woodfloat to:				
A	Concrete/masonry surfaces to receive exterior paintwork (m.s.)	Sm	376	350	131,600.00
	Prepare and apply three coats exterior quality matt emulsion paint: colour to approval by application strictly in accordance with suppliers printed instructions				
B	Rendered walls and concrete surfaces externally	Sm	376	400	150,400.00
C	extra-over for walling for keying and pointing 10mm thick cement and sand (1:3) mortar to the masonry surfaces	Sm	398	400	159,200.00
	Internal wall finishes				
	Plaster; 9mm thick first coat of cement and sand (1:6); 3mm second coat of cement and lime putty (1:10); steel trowelled smooth				
D	12mm thick to concrete or masonry walls	Sm	643	400	257,200.00
	Prepare and apply one undercoat, one skimming coat, two finishing coats of first quality matt emulsion paint from an approved supplier (approval by the project Architect) on:				
E	Plastered walls (m.s)	Sm	643	450	289,350.00
	Internal Floor Finishes				
F	Powerfloat finish treated with and including SIKA floor- cure hard 24 or equal approved 5lites per sqm appliaction rate as per manufacturer's written instructions; to; concrete floors (m.s)	Sm	379	1100	416,900.00
	Internal Ceiling Finishes				
	Plaster; 9mm thick first coat of cement and sand (1:6); 3mm second coat of cement and lime putty (1:10); steel trowelled smooth				
G	12mm thick to concrete soffits and sides of beams	Sm	157	400	62,800.00
I	False ceiling as chipboard sheets; to B.S. 2604; fixed on and including 50 x 50 sawn cypress bandering with nails; nail heads punched and puttied; perimeter frame plugged into masonry or concrete heads; butt V-joints etc to pattern to approval; complete with all fixing accessories	Sm	379	1300	492,700.00
	In wrot cypress; prime grade	Lm	21	170	3,536.00
J	75 x 25mm moulded cornice	Lm	21	170	3,536.00
	Sub - Total Carried to Collection				972,400.00
	Page 2/10				

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	Prepare and apply one undercoat; one skimming coat; two finishing coats of first quality matt emulsion paint from an approved supplier (approval by the project Architect) on:				
A	Plastered concrete soffits and sides of beams (m.s)	Sm	157	300	47,100.00
B	Ditto sloping over 5 degrees from the horizontal	Sm	157	300	47,100.00
C	Ditto to soffits of chipboard ceiling	Sm	379	300	113,700.00
	Staircase finishes				
	Cement and sand (1:4) screeds, backings, beds etc to entrance steps				
D	20mm bed to landings finished to receive grano finish (m.s)	Sm	5	400	2,000.00
E	20 x 275mm wide paving to treads to receive grano finish (m.s)	Lm	23	150	3,420.00
F	15 x 150mm high paving to risers to receive grano finish (m.s)	Lm	25	100	2,520.00
	Granolithick paving to architect's approval; complete with and including plastic dividing strips set flush with paving; machine polished				
G	20mm thick to landing slabs	Sm	5	2400	12,000.00
H	20 x 275mm wide paving to treads to receive granite finish (m.s)	Lm	23	800	18,240.00
I	20 x 150mm high paving to risers to receive granite finish (m.s)	Lm	25	400	10,080.00
J	10 x 150mm high skirting	Lm	12	400	4,640.00
K	Ditto to profile of treads and risers	Lm	7	600	3,900.00
L	Extra over treads for non-slip caborandum strip	Lm	25	300	7,560.00
	Railing and Balustrading				
	Main staircase railing: In Mild Steel:one coat red oxide primer; three coats enamal gloss paintwork to metal surfaces				
M	900mm high balustrading comprising 50mm diameter mild steel handrail welded onto and including 40mm diameter mild steel vertical balusters: 1100mm high balusters at 900mm centres: 2No. 30 x 3mm mild steel flat intermediate rails infilled with and including 25mm diameter 2tier mild steel intermediate balusters at 900mm centres (Refer to architect's details)	Lm	32	5,000	160,000.00
N	Ditto sloping	Lm	7	5,500	38,500.00
	Sub - Total Carried to Collection				1,450,232.00
	From Page 2/11				

County Architect
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	COLLECTION				
	From Page 2/10				972,400.00
	From Page 2/11				1,450,232.00
	Total for Finishes Carried to Main Summary Page 2/12				**2,422,632.00**

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL, CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 6				
	STEEL CASEMENT WINDOWS				
	Supply, assemble and fix the following purpose made 25 x 4mm Z-section heavy duty steel casement windows incorporating complete with fixing lugs on, hoodedmosquito proofed permanent vent, pin type hinges including all necessary cutting, (Ironmongery from "Kenxmetal", or other equal and approved manufacturers); one coat red oxide painted				
A	Window overall size 4500 x 1500mm high	No	18	35,475	638,550.00
B	Window overall size 3000 x 1500mm high	No	4	24,750	99,000.00
	Glazing				
C	6mm first quality clear sheet glass and glazing to steel windows with putty strips, in panes over 0.1 but not exceeding 0.50 square meters.	Sm	134	1500	201,000.00
	Burglar grilles: fabricated from 12 x 12mm solid bars to architects details (Refer to attached window schedule)				
D	External windows	Sm	134	4500	603,000.00
	Touch up primer, prepare and apply two undercoats and one gloss finishing coat enamel paint to metalwork				
E	Steel surfaces generally (both sides measured flat overall)	Sm	268	300	80,400.00
	Precast concrete class 20 (12mm aggregate), including formwork, finishing fair face on all exposed surfaces, hoisting and placing in position, bedding and jointing in cement and sand (1:3) mortar				
F	275 x 75mm thick window cill once rebated; 20 x 20mm splayed drip and jointing in cement and sand 1:3 mortar	Lm	110	630	71,500.00
	Total for Window: Carried to Main Summary				**1,693,450.00**
	Page 2/13				

County Architect
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		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL, CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 7				
	DOORS				
	Notes:.				
	Refer to architect's door schedule for door details				
	Framing: In wrot Mahogany:				
A	150 x 50mm door frame	Lm	21	1400	29,400.00
B	50 x 25mm profiled architrave	Lm	21	300	6,300.00
C	25 x 25mm quadrant	Lm	21	200	4,200.00
	45mm thick solid core flush door to B.S 459: Part 2; faced both sides with 3mm thick mahogany veneer on and including blockboard infill; lipped on all edges with 10mm thick wrot mahogany; stained				
D	Door overall size 900 x 2400mm high	No	5	9000	27,000.00
E	Double Door overall size 1200 x 2400mm high	No	2	12000	24,000.00
	Fanlight glazing				
F	6mm thick first quality clear sheet glass and glazing to timber frames (m.s) with and including 25 x 10mm timber beads and washleather, in panes over 0.1sqm but not exceeding 0.5sqm	Sm	2	1,600	3,200.00
F	Mild steel double door overall size 4300 x 3400mm high fixed to and including 100 x 50mm mild steel RHS surround frame; door infilled with 2mm mild steel pressed metal panels welded to 100 x 50mm surround frame and 50 x 50mm intermediate frames; allow for	No	2	265000	530,000.00
G	Ditto for door overall size 900 x 2400	No	1	12960	12,960.00
	Supply and fix the following ironmongery as UNION				
H	BP-DW-402525 brass ball bearing hinges; 100 mm	Pr	1.5	750	1,125.00
K	DS-2038 PL floor mounted door stops	No	4	500	2,000.00
M	3-Lever mortice lock with scroll design brass handles	No	1	4800	4,800.00
	Sub - Total Carried to Collection				644,985.00
	From Page 2/14				

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	Painting and decorating				
	Prepare and apply three coats aluminium wood primer to woodwork				
A	Surfaces over 100mm but not exceeding 200mm girth	Lm	21	30	630.00
B	Surfaces not exceeding 100mm girth	Lm	22	15	330.00
	Prepare and apply three coats polyurethane clear polish to woodwork				
C	General timber surfaces	Sm	5	400	2,000.00
D	Surfaces over 300mm girth	Sm	0	400	0.00
	Prepare and apply one coat etching primer two undercoats and one coat oil paint full gloss furnish to metal work				
E	General surfaces of steel doors (both sides measured overall)	Sm	55	300	16,500.00
	Sub - Total Carried to Collection				19,460.00
	COLLECTION				
	From Page 3/7/1				644,985.00
	From Above				19,460.00
	Total for Doors Carried to Main Summary				**664,445.00**
	Page 2/15				

County Architect
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		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	ELEMENT NO. 8				
	BWIC WITH MECHANICAL AND ELECTRICAL INSTALLATIONS				
	Inspect all drawings and Mechanical Bills of Quantities as provided or at the Engineer's office: allow for all builders work associated with mechanical installations				
A	Cut away for sanitary fittings and pipework : form all holes, chases, etc and make good after the plumber	Item	1	50000	50,000.00
	BWIC WITH ELECTRICAL INSTALLATIONS				
	Inspect all drawings and Mechanical Bills of Quantities as provided or at the Engineer's office: allow for all builders work associated with electrical installations				
B	Cut away for electrical points, fittings and equipment : form all holes, chases, etc and make good after the electrician	Item	1	50000	50,000.00
	Total for BWIC with Mechanical Installation: Carried to Main Summary				**100,000.00**
	Page 2/16				

County Architect
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		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.				
	BILL NO 2				
	MAIN SUMMARY				
				Page	
1	Substructures				1,926,755.00
2	Reinforced Concrete Superstructures				2,291,055.00
3	Walling				1,065,410.00
4	Roof Construction and Finishes				3,561,480.00
5	Finishes				2,422,632.00
6	Windows				1,693,450.00
7	Doors				664,445.00
9	BWIC with Mechanical installations And Electrical installations				100,000.00
	Total Carried to Main Summary				13,725,227.00
	Total for Warehouse Carried to Grand Summary			**Kshs.**	**13,725,227.00**
	Page 2/17				

County Architect
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P.O. Box 763-Bun

		Unit	Qty	Rate	Amount (Kshs.)
	PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL, CHWELE IN BUNGOMA COUNTY.				
	BILL NO 3 - PRIME COST AND PROVISIONAL SUMS				
	Prime Cost Sums				
	The following Prime Sums are to be executed or supplied by Nominated Sub-Contractors				
A	Provide a prime cost sum for Electrical Installations	Item	1	900000	900,000.00
B	Allow for Profit	Item		3%	27,000.00
C	Allow for General and Special attendance	Item		3%	27,000.00
	Provisional Sums				
	The following Provisional Sums are to be measured on completion and priced in accordance with the rates contained in these Bills of Quantities or pro-rata thereto or deducted in whole if not required.				
D	Provide a provisional sum for Contigencies	Item	1	800000	800,000.00
	Total for Prime Cost and Provisional Sums Carried to Grand Summary			**Kshs.**	**1,754,000.00**
	Page 3/1				

County Architect
MOPW Bungoma
P.O. Box 763-50200
Bun...

PROPOSED CONSTRUCTION OF A COFFEE ROASTING AND PROCESSING UNIT AT MT ELGON COFFEE MILL- CHWELE IN BUNGOMA COUNTY.

	GRAND SUMMARY	Page	Amount
1	PRELIMINARIES		400,000.00
2	WAREHOUSE		13,725,227.00
3	PRIME COST AND PROVISIONAL SUMS		1,754,000.00
	SUB - TOTAL (VAT. INCL.)		15,879,227.00
	L COST OF TENDER CARRIED TO FORM OF TENDER (VAT AND PRRA LEVY INCLUSIVE)	KSHS.	15,879,227.00

County Architect
MOPW Bungoma
P.O. Box 763-

Annex 6: Minutes of the Public Participation Meeting

MT ELGON FARMERS' CO-OPERATIVE UNION LTD

P.O BOX 69-5021, CHEPTAIS. Mobile: 0717409541,
Email: melgoncoffeemill@gmail.com

MINUTES OF PUBLIC PARTICIPATION MEETING AT MT ELGON COFFEE MILLS (MECOM) HELD ON 3RD JULY 2025 AT MECOM GROUNDS

In attendance

See attached list

Agenda

- Assess the community's perception and acceptability of the project.
- Identify anticipated environmental and social risks associated with the machine.
- Propose mitigation strategies through stakeholder engagement.

Min 1/03/07/25

The meeting started with a word of prayer from Alex Temba at 10.30 a.m. and followed by a welcoming remark from the Chairperson of Mecom. He informed the members about importance of the meeting and encouraged them to participate actively. He then handed over to the NEMA lead expert to continue.

Min 2/03/07/25

The NEMA lead expert informed members the purpose of the meeting in regard to the requirement of the EMCA act of 1999. He went further to ask the members if they are aware of the proposed project and its cost. The members unanimously answered with affirmative yes and one member even added that their community contribution is Kshs 2. Million which will be added to the 24 million from NAVCDP.

Min 3/03/07/25 Key Presentations and Discussions

NEMA representative took the members through Possible Environmental Impacts, She

Highlighted that combustion-based machinery could generate noise pollution affecting surrounding communities, warned of air emissions that could contribute to local air pollution, Noted the risk of accumulation of solid wastes, especially husks and packaging waste and mentioned challenges in liquid waste disposal, especially from the cleaning and combustion processes.

On the Potential Social Risks, Social expert raised concerns about child labour if oversight is weak during machine operations, Warned about lack of access to worker rights such as insurance and safety coverage. Cautioned against low wages and poor working conditions if management isn't properly regulated. She also mentioned risk of community displacement depending on where the machine is sited. Other risks identified include:

- Gender-Based Violence (GBV)

- Generational gap and youth exclusion
- Economic hardship due to market fluctuations
- Increased competition from more industrialized processors
- Climate change impacts on coffee yields and sustainability

She urged for the inclusion of a social protection framework for workers.

The Community institution officer mentioned the importance of being in groups and saccos and benefits attached to them; he encouraged members to join groups to access affordable credits.

Key Observations

- The community showed a generally positive attitude toward the machine acquisition.
- There was active participation and candid engagement from both youth and elders.
- Environmental and social risks were well acknowledged and should be factored into project planning.
- There is high interest in group formation, with some farmers already organized in FPOs and SACCOs.

Recommendations

- Establish clear operational guidelines and training for machine handlers to ensure safety and compliance.
- Include clauses in agreements to protect workers' rights (e.g., insurance, minimum wage, safety
- Ensure gender inclusion

There being no other business the meeting ended with a word of prayer from Fred Muliro at 2.30 p.m.

Chairperson: AMOS MAMBELEP Secretary: PAUL WERESIA

Sign: [signature] Sign: [signature]

Date: 10/7/2025 Date: 10/7/2025

Stamp: MECOM COFFEE MILL DATE ... BOX 69-50-01 CHEPTAIS

Annex 7: List of Attendance to the Public Participation Meeting

=REPUBLIC OF KENYA

Republic of Kenya

NAVCDP

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: MECOM PUBLIC PARTICIPATION

VENUE: MECOM GROUNDS DATE: 3/6/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	IRINE WAFULA	30925329	F	MOALFIC	HQ	0799329924	✓		
2	CALEB SIMIYU	41292014	M	NAVCDP	HQ	0717574074	✓		
3	NAOMI KOMOL	26062665	F	NEMA	HQ	[illegible]		✓	
4	ABIUD BIKETI	22664536	M	NAVCDP	HQ	0728466210		✓	
5	LEWIS MARATHI	27740639	F	NAVCDP	HQ	0727303542		✓	
6	DIANA NAMBUCHI	31940791	F	SOCIAL SERVICES	HQ	0729873155	✓		
7	Joseph Saya	21677746	M	NEMA	HQ	[illegible]		✓	
8	Job Wefulwa	21608169	M	NAVCDP	HQ	[illegible]		✓	
9	Sally Burolo	34756910	F	NAVCDP	HQ	0792202201	✓		
10	Gloria Chikuku	35844974	F	NAVCDP	HQ	[illegible]	✓		
11	Sharon Mukhamiah	[illegible]	F	NAVCDP	HQ	0703874130	✓		

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

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Republic of Kenya

NAVCDP

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE: MECOM GROUNDS DATE: 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1.	BENSON BARASA	[illegible]	M	N-CHESIKAKI	CHESIKAKI	0757208866	✓		
2.	Moses Muganda	25355829	M	Chepkitale	Chepkitale	0722648771	✓		
3.	Wekesa Mukhe	26372689	M	[illegible]	[illegible]	[illegible]	✓		
4.	Alex Temba	32140951	M	Tuikut	Chesikaki	[illegible]	✓		
5.	FREDRICK CHEPKOY	20079429	M	Tuikut	Chesikaki	078962805	✓	✓	
6	ANDREW Fwamba	25064924	M	Kimama	Chesikaki	[illegible]	✓	✓	
7	SIMON WEKHALWA	24106642	M	ARECOM	CHESIKAKI	[illegible]	✓	✓	
8	FRED MULIRO	41040277	M	CHESIKAKI	CHESIKAKI	0798411281	✓	✓	
9	ISAAC WANJALA	42397058	M	CHESIKAKI	CHESIKAKI	[illegible]	✓	✓	

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

=REPUBLIC OF KENYA

Republic of Kenya

NAVCDP

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE: MECOM GROUNDS DATE: 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	ARNOLD KANEMBOI	39158387	M	MECOM	CHESIKAKI	0746911920	✓		[signature]
2	MARK K MATANDA	23866283	M	MECOM	CHESIKAKI	071138[illegible]	✓		[signature]
3	Mark Wafula	36844911	M	MECOM	CHESIKAKI	0792364499	✓	✓	[signature]
4	Leonard Simiyu	27634789	M	MECOM	CHESIKAKI	0712131617			[signature]
5	Irine masinde	29738350	V	MECOM	Chesikaki	0728729560	✓		[signature]
6	Griffins Wandiema	2874[illegible]8	M	MECOM	Chesikaki	07119[illegible]	✓		[signature]
7	George C. Chemos	28653601	M	MECOM	Chesikaki	0707015358		✓	[signature]
8	Beatrice [illegible]	7584394		MECOM	Tuikut	0728338272		✓	[signature]
9	GLADYS T. MAIBEI	27861696	F	MECOM	Kimama	0792051358	✓		[signature]
9	MOSES KAMWAMA	21886912	M	MECOM	CHEPTAIS	0742883881	✓	✓	[signature]

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National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE: MECOM GROUNDS DATE: 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	NDEGWE BONFACE	29816008	M	NEW CHESIKAKI	CHESIKAKI	0723050033	✓		[signature]
2	Jack Kibet	31363[illegible]	M	New Chesikaki	Chesikaki	0769276129	✓		[signature]
3	MILTON MASAI	30235[illegible]	M	TUKUIT	CHESIKAKI	0758791393	✓		[signature]
4	[illegible] [illegible]	[illegible]5398	M	New Chesikaki	Chesikaki	0701763592	✓		[signature]
5	BRIAN KANEMBOI	29160820	M	NEW CHESIKAKI	CHESIKAKI	0790002512	✓		[signature]
6	Emmanuel Kisebe	21653683	M	NAVCDP	HQ	0726927587		✓	[signature]
7	Caroline Chirambe	21884570	F	NAVCDP	HQ	0729908471		✓	[signature]
8	Shadrack Wasike	12704403	M	NAVCDP	HQ	0727374615		✓	[signature]

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NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE: MECOM GROUNDS DATE: 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	ROBERT KIMIM DSISEI	25423223	M	TUIKUT FC	CHESIKAKI	0700729631	36 yrs	✓	[illegible]
2	EVANS CHEPKOI CHERUBET	31215803	M	TUIKUT FC	CHESIKAKI	0716496329	31	31	[illegible]
3	Abraham Chesebe	37676250	M	Sasur FC	Chesikaki	0794788780	26 yrs	26	[illegible]
4	Masai Chrispinus	30977824	M	Sasur FC	Chesikaki	0713086150	32 yrs	35	[illegible]
5	Felix Kibet	38966678	M	cheptais	Cheptais	0706056637	26 yrs	26 yrs	FK.
6	Robert Wasingerio	24862269	M	Kimama	Chesikaki	0701634493	30 yrs	30 yrs	[illegible]
7	ENOCK KISIERO	8013324	m	Tuikut	Chesikaki	0726558785	56 year		Enck.
8	George Kirui	20957014	m	Tuikut	Chesikaki	0722786074	68		George
9	Hesbon Kimi	31661523	M	Chesikaki	Chesikaki	0703551322	34		[illegible]
10	Silas Wanjala	14610781	M	Chesikaki	Chesikaki	0716065289		49	Silas
11	CALEB MASIKA	32209767	M	NChesikaki	Chesikaki	0741760875	32		[illegible]

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

=REPUBLIC OF KENYA

Republic of Kenya

NAVCDP

NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY: PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE: MECOM GROUNDS DATE: 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	LEVY PKANIA	39659041	Male	TUIKUT	Chesikaki	0705374625	25	✓	[illegible]
2	MASAI TIPSS	29209586	M	CHESIRO	CHEPTAIS	0722852013		✓	[illegible]
3	EDWIN MUSANI	28375867	M	CHESIKAKI	CHESIKAKI	0795356441		✓	[illegible]
4	Benson Chebii	7343251	M	Tuikut	Chesikaki	0702327270			[illegible]
5	SIMON KORIR	31721211	M	TUIKUT	CHESIKAKI	0703540033			[illegible]
6	Bera Chemoiwo	25054632	M	Tuikut	Chesikaki	0726835873			[illegible]
7	LAZARO WANAMBISI	6082854	M	NEW CHESIKAKI	CHESIKAKI	0723685902	60	✓	[illegible]
8	JESTIMORE KIBABA	4391343	M	NEW CHESIKAKI	CHESIKAKI	0720392726		✓	[illegible]
9	RUTH CHEBET	28363519	F	CHEMEKER	CHESIKAKI	0714734458	✓		[illegible]
10	AMOS WASIKE	40290862	M	CHESIKAKI	CHESIKAKI	0113168698		✓	Amos
11	Edward Kinja	41937340	M	Kapkoto	Chesikaki	0799535668	✓	✓	[illegible]

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

=REPUBLIC OF KENYA

Republic of Kenya

NAVCDP

NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY PUBLIC PARTICIPATION FOR UPGRADING MECOM

VENUE MECOM DATE 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1.	PHILIP NDIEMA	25600526	M	MECOM COFFEE MILL	CHESIKAKI	0717409581		✓	[signature]
2	PAUL WERESIA	4372800	M	MECOM COFFEE MILLS	CHESIKAKI	0711965758		✓	[signature]
3	JACKSON MUKE	2098727	M	MECOM COFFEE MILL	CHEPTAIS	0714117677		✓	[signature]
4	AMOS MAMBOLEO	4386232	M	MECOM COFFEE MILL	CHESIKAKI	0729159148		✓	[signature]
5	BASINEL WANJALA	25365679	M	mecom coffee mill	CHESIKAKI	0713917691		✓	[signature]
6.	KEVIN WANJEA	35601866	M	Mecom coffee Mill	CHESIKAKI	0111567894	✓		[signature]
7	Pancras Sande	38899362	M	Mecom coffee mill	Chesikaki	0757016062	✓		[signature]
8	martin Kimwanga	20923128	M	meCom Coffee	Tulkut	0714054156	✓		[signature]
9.	WESLEY W. MOREI	4391342	M	MECOM	CHESIKAKI	0741253822		✓	[signature]
10	ANTONY NYOTO	13313190	M	MECOM MILL	CHESIKAKI	0728545159		✓	[signature]
11	PHILIP MANBU	22970685	M	MECOM	CHESIKAKI	0715721450		✓	[signature]

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

=REPUBLIC OF KENYA

Republic of Kenya

NAVCDP

NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT

National Agricultural Value Chain Development Project (NAVCDP)

ACTIVITY PUBLIC PARTICIPATION FOR UPGRADING MECON MILL

VENUE MECON DATE 3/07/2025

ATTENDANCE LIST

NO	NAME	ID NO	GENDER	ORGANIZATION	WARD	PHONE NO	AGE <35 YRS	>35 YRS	SIGNATURE
1	LEONARD KARETE	34251110	MALE	MECOM	CHESIKAKI	0707714582	29	24	[signature]
2	SALAS MULILO	24042704	M	MECOM	CHESIKAKI	0707938040	—		[signature]
3	WILLIAM K MACHEMU	25103024	M	MOCM	CHESIKAKI	0745694076	—		[signature]
4	MAUAKA W. JOSELYNE	29563719	F	MECOM	CHESIKAKI	0718575182	✓		[signature]
5	GYLAIDER NAIMOI	40041815	F	MECOM	CHESIKAKI	0715609994	✓		[signature]
6	DAMARIS CHEBET	39501508	F	MECOM	CHESIKAKI	0114699337	✓		[signature]
7	Amos CHEMWOR	27924863	M	MECOM	CHESIKAKI	070589386	✓		[signature]
8	Winsa Ketuk	41218240	M	MECOM	CHESIKAKI	07039662?1	✓		[signature]
9	EDWIN MACHENE	12419265	M	MECOM	CHESIKAKI	0769627334	✓	✓	[signature]
10	ELLY CHEBUI	23004482	M	MCOM	CHEPTAIS	0728028564		✓	[signature]
11	Nicholas chepsengeny	34334297	M	MECOM	CHESIKAKI	0797489949	✓		[signature]

National Agricultural Value Chain Development Project (NAVCDP) – Bungoma County

Annex 8: Questionnaire Responded to

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

Through the support from NAVCDP, Mt Elgon Coffee Mill (Mecom) intent to Establish a coffee roasting and packaging unit. The proposed project is anticipated to enable beneficiaries to roast and package coffee ready for use.

The Environmental Management and Coordination Act (1999) reviewed 2015 and its subsidiary legislation (Environmental Impact Assessment and Audit) Regulations 2019 requires this type of project to undertake Environmental and Social Impact Assessment before financing or construction. The Kenya Constitution (2010) gives the public and stakeholders the right to participate and demand a clean and healthy environment. We are therefore seeking your views on the likely impacts of this project. Your views will only be used to inform mitigation measures for the proposed project and not any other unintended purpose.

Participation is voluntary, and your responses will be kept confidential.

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1. General Information

1.1 Name (Optional): _____

1.2 Gender: ☐ Male ☑ Female ☐ Other

1.3 Age: ☑ 18-30 ☐ 31-45 ☐ 46-60 ☐ Above 60

1.4 Village/Location: CHEPTAIS

1.5 Occupation: ☑ Farmer ☐ Businessperson ☐ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0114697337 Date: 03/07/2025

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2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☐ Community meeting ☐ Government officials ☑ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☑ Very beneficial ☐ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: It will create employment.

---

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☐ Yes ☐ No ☑ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☐ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☐ Increased farm productivity ☑ Employment opportunities ☐ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☐ Yes ☑ No

4.4 If yes, what are they?

☐ Conflicts over water use ☐ Land disputes ☐ Displacement of people ☐ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☐ Yes ☑ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☐ Land disputes ☐ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed [redacted] project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting It will create Job opportunity.

5.3What specific recommendations do you have for the proposed project?

I do recommend this project to support most youths in Job opportunities.

Thank you for your participation.

I.D Number: 39501508 Sign: [redacted]

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

Through the support from NAVCDP, Mt Elgon Coffee Mill (Mecom) intent to Establish a coffee roasting and packaging unit. The proposed project is anticipated to enable beneficiaries to roast and package coffee ready for use.

The Environmental Management and Coordination Act (1999) reviewed 2015 and its subsidiary legislation (Environmental Impact Assessment and Audit) Regulations 2019 requires this type of project to undertake Environmental and Social Impact Assessment before financing or construction. The Kenya Constitution (2010) gives the public and stakeholders the right to participate and demand a clean and healthy environment. We are therefore seeking your views on the likely impacts of this project. Your views will only be used to inform mitigation measures for the proposed project and not any other unintended purpose.

Participation is voluntary, and your responses will be kept confidential.

1. General Information

1.1 Name (Optional): BRIAN KWEMBOI

1.2 Gender: ☑ Male ☐ Female ☐ Other

1.3 Age: ☑ 18-30 ☐ 31-45 ☐ 46-60 ☐ Above 60

1.4 Village/Location: CHEMONDI 7 LOCATION CHESIKAKI

1.5 Occupation: ☑ Farmer ☐ Businessperson ☐ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0790002512 Date: 03/07/2025

2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☐ Community meeting ☐ Government officials ☑ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☑ Very beneficial ☐ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: It helps us youths to avoid idleness.

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☑ Yes ☐ No ☐ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☐ Pollution ☑ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?
Planting of trees around the project to avoid Soil erosion

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☐ Increased farm productivity ☑ Employment opportunities ☐ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☑ Yes ☐ No

4.4 If yes, what are they?

☐ Conflicts over water use ☑ Land disputes ☐ Displacement of people ☐ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☑ Yes ☐ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☑ Land disputes ☐ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed [redacted] project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting Helps youths to get jobs and avoid idleness.

5.3 What specific recommendations do you have for the proposed project?

The Proposed Project will help us to get some income and growth rate of Production.

Thank you for your participation.

I.D Number: 39160820 Sign: Bkelw

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

Through the support from NAVCDP, Mt Elgon Coffee Mill (Mecom) intent to Establish a coffee roasting and packaging unit. The proposed project is anticipated to enable beneficiaries to roast and package coffee ready for use.

The Environmental Management and Coordination Act (1999) reviewed 2015 and its subsidiary legislation (Environmental Impact Assessment and Audit) Regulations 2019 requires this type of project to undertake Environmental and Social Impact Assessment before financing or construction. The Kenya Constitution (2010) gives the public and stakeholders the right to participate and demand a clean and healthy environment. We are therefore seeking your views on the likely impacts of this project. Your views will only be used to inform mitigation measures for the proposed project and not any other unintended purpose.

Participation is voluntary, and your responses will be kept confidential.

---

1. General Information

1.1 Name (Optional): TITUS MASAI

1.2 Gender: ☑ Male ☐ Female ☐ Other

1.3 Age: ☐ 18-30 ☑ 31-45 ☐ 46-60 ☐ Above 60

1.4 Village/Location: CHEPTAIS

1.5 Occupation: ☑ Farmer ☐ Businessperson ☐ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0722540131 Date: 14/07/25

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2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☐ Community meeting ☐ Government officials ☑ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☐ Very beneficial ☑ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: Job opportunities

---

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☐ Yes ☑ No ☐ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☑ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?

Emmision of poisonous gases, & so planting of trees to gap the gases.

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☑ Increased farm productivity ☐ Employment opportunities ☐ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☑ Yes ☐ No

4.4 If yes, what are they?

☐ Conflicts over water use ☐ Land disputes ☑ Displacement of people ☐ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☑ Yes ☐ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☐ Land disputes ☑ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed [redacted] project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting It will create job opportunity.

5.3What specific recommendations do you have for the proposed project?

I thank the MECON for coming up with that idea, which will improve the life of the society

Thank you for your participation.

I.D Number: 29209586 Sign: _____

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

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The Environmental Management and Coordination Act (1999) reviewed 2015 and its subsidiary legislation (Environmental Impact Assessment and Audit) Regulations 2019 requires this type of project to undertake Environmental and Social Impact Assessment before financing or construction. The Kenya Constitution (2010) gives the public and stakeholders the right to participate and demand a clean and healthy environment. We are therefore seeking your views on the likely impacts of this project. Your views will only be used to inform mitigation measures for the proposed project and not any other unintended purpose.

Participation is voluntary, and your responses will be kept confidential.

1. General Information

1.1 Name (Optional): HESBON KIRUI

1.2 Gender: ☐ Male ☑ Female ☐ Other

1.3 Age: ☐ 18-30 ☐ 31-45 ☑ 46-60 ☐ Above 60

1.4 Village/Location: Chesikaki

1.5 Occupation: ☐ Farmer ☑ Businessperson ☐ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0705851322 Date: 3/4/2025

2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☐ Community meeting ☐ Government officials ☑ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☐ Very beneficial ☑ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: It will Benefit the Community

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☐ Yes ☑ No ☐ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☐ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☑ Increased farm productivity ☐ Employment opportunities ☐ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☐ Yes ☑ No

4.4 If yes, what are they?

☐ Conflicts over water use ☐ Land disputes ☐ Displacement of people ☐ Other (Specify):

_____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☐ Yes ☑ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☐ Land disputes ☐ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed ~~irrigation~~ project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting _____

Creating Employment opportunities & also improve livelihoods of the Community

5.3What specific recommendations do you have for the proposed project?

Creating Employment to Entire Community & Society in general

Thank you for your participation.

I.D Number: 31461503 Sign: _____

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

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The Environmental Management and Coordination Act (1999) reviewed 2015 and its subsidiary legislation (Environmental Impact Assessment and Audit) Regulations 2019 requires this type of project to undertake Environmental and Social Impact Assessment before financing or construction. The Kenya Constitution (2010) gives the public and stakeholders the right to participate and demand a clean and healthy environment. We are therefore seeking your views on the likely impacts of this project. Your views will only be used to inform mitigation measures for the proposed project and not any other unintended purpose.

Participation is voluntary, and your responses will be kept confidential.

1. General Information

1.1 Name (Optional): Masai Chrispinus

1.2 Gender: ☑ Male ☐ Female ☐ Other

1.3 Age: ☐ 18-30 ☑ 31-45 ☐ 46-60 ☐ Above 60

1.4 Village/Location: Sasur

1.5 Occupation: ☑ Farmer ☐ Businessperson ☐ Employed ☐ Other (Specify): Coffee Farmer

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0713986150 Date: 3/7/2025

2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☐ Community meeting ☐ Government officials ☑ NAVCDP representatives ☐ Other (Specify):

2.3 What is your perception of the project?

☑ Very beneficial ☐ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: It will generate job to the locals, which would improve living standards

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☑ Yes ☐ No ☐ Not sure

3.2 If yes, what are your concerns? Due to emission of gases during

☐ Water depletion ☐ Soil erosion ☑ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?
planting of trees to cap the poisonous gases emission to the environment

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☐ Increased farm productivity ☑ Employment opportunities ☐ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☑ Yes ☐ No

4.4 If yes, what are they?

☐ Conflicts over water use ☐ Land disputes ☑ Displacement of people ☐ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☑ Yes ☐ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☑ Land disputes ☐ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed ~~irrigation~~ project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting It will create job opportunities which improve living standards

5.3 What specific recommendations do you have for the proposed project?

We thank the Mt Elgon Coffee, for coming up with that idea.

Thank you for your participation.

I.D Number: 30777824 Sign: _____

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

Through the support from NAVCDP, Mt Elgon Coffee Mill (Mecom) intent to Establish a coffee roasting and packaging unit. The proposed project is anticipated to enable beneficiaries to roast and package coffee ready for use.

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Participation is voluntary, and your responses will be kept confidential.

1. General Information

1.1 Name (Optional): PHILIP NDIEMA

1.2 Gender: ☑ Male ☐ Female ☐ Other

1.3 Age: ☐ 18-30 ☑ 31-45 ☐ 46-60 ☐ Above 60

1.4 Village/Location: SASURI LOCATION

1.5 Occupation: ☐ Farmer ☐ Businessperson ☑ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☑ More than 10 years

1.7 Phone Number: 0717409541 Date: 3/7/2025

2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☑ Community meeting ☐ Government officials ☐ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☑ Very beneficial ☐ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: IT SHALL PROMOTE LOCAL CONSUMPTION, PROVIDE READY MARKET FOR COFFEE FROM FARMERS & PROVIDE EMPLOYMENT.

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☐ Yes ☑ No ☐ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☐ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☑ Increased farm productivity ☑ Employment opportunities ☑ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☐ Yes ☑ No

4.4 If yes, what are they?

☐ Conflicts over water use ☐ Land disputes ☐ Displacement of people ☐ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☐ Yes ☑ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☐ Land disputes ☐ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed ~~irrigation~~ roasting and packaging project?

☑ Yes ☐ No:

5.2 Give reason for supporting or not supporting IT SHALL POSITIVELY IMPACT ON THE COMMUNITY AND COFFEE FARMERS AT LARGE.

5.3What specific recommendations do you have for the proposed project?

IT SHOULD BE IMPLEMENTED AS SOON AS POSSIBLE BECAUSE THE RAW MATERIALS (COFFEE) IS AVAILABLE.

Thank you for your participation.

I.D Number: 25402520 Sign: _____

Consultation and Public Participation Questionnaire towards the Proposed Upgrading of Mt. Elgon coffee mill through establishment of a coffee roasting and packaging unit in Bungoma County, Kenya

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Participation is voluntary, and your responses will be kept confidential.

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1. General Information

1.1 Name (Optional): Bernice Tumbo

1.2 Gender: ☐ Male ☑ Female ☐ Other

1.3 Age: ☐ 18-30 ☐ 31-45 ☐ 46-60 ☐ Above 60 ✓

1.4 Village/Location: CHEMONDI

1.5 Occupation: ☐ Farmer ☑ Businessperson ☐ Employed ☐ Other (Specify): _____

1.6 How long have you lived in this area? ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ More than 10 years ✓

1.7 Phone Number: 0728338872 Date: 3-7-2025

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2. Awareness and Perception of the Project

2.1 Are you aware of the proposed project?

☑ Yes ☐ No

2.2 How did you learn about the project?

☑ Community meeting ☐ Government officials ☐ NAVCDP representatives ☐ Other (Specify): _____

2.3 What is your perception of the project?

☑ Very beneficial ☐ Beneficial ☐ Neutral ☐ Problematic ☐ Very problematic

2.4 Please explain your response: It has alot Learning

---

3. Environmental Concerns

3.1 Do you foresee any negative environmental impacts from the project?

☐ Yes ☐ No ☑ Not sure

3.2 If yes, what are your concerns?

☐ Water depletion ☐ Soil erosion ☑ Pollution ☐ Biodiversity loss ☐ Other (Specify):

3.3 How do you think these impacts can be minimized?
plant trees

4. Social and Economic Considerations

4.1 How do you think the project will impact local livelihoods and economic activities?

☑ Positively ☐ Negatively ☐ No impact ☐ Not sure

4.2 What benefits do you expect from the project?

☐ Increased farm productivity ☐ Employment opportunities ☑ Improved food security ☐ Other (Specify): _____

4.3 Do you foresee any social challenges arising from the project?

☑ Yes ☐ No

4.4 If yes, what are they? Life style

☐ Conflicts over water use ☐ Land disputes ☐ Displacement of people ☑ Other (Specify): _____

4.5 Do you foresee any challenges with the installation of roasting and packaging infrastructure?

☐ Yes ☑ No

4.6 If yes, what are your concerns?

☐ Reduced coffee yields ☐ Land disputes ☑ High costs ☐ Other (Specify): _____

5. Recommendations and Way Forward

5.1 Do you support the implementation of the proposed [redacted] project?

☑ Yes ☐ No:

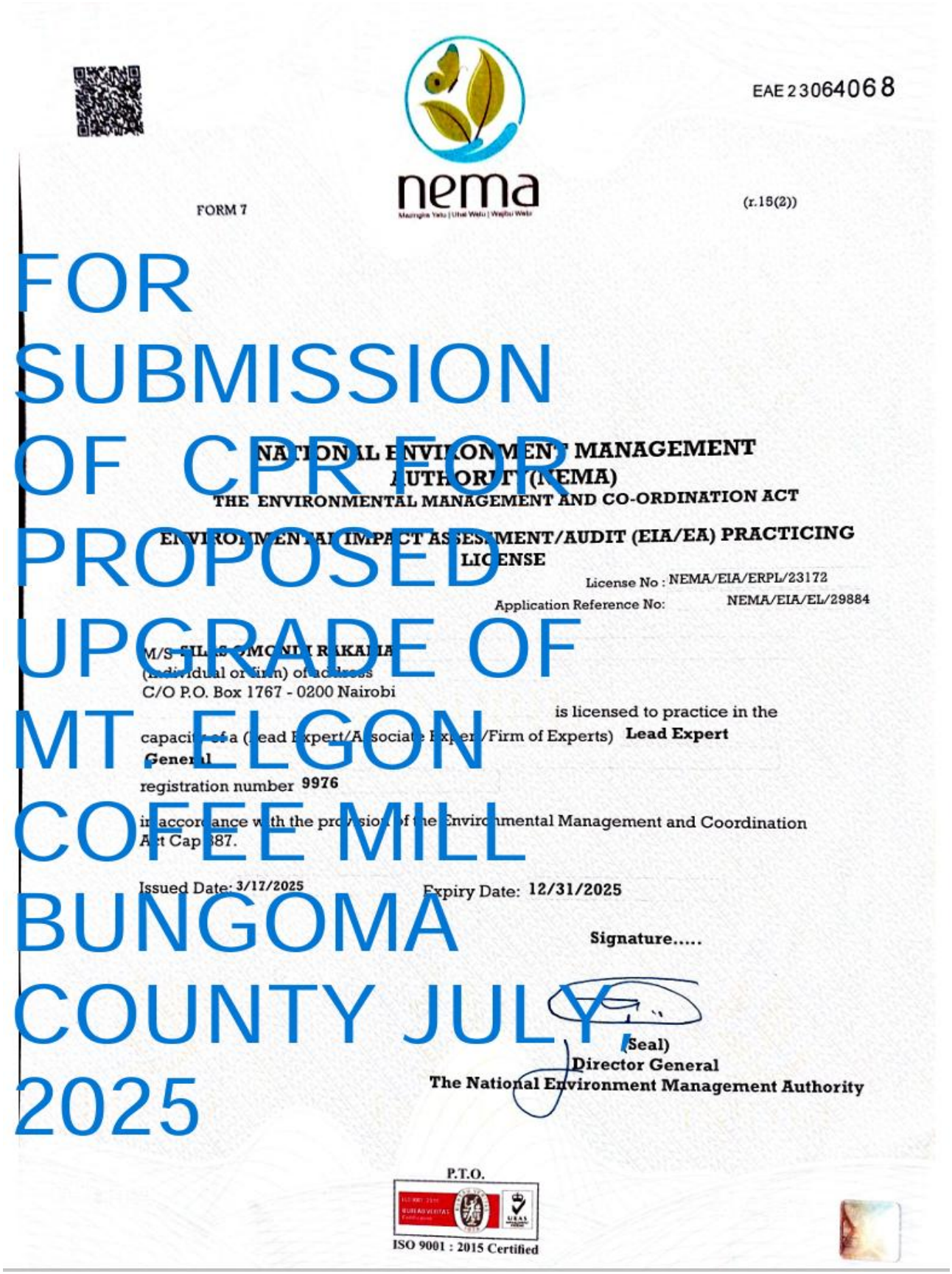
5.2 Give reason for supporting or not supporting Employment.

5.3What specific recommendations do you have for the proposed project?

Thank you for your participation.

I.D Number: 7584394 Sign: _____

Annex 9: NEMA EIA Practising License of the Lead Expert



EAE 2 3064068

FORM 7

(r.15(2))

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/23172

Application Reference No: NEMA/EIA/EL/29884

M/S SILAS OMONDI RAKALIA

(Individual or firm) of address

C/O P.O. Box 1767 - 0200 Nairobi

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**

General

registration number **9976**

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

Issued Date: 3/17/2025 Expiry Date: 12/31/2025

Signature.....

(Seal)

Director General

The National Environment Management Authority

P.T.O.

ISO 9001 : 2015 Certified

Annex 10: Previous EIA License for the Existing Coffee Processing Facility

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

County Director of Environment

Bungoma County

P.O. BOX 506-50200,

Bungoma.

NEMA/PR/BGM/5/2/0097

DATE: 16/01/2014

MT.ELGOM FC UNION LTD
SECONDARY PROCESSING OF COFFEE
P.O BOX 69,
CHEPTAIS

RE: ACKNOWLEDGEMENT OF ENVIRONMENTAL IMPACT ASSESSMENT PROJECT REPORT.

The National Environment Management Authority {NEMA} acknowledges receipt of ten {10} copies of Environmental Impact Assessment Project Report Number **NEMA/PR/BGM/5/2/0097** Prepared by **PATRICK K NGAINA Reg. no.0729. {EIA/Audit Lead Expert/Firm of Experts}.**

The reference number for the EIA report is **NEMA/PR/BGM/5/2/0097** for any future correspondence.

The report will be reviewed in accordance with Environmental Impact Assessment and Audit Regulations 2003; and NEMA will communicate its assessment/findings to you in due course.

In the interim, please do not commence or proceed with any development of the proposed project until you receive communication from NEMA on the same.

for JACOB ASEMBO

COUNTY ENVIRONMENT OFFICER

BUNGOMA COUNTY.

Annex 11: Registration Work Place Certificate for the Existing Coffee Processing Facility

DOSH 22

S. No. 15706

Certificate No. BGM15236/07/15/00
Date of Issue 01-Jul-15
Date Of Expiry 01-Jul-16

REPUBLIC OF KENYA

THE OCCUPATIONAL SAFETY AND HEALTH ACT, 2007

CERTIFICATE OF REGISTRATION OF A WORKPLACE

I hereby certify that the workplace named below has been duly registered in pursuance of sections 44/45(6) of the Occupational Safety and Health Act, No. 15 of 2007

Name of Occupier: **MT ELGON COFFEE MILL - (CHESSIKAKI)**

Address: P. O. Box **69** - **50201** **CHEPTAIS**

Plot No.: **N/M/WSARUA1527** Street/Road: **N/A**

Town: **CHEPTAIS** County: **BUNGOMA** District: **BUNGOMA**

Nature of Work: **COFFEE MILLING**

Reg. Fee: KShs. 2000 **OSH Fund: KShs. 3000**

V Director of Occupational Safety and Health Services

NOTE

This Certificate is valid only in respect of the Occupier and Workplace named above

This Certificate is issued under, and solely for the purposes of the Occupational Safety and Health Act and is without prejudice to the requirements of any other legislation relating to the workplaces.

Annex 12: Minutes of the Recent Board of Directors Meeting and Annual General Meeting

MT ELGON FARMERS' CO-OPERATIVE UNION LTD

P.O BOX 69-5021, CHEPTAIS. Mobile: 0717409541.
Email: mtelgoncoffeemill@gmail.com

MINUTES EXTRACT FOR THE BOARD OF DIRECTORS' MEETING HELD ON 8TH JULY 2024 AT MECOM PREMISES.

PRESENT

1.	Amos Mamboleo	Chairman
2.	Francis Kabindio	Vice Chairman
3.	Jackson Muke	Treasurer
4.	Paul Weresia	Hon.Secretary
5.	John Kitty	Director
6.	Violet Khanjila	Director
7.	Hillary Cheptot	Director
8.	Bernard Kipsang	Director
9.	Bernard Wepukhulu	Director
10.	Judith Chenogoi	Director
11.	Wycliffe Chongin	Director

INATTENDANCE

Philip Ndiema –CEO Mt Elgon Farmers' Cooperative Union

ABSENT WITH APOLOGY

Erick Kibet –Sub County Cooperative Officer Mt Elgon

AGENDA

1. Preliminaries-prayer

   Introduction

2. Confirmation of the minutes of previous meeting

MT. ELGON FARMERS' CO-OPERATIVE UNION DATE ..... P.O BOX 69-50201 CHEPTAIS

3. Matters arising
4. Preparation for the AGM-2024
5. Budget for the financial year 2024/2025
6. Husk house completion
7. SACCO
8. Bank facility /loan
9. NAVCDP
10. Books of accounts
11. AOB
12. Adjournment

MINUTE 1/8/7/2024 PRELIMINARIES

The chairman Mr. Amos Mamboleo called the meeting to order and invited John Kitty –director Chepkube for an opening prayer at 11.55am.

The introduction of the members for the meeting wasn't conducted the reason being familiarity.

Chairman's opening remarks

- Welcomed all the members for the days meeting.
- Requested them to cooperate and to work as a team.
- Thanked them for moving on well until that time when CS.Simon Chelugui for cooperatives was in our premises that satanic issues were raised through Musa Chebonya.He claimed MECOM was doing monkey business.
- Commended the international cooperative day celebrations held at Musese where presents were awarded to the participants and MECOM clients and beyond
- Kibingei FCS had already agreed to work with us (MECOM) freely.
- Let's be good ambassadors.
- He was hopeful for the things (good) ahead of us despite the current challenges.

MINUTE 9/8/7/2024 NATIONAL AGRICULTURE VALUE CHAIN DEVELOPMENT PROJECT(NAVCDP)

Having had clamour from coffee growers and affiliate societies to take their own coffee that they grow instead of tea,the board adopted and endorsed the support from NAVCDP in establishment of a commercial coffee roaster.Thisd venture was noted as a great milestone as it would promote not only local consumption but also provide employment for the people around and beyond.

The board also requested NAVCDP to help erect a warehouse which shall as well house the roaster and office for its staff.

The board equally resolved to make a contribution towards the very project in kind and any other form equated to the quoted value by between 15% to 20%.

The above was proposed by Khanjira and supported by Paul Weresia Wasing'ong'o.

MINUTE 11/8/7/2024 ADJOURNMENT

There being no other item to transact the chairman invited violet Khanjila ,Director Kapkurongo for a closing prayer at 3.40 pm.

Minutes Prepared By

Paul Weresia –Hon Secretary

Minutes Confirmed By

Amos Mamboleo -Chairman

MT.ELGON FARMERS' CO-OPERATIVE UNION DATE ..... P.O.BOX 69-50201 CHEPTAIS

MT ELGON FARMERS' CO-OPERATIVE UNION LTD

P.O BOX 69-5021, CHEPTAIS. Mobile: 0717409541,
Email: mtelgoncoffeemill@gmail.com

MINUTES EXTRACT FOR THE ANNUAL GENERAL MEETING HELD ON 10TH JULY 2024 AT MECOM PREMISES.

ATTENDANTS

All the 21 Co-operative societies (Coffee) Board of Mt Elgon sub-county.

1. Chepkube
2. Chebwek
3. Chesiro
4. Emanang'
5. Sasuri
6. Tuikut
7. Kapkota
8. Chemeker
9. New cheskaki
10. Kimama
11. Kimabole
12. Kapkurongo
13. Kutere
14. Chebich
15. Kapkosoobey
16. Kapsacho
17. Mwaimawi
18. Masindet
19. Kitaban
20. Kapsokisio
21. Cheriwet

MT.ELGON FARMERS' CO-OPERATIVE UNION DATE ..... P.O BOX 69-50201 CHEPTAIS

Mt Elgon Farmers' Cooperative Union Board

	Name	Designation	Society
1.	Amos Mamboleo	Chairman	Chemeker
2.	Jackson Muke	Treasurer	Chesiro
3.	Paul Weresia	Hon. Secretary	Kimama
4.	Richard Kipsang	Director	Chebich
5.	Violet Khanjila	Director	Kapkurongo
6.	Bernard Naibei	Director	Sasuri
7.	Hillary Cheptot	Director	Chebwek
8.	Bernard Wepukhulu	Director	New Chesikaki
9.	Wycliffe Chongin	Director	Tuikut

ABSENT WITH APOLOGY

Bishop Francis Kabindio — Vice-Chairman

MARKETING BOARD

Abidan Kapchanga — Chairman

Moses Motum

Jackson Chebus

ABSENT WITH APOLOGY

Bishop Francis Kabindio

STAFF

They were introduced by the CEO Philip Ndiema

INVITED GUESTS

1.	CPA Alfred Mulongo	Auditor
2.	Erick Kibet	Sub County Coop Officer
3.	James Kabunje	Assistant Chief
4.	Martin Naibei	Assistant Chief Chemond
5.	Titus Ngeywo	Assistant Chief
6.	John Kipkut	Assistant Chief Chepkube

7.	V Chebus	Chief Cheptais
8.	Maurice Wetala	Chief Chesikaki
9.	Jackson Komon	Chief Sasuri
10.	Mark Ochienga	Deputy OCS Cheskaki
11.	Lilian Moraa	Branch Manager Bungoma
12.	Peter Songok	CRO Coop Bank Bungoma
13.	Jonathan Mwatata	Commodities Fund
14.	Aaron	Commodities Fund
15.	Jacob Psero	MCA Cheskaki Ward

AGENDA

1. Preliminaries –prayer

Introduction

2. To read the notice convening the meeting
3. To confirm the quorum
4. To confirm minutes of the previous AGM
5. To discuss matters arising from the previous AGM
6. To receive and adopt the chairman's report
7. To receive, consider and adopt the financial statements for the year ended 30th September 2023
8. To receive, consider and adopt budget for the year 2024/2025
9. To consider and approve the maximum borrowing power
10. To endorse CPA Mulongo (County Government Auditor) to work on our financial books for the year 2023/2024 and 2024/2025.
11. Election of the supervisory committee
12. SACCO revival
13. NACDP
14. Speeches
15. Adjournment

MINUTE 1/10/7/2024 PRELIMINARIES

The chairman called the meeting to order at 10.50 am and welcomed Stephen Chongin CEO –Tuikut FCS For an opening prayer.

He then welcomed society chairpersons for the introduction of their board. I.e. Directors and CEOs

The union chair introduced his Board and also called the chairman –marketing who introduced his Board as well.

The CEO, Philip Ndiema introduced all the staff.

MT. ELGON FARMERS' CO-OPERATIVE UNION DATE ..... P.O BOX 69-50201 CHEPTAIS

Finally he welcomed the SCC officer –Mt Elgon, Erick Kibet who introduced all other invited guests.

MINUTE 2/10/7/2024 READING THE NOTICE CONVENING THE MEETING

The chair welcomed the Hon. Secretary to read the notice for the meeting (AGM-2024) dated 25th June 2024.This also included the meeting's agenda.

MINUTE 3/10/7/2024 CONFIRMING QUORUM

The chairman confirmed the quorum which was okay as members present were over ¾ (three quarters) and therefore formed the quorum to transact the business for the day

MINUTE 13 /10/2024 NAVCDP

The delegates were informed of the activities of Nationa Agriculture Value Chain Development Project.Members were informed of the various activies in coffee subsector,milk,avocado amongst others.It was reported that SACCOs were going to be formed in each ward and those societies not covered shall be captured through Bungoma Union and and Mt Elgon Union Ltd.

Mt Elgon Farmers' Cooperative Union Ltd was earmarked by NAVCDP for value addition and warehouse construction.

The above activities were proposed by Jackson Muke and Supported by Paul Msomberi as worth for us our growth and enjoying a cup of coffee we grow.

MINUTE 15/10/7/2024 ADJOURNMENT

The chairman thanked each and every one for attending and making this AGM a success. He then invited Salome Nanjala –Director Kapkota FCS for a closing prayer at 2.35pm

Minutes Prepared by

Paul Weresia -Hon Secretary

Minutes Confirmed by

Amos Mamboleo -Chairman

MT.ELGON FARMERS' CO-OPERATIVE UNION DATE ..... P.O.BOX 69-50201 CHEPTAIS