ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT SUMMARY PROJECT

REPORT

FOR THE PROPOSED UPGRADING OF KIANGOJU COFFEE FACTORY IN KIRIMUKUYU WARD, MATHIRA WEST SUB COUNTY, NYERI COUNTY

GPS COORDINATES: -0.463889, 37.068056

Sponsor	Government of Kenya / County Government of Nyeri with support from the World Bank
Client	Kenya Climate Smart Agriculture Project (KCSAP)
Proponent	Rutuma Amalgamated Farmers' Cooperative Society

DECLARATION

This Environmental and Social Impact Assessment (ESIA) is for the proposed upgrading of Kianjogu Coffee Factory in Kirimukuyu Ward, Mathira West Sub County, Nyeri County on plot No Kirimukuyu/Kiria/1112. The report has been prepared in accordance with NEMA regulations and World Bank environmental and social safeguards policies under the guidance and supervision of a registered NEMA Lead Expert. It meets statutory provisions stipulated in EMCA 1999, the Legal Notice No. 32 and the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019; World Bank KCSAP triggered policies OP 4.01, OP 4.10, OP 4.11, OP 4.12 and OP 4.09. I hereby certify that the details herein are correct and true to the best of my knowledge

DETAILS OF THE EIA EXPERT

Name of Expert:	Dickson Kimathi Muthaura
Expert Registration No.	6235
Address:	P.O Box 2269-60200 Meru
Phone Number:	0726250782

Signed: For expert 

NAME OF PROPONENT:	**RUTUMA AMALGAMATED FARMERS' COOPERATIVE SOCIETY**
ADDRESS:	**P.O BOX 1935 KARATINA**
NAME OF REPRESENTATIVE:	**BEATRICE MUMBI KABUGARA**
DESIGNATION:	**SECRETARY MANAGER**

Signed: 

ACKNOWLEDGEMENT

The ESIA Lead Expert wishes to thank the Government of Kenya, The World Bank Group and the Kenya Climate Smart Agriculture Project (KCSAP) Nyeri County Project Coordination Unit for financing the project and providing necessary assistance. I am most grateful to the Management of Rutuma Farmers' Cooperative Society for providing the relevant information, documentation and for their active contribution throughout the entire ESIA preparation period. My kind regards to the KCSAP Panel of Experts for providing guidance, training on ESIA. Further, I wish to thank the local communities in Mathira West Sub County and the local administration who graciously provided pertinent data and/or information, documents and actively participated in the many consultative meetings, discussions and public participation forums that were carried out during the assessment process.

Contents

EXECUTIVE SUMMARY

The County Government of Nyeri through the Kenya Climate Smart Agricultural project (KCSAP), a World Bank funded project, intends to increase agricultural productivity and build resilience to climate change risks for smallholder farmers and pastoral communities. The project intends to support the RUTUMA FARMERS CO-OPERATIVE SOCIETY LIMITED, whose main objective is to provide services to coffee farmers by aggregating, processing and selling the produce on behalf of its members for better prices to alleviate poverty in the community.

Rutuma Farmers' Cooperative Society is a registered farmers' Cooperative under the Cooperatives' Act. It was registered in 1999 under registration number CS/10644 and factory code . The Kianjogu Coffee factory be located in Kianjogu sub-location, Kirimukuyu ward, about 500 meters off the tarmac Nyeri- Karatina A2. The actual proposed construction site is in Kianjogu Village, Kirimukuyu Location, Kirimukuyu Ward within Mathira West Sub County at a private owned land on GPS Coordinates: -0.463889, 37.068056. The Land is registered under Tumutumu Farmers' Cooperative Society a private company on L.R. No. Kirimukuyu/Kiria/1112 measuring approximately 3.49 Ha. The proposed project will serve the local community under the larger Kirimukuyu ward and Nyeri County Coffee producing areas and will be implemented during the 2022-23 financial year.

The project activities will entail installation of an Eco pulper that is used to remove the outer flesh of the coffee cherry (pulp) with little volumes of water. This will improve the efficiency of the factory activities and use of water as a resource multiplying to less effluent generated during pulping

The Project area is within a zone with moderate to high agricultural production potential exacerbated by several factors including active coffee farming communities, access to good infrastructures such as Roads and market, telecommunication networks, and conducive natural ecological resources such as fertile soils, arable land and good climate. According to the bills of quantity, the projected cost is **Ksh. 6,025,714.**

The Lead Expert used various approved techniques and methods to capture both primary and secondary data including; desk review, use of Community Public Participation (CPP) forums,

focused Groups discussions, information sourcing and consultations through digital platforms such as telephone, email and WhatsApp and review of related literature materials.

Some of the negative attributes of the proposed project and weaknesses identified during the exercise included generation of biodegradable and non-biodegradable agricultural wastes such as coffee pulp, organic and inorganic garbage at both during construction and operation phases. Bringing in of new entrants such as contractors whose entry may also come with new social, health and security challenges or dynamics in the locality. Delivery of produce through various transport modes may also come with traffic issues. Resource use conflicts such as over exploitation of water resources within the production area for increased agricultural production and operation of the factory will be anticipated after project implementation. However, these anticipated negative attributes are mitigatable by proper impacts management and monitoring plans as agreed among the Stakeholders, proponent and the representatives of the local community, and as it has been outlined in the ESMP. The cost of ESMMP is Kshs 430,000

The proposed project will serve a very important role in boosting of coffee production, quality products after processing, as well as bringing of income and employment to Kenyans as well as revenues for both the national and the County governments. Therefore, expert recommendation is that every effort should be made to approve and to help the project realize this noble purpose.

ACRONYMS AND ABBREVIATIONS

AFFA	Agricultural Fisheries and Food Authority
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
CSR	Corporate Social Responsibility
EIK	Environment Institute of Kenya
EMCA	Environmental Management and Co-ordination Act
Gok	Government of Kenya
IMS	Integrated Management Practices
ISO	Organization for International Standardization
Kgs	Kilograms
KBS	Kenya Bureau of Standards
KS	Kenya Standards
KPIs	Key Performance Indicators
LoK	Law of Kenya
MC	Moisture Content
MAWASCO	Mathira Water and Sewerage Company
NEMA	National Environmental Management Authority
OSHA	Occupational Safety and Health Act
OHS	Occupational Health and Safety
PPEs	Personal Protective Equipment
PVC	Polyurethane vinyl Chloride
SOPs	Standard Operating Procedures
RFA	Rain Forest Certification
WRA	Water Resources Authority
WIBA	Work Injury and Benefits Act

CHAPTER ONE: INTRODUCTION

1.1 Background information

Rutuma Farmers' Cooperative Society is a registered farmers' Cooperative under the Cooperatives' Act. It was registered in 1999 under registration number CS/10644 and Kianjogu factory. Kianjogu Coffee Factory (Wet mill) is a coffee pulping station located in Nyeri County, Mathira West District, Kirimukuyu Location, Kiria sub location, Kiangoma/ Thaithi village. The site is bounded by coordinates bound the site 0°27'07.50"S 37°04'05"E. The factory is 5.5 kilometers from Karatina town along Karatina –Nyeri Highway (A2). It is part of the Rutuma Amalgamated Farmers' Cooperative Society. It is mainly made up of small farm holders with each farmer having an average of 100 trees. Currently the factory has an active membership of 466. The factory receives between 100,000 to 150,000 kilograms of coffee cherry and its processing machine has a capacity of processing 3,000kgs per hour.The factory is managed by a committee elected by farmers with one elected factory representative sitting at the Rutuma Amalgamated FCS management committee, a body that is involved in making major decisions for the factory and for the Rutuma Cooperative Society as a whole. Varieties of coffee grown by the farmers in the factory include SL 28, Ruiru 11 and Batian. Its catchment areas include Mutathi-ini, Ngurumo and Ndemu areas of Kiria Sub-location.

1.2 Project Justification

Kianjogu coffee factory has been experiencing low productivity and low efficiency in the primary processing of coffee. This usually leads to low quality clean coffee and thus low prices and consequently little income to the members. The society faces a serious challenge of low processing efficiency due to old processing facility. Overall, infrastructure challenges lead to an estimated 30% loss and low-grade produce.

The project was selected after a feasibility study was conducted in the area because of its relevance to KCSAP objective of: increasing agricultural productivity, increasing resilience to climate change (adaptation) and decreasing incidences of greenhouse gas (GHG) emission (mitigation). KCSAP through the coffee value chain has funded the factory in the sustainable production of clean coffee. This will enhance the efficiency of coffee factory.

1.3 Justification of conducting SPR

The SPR has been carried out in conformity with the recommendation of the County Director Environment (CDE) based on the screening report, nevertheless, the NEMA Public Notice on

ESIA and Legal Notice No 31 which identifies the proposed project as Low risk, thus requiring only SPR (ESIA)**.**

1.4 SPR objectives

- To comply with the Environmental (Impact Assessment and Audit) Regulations, 2003, Regulation 6, which requires that an application for an Environmental and Social Impact Assessment (ESIA) license and applicable World Bank Policies.
- Study the nature of the project supported by design and plan drawn to scale
- Study any environmentally sensitive areas to be affected by the project
- Availability of supportive environmental management infrastructure
- Conformity to land use plan or zonation plan
- Potential environmental and social impacts of the project cycle phase: planning, construction, operation and decommissioning
- Mitigation measures for all potential environmental and social impacts
- Environmental management plan for the entire project life cycle
- Conduct comprehensive public consultation
- To prepare SPR report for the client

1.5 SPR approach and methodology

1.5.1 Screening

According to the 2nd schedule of Environmental Management and Coordination Act (EMCA Cap 387) – amendment via legal notice no. 31 – April 2019, the proposed project lies within Category (1) Low-Risk Projects. The screening process revealed that anticipated environmental and social issues would be minimal. Therefore, the proponent through an Environmental Consultant undertook an Environmental Impact Assessment to submit a Summary Project Report (SPR) pursuant to Regulation 7 (1) of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019.

Further, World Bank project classification was also considered since the proposed project will be financed by World Bank (WB) or with financial participation of, the World Bank, through the Kenya Climate Smart Agriculture Project (KCSAP). The WB classifies its projects into four environmental assessment categories (A, B, C, and FI) according to the likely impacts on the environment.

The proposed project was found to be under World Bank Category B classification since the

project impacts will be site specific, few if any of them are irreversible and in most cases adverse effects will be limited; (some minor including dust, noise and health and safety impacts during refurbishment and operational phases) and mitigation measures can be designed. Such impacts have been identified both at screening stage and in this SPR report with comprehensive mitigation measures being fully designed and described in ESM&MP.

1.5.2 Scoping

The scoping exercise involved identification of significant issues and reasonable project alternatives to the proposed project. This was done to enable the proponent focus on available resources on the assessment of those issues and alternatives. The Environmental Expert identified key stakeholders that would be affected by the project's activities and developed information on the natural resources that would be affected.

1.5.3 Methodology

The study adopted all the convectional guidelines, principles and approaches used and required in conducting of ESIA exercises of such proposed project in; type, impacts and magnitude:

i. Data collection

To meet the objectives of the study, the expert adopted systematic, integrated, participatory and collaborative approaches. Information was gathered through document reviews, field investigations and focus group discussions. Key informants' interviews were conducted with among others administrators, scheme leaders and community leaders. Stakeholders' meetings were held, one FDG discussion, meeting with management, neighbors and community members. Questionnaires were administered to the members present. The ESIA experts also examined all legal and regulatory frameworks, socio-economic profiles in the project area, identified environmental impacts and proposed relevant mitigation measures. The report also provides environmental management framework, monitoring and evaluation mechanisms.

ii. Mobilization and Planning

This involved preparations of checklists, identification of stakeholders, mobilization of resources and logistics as well as public consultations. Community, proponent, and stakeholders' expectations were also considered and mainstreamed at this stage. All the community expectations and concerns as obtained during the public participation were documented and addressed.

iii. Desk Review of Documents

Both Primary and Secondary data, socio-economic and baseline information as well as literature review was done at this stage.

iv. Field Data Collection

This entailed several trips by the ESIA team to the proposed site including transect walks and group/informant meetings and consultations.

v. Project Data Synthesis

The approach included both quantitative and qualitative site description, data analysis and presentation of information in charts, graphs, tables, figures, photographs and other attributes of descriptive (qualitative) statements.

vi. Public Consultation

Several methodologies were employed to collect the required data, including; structured checklists for community consultations to conduct personal interviews and systematized questionnaires to affected households. Stakeholders were consulted in relation to the project. Questionnaires were disseminated to the community members, dully signed and submitted. The collected data was then collated, analyzed and synthesized for the report compilation.

1.6 Structure of the report

- Introduction
- Nature of the project
- The location of the project
- Public participation and stakeholder consultations
- Anticipated impacts and mitigation measures
- Environmental and social management and monitoring plan (ESMMP)
- Conclusion and recommendations
- References
- Annexes

CHAPTER TWO: NATURE OF THE PROJECT

2.1 Introduction

This chapter describes the proposed project activities. The proposed structures have been supported with engineers' designs.

2.2 Project description

The proposed project is in Kirimukuyu Ward, Mathira West Sub County, Nyeri County on plot No Kirimukuyu/Kiria/1112. The project is located approximately 5.5 kilometers from Karatina town along Karatina –Nyeri Highway (A2). The site is bounded by GPS Coordinates: latitude -0.463889 and longitude 37.068056 respectively. The area is historically a coffee growing area with potential to sustain the proposed development.

2.2.1 Project activities

The main works to be undertaken under the proposed project Factory will entail: Upgrading the pulping system by procuring and installing an appropriate eco Pulper machine; Modernizing the receiving, inspecting and sorting bay by repairing the floor; Renovating fermentation tanks and grading channels by tilling; Upgrading drying tables by replacing the wooden with the metallic frame drying beds; Procuring and installation of stand by generator; and Procuring and installing modern securitys

2.2.2 Materials, Products and By Products

Minimal building materials will be required for the modernization of the coffee factory. These will include sand, ballast, cement, metal sheets, electrical gadgets and steel among others. Most of these materials will be obtained locally. The main sources of energy that will be required for construction of the project will include mains electricity (especially diesel). Electricity will be used for welding, metal cutting/grinding and provision of light. Diesel will run the vehicles that will transport the materials. The proponent shall promote efficient use of building materials and energy through all phases of the project. The expected By-products are mainly debris of construction materials during construction and coffee husks from the processing area. The mitigation measures for these are outlined at the ESMMP.

2.2.3 Processes

The following processes are carried out at the factory

Table 1: Processing requirements (facilities and structure renovation)

Purpose	Purpose
Receiving bay	Weighing of cherry
	Weighing of cherry

Sorting bay	to sort undesired cherry
	to sort undesired cherry
Cherry Hopper	Retaining of cherry before pulping
	Retaining of cherry before pulping
Fermentation Tanks	Fermenting of cherry after pulping
	Fermenting of cherry after pulping
Washing Channels	Conveying of parchment to fermentation tanks
	Conveying of parchment to fermentation tanks
Water Tanks	Storage of water to be used during pulping
	Storage of water to be used during pulping
Drying Tables	Used to dry parchments before storing
	Used to dry parchments before storing
Parchment Stores	Used to store the parchments before transportation
	Used to store the parchments before transportation
Water circulation System	Used to recycle water to minimize usage
	Used to recycle water to minimize usage
Waste Management system	Used to make sure waste products after pulping are not exposed to the environment
	Used to make sure waste products after pulping are not exposed to the environment

2.2.4 Green Sourcing and transportation of construction materials

Building materials will be transported to the project site from their extraction, manufacture, or storage sites using transport trucks that are well maintained to avoid pollution. The building materials to be used in construction of the project will be soured locally from Nairobi, Nyeri and Karatina areas. Greater emphasis will be laid on green procurement of

building materials from within the local area, which will make both economic and environmental sense as it will reduce distance of travel by the materials transport vehicles.

2.3 Project Layout

2.3.1 Installation of an Eco pulper

The engineer on site will identify the most appropriate site for the installation. The machine will be bought as a complete set and will assembled on site. Minor modifications and renovations will be done to the existing pulping station/house to accommodate the new machine. Eco pulper that is used to remove the outer flesh of the coffee cherry(pulp)with little volumes of water. This will improve the efficiency of the factory activities and use of water as a resource multiplying to less effluent generated during pulping.

2.3.2 Other important utilities

Water

The neighborhood get water from various sources; for domestic water the area is connected to MAWASCO, roof harvesting has been done (not the whole facility) and a storage tank available. The factory draws their processing water a permanent stream.

Electricity

The facility is connected to KPLC electricity line. A recommendation has been given to the proponent to install solar systems for substitution. The solar energy can be used for the flood lights also.

CHAPTER THREE: THE LOCATION OF THE PROJECT

3.1 Introduction

This chapter gives a description of the siting, proof of land ownership, any environmental sensitive area, availability of supportive environmental management infrastructure and conformity to land use plan and zonation.

3.2 Location description

The proposed project is in Kirimukuyu Ward, Mathira West Sub County, Nyeri County on plot No Kirimukuyu/Kiria/1112. The project is located approximately 5.5 kilometers from Karatina town along Karatina –Nyeri Highway (A2). The site is bounded by GPS Coordinates: latitude **-0.463889** and longitude **37.068056** respectively. The area is historically a coffee growing area with potential to sustain the proposed development. The project area is shown in the figure below;

Figure 1Map showing the proposed site and the neighborhood

3.3 Proof of Land Ownership

The proposed project site is owned by Rutuma Amalgamated Farmers' Cooperative Society formerly known as Tumutumu Farmers' Cooperative Society under title number Kirimukuyu/Kiria/1112 measuring approximately 3.49 Acres. *(See annex 2)*

3.4 Availability of supportive environmental management infrastructure

3.4.1 Transport infrastructure and communication

The factory is located approximately along Karatina –Nyeri Highway (A2) . There are also several other feeder roads which connect the site to the interior of the region and are mainly earth roads, but majority already graded by the County government of Nyeri. Public means of transportation are available and the roads, hence easing product transportation in the area. The main mobile network providers in the sub project area are Safaricom, Telkom Kenya and Airtel Kenya.

3.4.2 Water Resources

The factory sources its water from Hohwe stream which passes through the factory at the lower side and drains its water in Sagana River which is located one kilometer from the factory. In the factory there is also is a water storage dam whose water is used during the dry season. The dam is fed by water from the stream as well as the underground runoff that flows from the valleys from both sides as the factory. The area is also connected to Mathira Water and Sanitation Company (MAWASCO). Water harvesting both roof harvesting and storm water harvesting has also been done.

3.4.3 Biological Environment

The site environment dominantly consists of indigenous tree species and exotic trees planted on factory farmlands. Avocado, coffee, macadamia and gravellia robusta trees have been planted in the neighborhood. Major crops grown include, coffee, maize, bananas, beans and other foods. There are also native grasses in the area with some papyrus reeds in the marshy areas. There also exist plantations of napier grass and other shrubs. The vegetation cover forms an important habitat for birds and other animal life forms. The project site is not in a protected area and does not have plants that have been marked for protected.

3.5 Conformity to land use or zonation plan

The main economic activity in the area is mixed farming where approximately 85.5% of farmers grow, coffee, maize, bananas, beans, and other food crops. In terms of effects of the climate change; the area has occasionally experienced a number of challenges in crop farming in the past. The predominant crop pests, and diseases ranging from; and extreme weather conditions of frosts, landslides, floods and drought at a very low rate. Livestock farmers have faced high costs of veterinary due to incidences of FMD, LSD, Pneumonia and other diseases, as well as other extension and animal feeds respectively. Hence the proposed project is intended to provide value addition in terms of proper collection, sorting, grading and handling of such products.

CHAPTER FOUR PUBLIC PARTICIPATION &STAKEHOLDER CONSULTATIONS

4.1 Introduction

This chapter discussed the objectives of community and stakeholders' consultations, categorization of the stakeholders, methodology of public participation and summary of the issues raised and responses.

4.2 Objectives of Public Consultation

Public consultations and stakeholders' participation is a requirement under the Constitution of Kenya 2010 and EMCA Cap 387 Laws of Kenya. The World Bank Group (WBG) also recognizes that engaging citizens and mobilizing communities in projects development process helps in achieving greater transparency, accountability, and social inclusion, thus improving development results. This is aimed at;

- Disseminate and correctly inform the stakeholders about the project, its key components, location and expected impacts.
- Awareness creation on the need for ESIA.
- Gather comments, concerns and suggestions of the interested and affected parties.
- Ensure that the decision-makers know the concerns of the stakeholders early enough.
- Incorporate the information collected into the ESIA study.

The purpose for such a process was to identify the positive and negative impacts and subsequently promote and mitigate them respectively. It also helped in identifying any other miscellaneous issues that may bring conflicts in case project implementation proceeded as planned.

4.3 Categorization of Community Participants and stakeholders

4.3.1 Directly Affected People

The project is targeting to reach about 404 (270 M, 134F) households as direct beneficiaries (mainly local coffee farmers). The households fall under the larger Mathira West Sub County whose feasibility, EDP study has already been carried out.

4.3.2 Indirectly Affected Persons

They included other members of the public, and agencies that will be reached by any form of benefits from the project. These include traders, transporters and even users of the local ecosystem shared resources. This group of stakeholders also includes all those who reside in

areas neighboring the project area or are reliant on resources in the project area and will have no change or the project may not adjust their livelihood.

4.3.3 Government Agencies and other organizations

Stakeholders' identification and categorization was based on the issues related to the proposed project scope of work, relevance, interest, importance, and influence of the stakeholders and the community during the project implementation throughout its life cycle. Relevance stakeholders were identified purposively based on the understanding of the proposed project and its influence on the project area. The community members involved were invited based on the understanding of the proposed project and its impact on them.

Table 2 Categorization of stakeholders engaged

STAKEHOLDER CONSULTED	RELEVANCE
National Environmental Management Authority (NEMA)	In charge of undevolved environmental issues in the county
Department of Environment	In charge of Mathira West Sub County
Department of Agriculture-Industrial Crops unit	In charge of Coffee
Department of Trade and Cooperative development	In charge of Tetu Sub County and Cooperative auditor
Department of Social Protection and Development	In charge of social matters
Ministry of Interior and Coordination of National Government	Representative of National Government-Area chief and Ass Chief

4.4 Methodology of data collection

The consultant held public consultative meetings with the society board members, management, farmers and key stakeholders in conjunction with the local administration where data was collected. The participants were sensitized on proposed project and were asked to give their opinions concerning any issue relating to impacts of the project to the society. The respondents comprised of neighbors, coffee farmers, community members and other relevant stakeholders.

Coffee initial revitalization meeting was held on the 18th November 2021 at Kianjogu

Factory. The meeting was between the Department of Agriculture -Industrial Crops Unit, Agribusiness unit and Kianjogu Factory management. Issues of project financing and project components were discussed. Eight representatives of the management committee were present.

A subsequent public participation meeting was also held on 10th February 2022 at the factory During the meeting 15 members were present 6F,9M. Through the public consultations, written and oral information was obtained on the benefits, anticipated negative impacts and mitigation measures.

An AGM meeting was also held at the factory on 18th February 2022 involving various the factory beneficiaries and various technical departments including the department of Interior. During the meeting the components of the project were discussed and the beneficiaries endorsed the project and pledged full support. 230 coffee farmers were present during the meeting.

Photo: Members of Kianjogu FCS during a public participation meeting

4.5 Summary of issues raised by the community and stakeholders' responses

The following is a summary of issues raised by the members who attended the meeting:

4.5.1 Perceived Benefits

The proposed project will create significant economic and social benefits to the coffee factory members who will be delivering more coffee cherries and thus contributing to the attainment of the National priority goals and ongoing county efforts to accelerate economic growth and

alleviate poverty. Installation of machines and appliances at the factory will reduce post-harvest losses of coffee in the wet and dry processes hence contributing to enhanced food security and improved production of quality coffee. The installation of the machines will enhance the processing of coffee into parchments.

Income diversification strategy

Investment in the development is a strategy in reducing risks associated with livelihood variability and related challenges. Employment opportunities will be offered to the construction workers and any other person who will be hired to provide her/his services during the construction phase. In addition to direct employment, supplies of basic necessities to the workers will also lead to more employment opportunities and acquisition of entrepreneurial skills. This will inculcate a sense of project ownership within the community. The project will improve the coffee industry in Mathira West Sub- County and in the county. The project will also play a role in reduction of idleness particularly amongst the youth due to an increase in income generating activities either directly or indirectly. The project will also ease the direct resource dependency pressures on forest and forest resources due to the diversification in sources of livelihood and provision of services. Reduced poverty levels through increased incomes and improved livelihoods resulting from construction of the proposed project and maintenance employment and consumption from the local markets, emergence of other associated economic opportunities and activities. The project will contribute to the larger development of Kirimukuyu area and thus encouraging new investors and developers.

4.5.2 Issues and Concerns

Increased production of waste due to the increased production. Possibility of insecurity, conflicts and traffic issues as a result of transportation and entry of various people to provide services and derive benefits out of the proposed project. These are low and mitigatable by the various measures to be addressed in the management plans. Increase in costs of utility bills in terms of energy and water. These will be mitigated by capacity building users on utility-efficient use measures such as saving mechanism, and diversification to renewable energy sources such as solar panels; or putting up of a biogas system to utilize the mentioned biodegradable agricultural wastes.

4.5.3 Summary of issues and Concerns raised

Almost all the respondents (95%) had a strong conviction on the key benefits they would accrue from the proposed project. This is mainly associated with creation of employment,

value addition of agricultural produce, income and other socio-economic benefits. The perception of such benefits is an indication that there is a serious need for such a project and feasibility of demand. Equally, most respondents (at least 97.5%) were willing to pay for the services associated with the proposed project. Already the cooperative members have identified a piece of land for construction of the project among many other contributions both in monetary and in kind, in order to ensure that the project materializes. Similarly fundamental is the contributions also made by the other key stakeholders namely KCSAP, Department of Agriculture and the County Government of Nyeri. Therefore, the ability to handle all these issues makes it a key indicator of potential project success.

4.5.4 VMGs as beneficiaries

The community members informed the ESIA team that women and children will be the greatest beneficiaries of the proposed project as they are the ones exposed to the danger of poverty when no socio-economic aspects are running well in the community.

CHAPTER FIVE: ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND THEIR MITIGATION MEASURES

5.1 Introduction

This chapter discusses the potential positive and negative environmental and social impacts and mitigation measures for the potential negative impacts for the three project phases i.e., construction, operational and decommissioning Phases.

5.2 Anticipated Positive Environmental and Social Impacts

a) Creation of Employment Opportunities to the Community

The proposed project activities are expected provide short term employment opportunities to the host community. The proposed aggregation and marketing facility will create employment opportunities for both skilled and unskilled workers. This will be beneficial both from the economic and social point of view. Economically, people employed will earn income which will improve their livelihoods and those of their families. Socially, the workers who will be engaged in productive employment which will translate into reduced social ills at the same time fostering healthy interaction thus social integration.

b) New Business Opportunities for the Host Community

In the construction phase the local community will benefit from supply of essential items to the workers on site such as foodstuffs and construction material. This will contribute to increased household income. Market will be created for local transporters who will get the opportunity to ferry construction materials to the site and for the vehicle fuel filling stations that will get the business opportunity to sell fuel to vehicles and for machinery attached to the construction.

c) Source of Revenue for Government

The supply of construction materials to the project and fuel will contribute revenue to the county and national government in form of VAT, Cess, fuel levies among others.

d) Market for Construction Materials

The construction works will provide ready market for locally available construction materials such as cement, sand, timber, and steel, building stones and other necessary materials. This will result in a boost in the local economy.

e) Improved socialization in the community

The proposed project will bring together people from different parts of the county and the country and thus bringing socialization in the community.

f) Improved Well-being of Women and Children:

In most cases, at the household level, women and children bear the burden of farming when the practice is not a business. The proposed project will encourage mechanization of the farming practices and time saved thus would be invested in agricultural production and other engagements that could bring financial benefits to the family and increased time for studies for the children.

5.3 Anticipated Negative Impacts and Mitigation Measures in Preparatory Phase

a) Conflicts over project designs, project siting and project membership

The community members may disagree on the components of the designs of the project. The project site is part of the community contribution. This can bring conflicts in financial contribution towards the project implementation. Some might want to join the cooperative because of the proposed project against the bylaws.

Mitigation measures

a) Provision of well defined by laws that elaborate on the issues of memberships for the new and existing members. This will ease and accommodate new members.

5.4 Anticipated Negative Impacts and Mitigation Measures in construction Phase

Environmental impacts

a) Soil Erosion and Soil Quality Degradation

Installation activities and transportation associated with heavy machines have the potential to loosen soils as a result of removal of vegetation and soil disturbance during transportation.

Mitigation Measures:

- Controlled movement of machinery at the site.
- Landscaping of the area that has bare soil.

b) Dust Generation

Dust will be emitted during movement of vehicles and related earthworks. Particulate matter pollution is likely to occur during excavation and related earthworks. This is likely to affect site workers and the project neighbors. Long hours of exposure might lead to respiratory and eye related complications.

Mitigation Measures

- Construction workers will be provided with proper PPEs including dust masks to mitigate against occupational health risks of inhaling dust
- Routine sprinkling of water on bare surfaces and dusty grounds;

- Contractor to enforce strict use of personal protective clothing.

c) Water pollution

The interactions between machinery use and water during construction/installation activities at the factory that may lead to pollution of the water. The large volumes of wastewater generated if not treated may lead to water pollution.

Mitigation measures

- Controlled water usage, water should be used only when necessary.
- The factory treatment lagoons should meet the NEMA recommendations and should be well managed to avoid pollution.
- Avoid oil spillages at the factory.

d) Noise and Excessive Vibrations

The proposed project is likely result in noise emission because of machines such as electrical works, minor construction on site. Noise could affect negatively on the workers involved in the construction works. Noise can also be a nuisance to the local community near the site

Mitigation Measures

- Contractor to ensure the use of well-maintained machinery/equipment and vehicles
- All construction work to be limited to daytime only;
- Immediate neighbors to be notified in advance on the date of commencement of construction work and possible date of completion of works at the site.
- All employees likely to be exposed to ear noise to be provided with ear protectors;
- Avoid idling of Machines and vehicles engines and turn off when not in use.
- Where possible fit all noisy machines and equipment with noise arresters.

e) Generation of Solid Waste

Waste during the construction period will arise from operations at the site. There will be a likelihood of accumulation of general solid waste at the site area.

Mitigation Measures

- The proponent should ensure recycling, reuse, reduction or disposed of waste in the designated and at the approved dumpsite.
- Provision of solid waste receptacles (waste bins)
- Sensitization of construction workers on proper disposal of solid wastes

f) Occupational Health and Safety Issues

It is expected that employees are likely to be exposed to occupational health risks due to accidents at the construction site. Injuries can arise from use of tools and equipment general site preparation. The injuries can include cuts, bruises, falling from height and colliding**.** This exposure to risks of accidents and injuries is likely to extend to the pedestrians along the access road as a result of moving machinery to the site

Mitigation Measures

- Provision of suitable protective gear – PPE. The contractor should provide face overalls, helmets, safety boots, earmuffs, nose masks and gloves to the workers.
- Put in place appropriate safety signage along the construction route cautioning against various health and safety risks and prescribing particular mandatory actions
- The contractor should ensure there are no oil spills, no smoking, and no sources of ignition and proper use of warning signs in an explosive environment.
- Discourage unauthorized people from the project site- secure the site by fencing

Social impacts

a) Gender based violence and sexual harassment (GBV/SH)

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

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

The proposed Mitigation Measures of Human Rights and Gender Requirements are:

- Ensure clear human resources policy against sexual harassment that is aligned with national law.
- Integrate provisions related to sexual harassment in the employee Code of Conduct.
- Ensure appointed human resources personnel to manage reports of sexual harassment according to policy.
- The contractor(s) shall require employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse.

b) Sexual Exploitation and Abuse by project workers against community members

This impact refers to sexual exploitation and abuse (SEA) committed by project staff against communities and represents a risk at all stages of the project, especially when employees and community members are not clear about prohibitions against SEA in the project.

Mitigation measures

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

c) Risks of increased spread of COVID-19 at work sites

During project execution (civil works), large numbers of workers will be required to assemble together in meetings, toolbox talks and even at work sites; varied number of workforce including suppliers of material and services are also expected to come in from various places in the country and interaction of workers with the project host community will happen as workers find accommodation close to work sites, and/or return to their homes after works. The potential for the spread of any infectious disease like COVID-19 by projects is high. There is also the risk that the project may experience large numbers of its workforce becoming ill and will need to consider how they will receive treatment, and whether this will impact on local healthcare services including the project host community.

Mitigation Measures

- The contractor(s) will develop SOPs for managing the spread of COVID-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilization. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions.

d) Child abuse

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

Mitigation measures

- Comply with all relevant local legislation, including labour laws in relation to child labor specifically provisions of Kenya's Employment Act, 2007 (Cap. 226) Part VII on protection of children against exploitation.

- The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.
- All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behavior.
- Children under the age of 18 years will not be hired on site as provided by Child Rights Act (Amendment Bill) 2014.

e) Grievances/conflicts

Common grievances expected to arise during the proposed project implementation include: Worker's interaction with the project and even the neighbors. Negative project impacts which may include disruption of income streams, physical harm, and nuisance from construction activities; Health and safety risks; Socially-unacceptable project staff relations with the communities and other stakeholders;

Mitigation measures

The following are possible mitigation measures to manage grievances:

- Establish a grievance redress mechanism (GRM) for the proposed project;
- Put in place a pre-emptive community liaison structure aimed at identifying potential issues arising from project-related impacts and addressing them before they become grievances;
- Establish a grievance redress mechanism targeting communities and other project stakeholders but not applicable to commercial and employee-employee relationships, and which will allow stakeholders to easily put forth their concerns relating to the project, implementation and have them addressed in a prompt and respectful manner;
- Address all raised grievances, real or imagined and take reasonable steps to maintain confidentiality of the parties to the mechanism and regardless of the complainants' participation in this process, give a guarantee that the complainant's statutory rights to undertake legal proceedings remain unaffected; and
- Educate all project stakeholders on the availability and use of the grievance redress mechanism in a manner that is understandable to all, before, during and after construction of the proposed project.

5.5 Anticipated Negative Impacts and Mitigation Measures during Operational Phase

a) Insecurity

This will be as a result of so many different people entries and moving in and out of the site

for delivery of various coffee. Insecurity can also be associated with the reason that more machines have been installed at the factory. Measures proposed to mitigate here include: establishment of a strict security management systems and program, employment of day and night security personnel, installation of CCTV cameras and also fencing of the site with a permanent perimeter fence.

b) Conflicts

Social conflict as a result of competition for community goods and services, economic gains as wells as resource use conflicts are always associated with almost every project. These will be mitigated by established problem and conflict resolution mechanisms spearheaded by the proponent, community, key stakeholders and the local administration.

c) Solid wastes

Operationalization of the project is expected also to increase the volume and other output of the benefits and also related adverse impacts such as generation of garbage from the operations of the project. These include packaging, food leftovers and farm produce that may go bad in process of bad transportation. Proper measures on waste management shall be implemented among them:

- Use of the coffee husks waste as an input in the production of green manure for the farmers.
- Composting to utilize coffee solid wastes as bio fertilizer

d) Effluent/Liquid Waste management

The process of coffee pulping will result in release large quantities of wastewater which will require proper management through the following mitigation measures:

- Adopt Eco-pulping machine which are more environmentally friendly as opposed to old technology that uses a lot of water for pulping.
- Continuously monitor the lagoons for any discharge to the environment
- Conduct sampling and analysis of effluent
- Apply for Effluent Discharge License (EDL) on annual basis
- Separating the coffee husks from the effluent channels
- Promptly detect and repair of any leakages i.e lagoons
- Ensure proper siting of the lagoons away from the nearby river/streams

5.6 Anticipated Impacts during the Decommissioning Phase

a) Solid Waste generation:

During the decommissioning phase various activities will be carried that are likely to generate solid waste at the sight thus a likelihood of accumulation of general solid waste at the site area.

Mitigation Measures

- The proponent should ensure recycling, reuse, reduction or disposed of waste in the designated and at the approved dumpsite.
- Provision of temporary solid waste receptacles (waste bins)
- Sensitization of construction workers on proper disposal of solid wastes
- The Proponent to liaise with the County Government of Nyeri and NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes.

b) Noise and vibrations:

Noise emission and vibrations is generated by machines like excavators used on site during demolition. Noise could impact negatively on the workers involved in the construction work. Noise can also be a nuisance to the local community near the site if works begins early in the morning to late in the night.

Mitigation Measures

- Maintain the levels of noise pollution from the machinery in accordance to the manufacturer's specifications
- All construction work to be limited to daytime only;
- Immediate neighbors to be notified in advance on the date of commencement of construction work.
- All employees likely to be exposed to ear noise to be provided with ear protectors;
- Contractor to ensure strict enforcement on use of ear protectors

c) Occupational Health and safety Risks

It is expected that employees are likely to encounter occupational health risks due to accidents during demolition at the project site. Because of demolition activities, workers are exposed to risks of accidents and injuries. Injuries can arise from use of tools and equipment general site preparation. The injuries can include cuts and bruises. Injuries from construction work can include falling from height and colliding.

Mitigation Measures

- Adhere to Site Occupational Health and Safety rules and regulations as stipulated in the Occupational Safety Act of Kenya of 2007 and revised in 2010.
- Erect an appropriate project signboard as directed by the proponent

- Erect the appropriate safety signage along the construction route cautioning against various health and safety risks and prescribing particular mandatory actions
- Provide adequate first-aid facilities in the project sites to handle medical emergencies during construction and PPEs
- Comply with the National and International Labor laws
- Install adequate warning signages in all potentially risky i.e slipery floors, lagoon area etc.
- Fence the lagoon and mark it appropriately

CHAPTER SIX: ENVIRONMENTAL AND SOCIAL MANAGEMENT & MONITORING PLAN (ESM&MP)

6.1 Introduction

The Environmental and Social Management Plan (ESMMP) developed for the proposed upgrading of Gathaithi Coffee Factory shall be implemented and operationalized by Project stakeholders to ensure objective management of environmental and social issues throughout the project cycle.

6.2 Environmental and Social Management & Monitoring Plan (ESM&MP)

(a) Construction phase Social Management & Monitoring Plan						
Environmental Impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (Ksh)**
Risk of Soil Erosion	• Apply soil erosion control measures such as leveling the project site to reduce run- off; • Ensure proper landscaping of the affected areas within the compound, and • Ensure compacted areas are ripped off to reduce run-off • Controlled movement of vehicles	• Visible soil erosion control measures in place • Areas already landscaped	• Contractor/Supervising engineer/work foreman	• Photos of original site and current site status	monthly	50,000

Risk of oil spillage	• Employ safety procedures to prevent oil spillage • Ensure that oil/grease spills are immediately removed along with all contaminated material and disposed of at an approved waste disposal site;	• No oil spills cases reported	• Contractor/Supervising engineer/work foreman	• Records • Tracking documents	monthly	20,000
Generation of Solid and Liquid waste	• Coffee husks should be used by farmers as green manure; • Provide solid waste facilities (waste bins) • Liaise relevant agencies for the management of pesticides containers	• Quantity of wastes generated, reused or recyclable • No of litter bins • Waste disposal site • No of farmers using the husks	• Contractor/Supervising engineer/work foreman • Coffee factory management	• Tracking documents • Receipts • Photos	Weekly	20,000
Air quality degradation/dust emissions	• Secure the site where this can happen with appropriate dust screens • Regular	• No of well-maintained machinery Water sprays and mists • No. of designated hauling/stockpiles areas	• Contractor/Supervising engineer/work foreman • NEMA	• LPOs • Reports • Signed contracts between	Weekly	30,000

	sprinkling of water to be done on open surface and dust grounds unless paving is done; • Landscaping of the bare spaces • Provision of appropriate PPEs	• No of suitable PPE		Contractor & employees		
Noise Pollution and vibrations	• Maintain the levels of noise pollution from the machinery in accordance to the manufacturer's specifications • All construction work to be limited to daytime only; • Immediate neighbors to be notified in advance on the date of commencement of construction work. • Provision of appropriate	• Number of PPEs purchased. • Number of workers using PPEs. • Available servicing cards/receipts	• Contractor/Supervising engineer/work foreman	• Local purchase orders • Reports • Receipts • Work plan	Daily and weekly	30,000

	PPEs					
Occupational Health and Safety (OHS)	• Proper barricading of the construction site • The contractor to provide all workers with full protective gear (PPEs) • The contractor to train and provide First-aid Kit to the workers and provide Incident and Accident Registers on site for recording of injuries or any OHS incidence • Compliance with MOH COVID 19 regulations. • Displaying of OSH guidelines on site	• No of Labels and warning signs • No of workers using PPEs on use by those involved at the site • Trained officers on First-aid Kit • Incidents reported • Number of COVID-19 sensitizations conducted. • Emergency contacts at the site	• Contractor/Supervising engineer/work foreman • Directorate of Occupational Health and Safety (DOSH)	• Purchase receipts • Reports • Attendance register • Contingency plan for accident response in place	Weekly	40,000
Increased demand for water	• Water saving devices such as push taps to be installed to	• water bills paid to WRA • No. of gutters	• Contractor/Supervising engineer/work foreman	• Records • Purchase receipts	Monthly	10,000

	minimize lose. • Installation of roof rainwater harvesting systems at the premise. • Construction workers to be sensitized on appropriate water use and conservation technologies applicable.	installed for water harvesting • No, of onsite tanks • Rate of metered water consumption		• WRA permits		
(b) Construction phase Social Management & Monitoring Plan						
Social impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (KShs.)**
Social conflict	• Involve local administration and other social groups like the church in social mediation and moderation • Notify all the affected persons of any incident • Establish an effective and efficient grievance redress	• No. of cases/incidents/conflicts addressed	• Contractor/Supervising engineer/work foreman • Local administration	• Incident Register	1 month	10,000

	mechanism where all conflicts related to the project are addressed.					

(a) Operational phase Environmental Management & Monitoring Plan						
Environmental impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (KShs.)**
Increased demand for Energy	• Use of energy saving bulbs (LED lighting). • Optimize use of natural light during the day. • Install solar panels to limit energy use • Undertake regular energy audits.	• No. of Energy saving bulbs in place • No. of solar panels in place • Energy audits conducted	• Coffee Factory Management • CPCU • Energy experts	• Receipts • Bills • Reports • Photos	3 months	40,000
Generation of Solid waste	• Provide solid waste facilities (waste bins) • use coffee husks as green manure	• Quantity of waste collected • No. of waste receptacles • No. farmers using green manure	• Coffee factory management	• Tracking records • Photos • Copies of license	3 months	10,000

Water pollution	• Monitor the lagoons for any discharge to the environment and sample the effluent on quarterly basis • Apply for Effluent Discharge Licence (EDL) on annual basis • Coffee husks can be used for mass production of branded briquettes in situ to avoid accumulation near effluent cha nnels. • Promptly detect and repair of any leakages i.e lagoons.	• No of times maintenance done • Number of lagoons • Distance from the nearby stream	• Coffee factory management	• Tracking records • Licenses • Photos	**annually**	70,000

Occupational Health and Safety risks	• Adhere to Site Occupational Health and Safety rules and regulations • Sensitize all workers on occupational health and safety • Provide adequate first-aid facilities in the project sites to handle medical emergencies • Label all the potentially risky areas • Fence lagoons and label them and restrict access.	• No of Labels and warning signs • No of workers using PPEs on use by those involved at the site • Trained workers on basic first-aid • Incident report Number of COVID-19 sensitizations conducted and Records of participants etc. • Emergency contacts at the site	• Coffee Factory Management • Directorate of Occupational Health and Safety (DOSH)	• Purchase receipts • Reports • Attendance Register • Signages	3 months	10,000

Noise pollution	• Provide PPEs to workers • Service the pulping machine • Shut off engines when not in use. • Enforce Restriction of pulping activities to daytime • -Ensure Noisy machines to be fitted with silencers	• No. of PPEs provided • No of times machines serviced	• Coffee Factory Management	• Registers • LPOs	6 months	50,000
(b) Operational phase Social Management & Monitoring Plan						
Social impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (Ksh.)**

Social Conflict	• Involve local administration and other social groups like the church in social mediation and moderation • Notify all the affected persons • Establish a grievance redress mechanism where all conflicts related to the project are addressed	• No. of cases/incidents/conflicts addressed	• Coffee Factory Management , • CPCU	• Incident Register • GRMs policy	3 months	10,000

Theft, vandalism and destruction of infrastructure	• Ensure the general safety and security of the facility at all times by providing day and night security guards • Ensure only authorized personnel get access to the site facility. • Develop mechanism to address	• Presence of a day and night security guard • No. of complaints	• Coffee Factory Management • CPCU	• Incident Register	monthly	20,000
Sexual Exploitation and Abuse	• Develop and implement a SEA action plan • Ensure necessary steps are in place for: Prevention of SEA: • Management and Coordination: including integration of SEA in job descriptions, employments contracts,	• SEA Action Plan • Code of Conduct • Number of staff trainings • SEA FP • Community Liaison trained on PSEA	• Coffee Factory Management • CPCU • GBV Expert	• SEA action plan • Attendance registers	3 months	10,000

	performance appraisal systems, etc.					

Environmental and Social Management & Monitoring Plan (ESMP) for the Decommissioning Phase

(a) Decommissioning phase Environmental Management & Monitoring plan						
Environmental impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (KShs.)**
Air quality/dust emissions	• Dust suppression through water sprinkling. • Proper servicing of equipment to reduce exhaust fumes. • Proper communication engagement	• No. of equipment Serviced • No. of forums held • No. of complaints raised	• Contractor • Coffee Factory Management • CPCU	• Records of servicing, • Registers • Photos	1 month	10,000
Generation of Solid and Liquid waste	• Debris from demolition and all other solid waste to be handled, managed and disposed according to the EMC (Waste Management) Regulations 2005. • Solid waste to be disposed only at licensed disposal sites;	• Quantity of debris collected • No. of licensed waste handlers	• Contractor • Coffee Factory Management • CPCU	• Tracking records • Photos • Copies of license	1 month	10,000

Occupational health and Safety risks	• Sensitize the decommissioning team on occupational health and safety • Discourage unauthorized idlers at the site • Provide adequate PPE's to workers • Adhere to Site Occupational Health and Safety rules and regulations as stipulated in the Occupational Safety Act of Kenya of 2007 and revised in 2010.	• No. of sensitization meetings done • No of workers using PPEs on use by those involved at the demolition site • Number of COVID-19 sensitizations conducted and Records of participants etc.	• Contractor • Coffee Factory Management • CPCU • Directorate of Occupational Health and Safety (DOSH)	• Purchase receipts • Reports • Attendance Register	3 months	10,000
Noise Pollution and vibrations	• Maintain the levels of noise pollution from the machinery in accordance to the manufacturer's specifications • All work to be limited to daytime only; • Immediate neighbors to be notified in advance on the date of commencement of demolition work.	• Number of PPEs purchased. • Number of workers using PPEs. • Available servicing cards/receipts	• Contractor/Supervising engineer/work foreman	• Local purchase orders • Noise survey Reports • Receipts • Work plan	3 months	10,000

Water Pollution	• Waste to be disposed off through a NEMA registered waste disposal company and in a designated site only. • Exhaust the septic tank fully through a licensed exhauster •	• Quantity of waste debris collected and disposed accordingly • Licensed exhauster • No of times site is remediated from spills	• Coffee Factory Management • CPCU • NEMA	• Receipts, • Reports, • Copies of licenses, • MoU, • Photos	3 months	10,000
(a) Decommissioning phase Social Management & Monitoring Plan						
Social impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of Verification**	**Time Frame**	**Est. Cost (Kshs)**
Theft, vandalism and destruction of infrastructure	• Provide day and night security guards • Ensure only authorized personnel get access to the decommissioning site	• Presence of a day and night security guard • No. of complaints	Contractor Coffee Factory Management , CPCU	Incident Register Records of employment	monthly	20,000

Increased risk of illicit behavior and crime	• Sensitize community and workers on expected code of conduct • The proponent to ensure that the contractor prioritize the employment of locals and only use the immigrant workers where the skills or capacity lacks. • The Contractor to ensure that comprehensive data on all workers involved in the project during construction is kept (register of all workers kept on site).	• No. Sensitized workers on national code of conduct • Register of all worker on site • Review report on workers behavior	Contractor/Works foreman	Minutes Reports Attendance registers	6 months	10,000
Loss of employment	• Prior notification of the facility management, employees, local community members and relevant local leaders • Where possible provide an alternative source of livelihood	• Notifications issued • No. of forums held	• Contractor • Coffee Factory Management • CPCU	• Memos • Letters	3 months	30,000

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1 Conclusions

The Environmental and Social Impact Assessment has established that several positive impacts such as installation Eco Pulper machine in addition to refurbishments will far much outweigh the anticipated negative impacts which can however be adequately mitigated. The Study has established the baseline information of the project area against which any changes will be monitored. The proponent will be committed to maximizing on the positive impacts which will have far reaching effects while mitigating the adverse impacts as per the ESMP in chapter six. This study therefore concludes that the proposed upgrading of the coffee factory will result to insignificant negative impacts that can compromise the ecological, socio-cultural, economic and environmental integrity of the host environment as well as health and safety of the residents. There was no objection on the proposed project from the community and the stakeholders

7.2 Recommendations

- Management shall demonstrate commitment and exercise constant vigilance in order to provide employees, neighbours of the project and the environment, with the greatest safeguards relating to EHS
- The management to install fire extinguishers at strategic points and should diversify the types
- The management must analyze, treat and properly dispose all the waste waters
- The management to formulate an environmental health and safety policy
- Ensuring that EHS activities are implemented to protect the environment and prevent pollution
- Employees will be expected to take personal responsibility for their safety, safety of colleagues and of the general public as it relates to the EHS management plan
- It is recommended that the proposed project proponent be allowed to go ahead provided the outlined mitigation measures are implemented as outlined in the ESM&MP. The ESMMP will be shared with the Contractor who will implement the Contractor-Specific Environmental and Social Management and monitoring Plan (C-ESMMP).
- On approval, it is recommended that the proponent should implement the proposed project based on the proposed plans and if alterations are necessary, advice should be sought from the CESSCO and subsequently environmental expert.

ANNEXES

Annex 1: CDE Screening Checklist

ANNEXES

Annex 1: Environmental and Social Screening Checklist

ESM Sub-projects Screening Checklist (Prototype)

(Sub-projects screening process by benefitting communities/Agencies)

Section A: Background information

Name of County…NYERI…	
Name of CSU/Monitoring Officer/Researcher ……	
Sub-project location…MATHIRA…WEST…SUB COUNTY Name of CBO/Institution…DUTUMA AMALGAMATED F.C.S Postal Address:…P.O BOX…1935…KARATINA… Contact Person…BEATRICE MWIRIGI KARIUKI phone:…0700.513798…… Sub-project name…KIAMIOGU COFFEE FACTORY…	
Estimated cost (KShs.)…6,025,714……	
Approximate size of land area available for the sub-project…3.49 ACRES Objectives of the subproject…To evaluate factory compliance with the relevant legislation; statory requirements and regulations governing the coffee industry. To access extent to which the existing E.M.P is being used as an environmental management tool…… To reduce the cost of processing coffee thus increasing the coffee prices to the coffee farmers (Adoption of TIMPs)	
Activities/enterprises undertaken…Eco Pulper……	
How was the sub-project chosen?…During Coffee Revitalization Project Modernization. Expected subproject duration:…From…2021-2023……	

Section B: Environmental Issues

Will the sub-project:	Yes	No
Create a risk of increased soil erosion?	☐	☑
Create a risk of increased deforestation?	☐	☑
Create a risk of increasing any other soil degradation	☐	☑
Affect soil salinity and alkalinity?	☐	☑
Divert the water resource from its natural course/location?	☐	☑
Cause pollution of aquatic ecosystems by sedimentation and agro-chemicals, oil spillage, effluents, etc.?	☐	☑
Introduce exotic plants or animals?	☐	☑
Involve drainage of wetlands or other permanently flooded	☐	☑

57

(iii) Recommended Course of Action

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

☐ CSU[1]s and CDE will provide detailed guidance on mitigation measures as outlined in the ESMF; and

☐ Specific advice is required from CDE[2], Lead Officer t and CSUs regarding sub-project specific EIA(s) and also in the following area(s)

[type here]

☐ All sub-project applications/proposals MUST include a completed ESMF checklist. The KCSA-CSU and CDE will review the sub-project applications/proposals and the CDEs will sign off;

☐ The proposals will then be submitted to KCSAP PIU for clearance for implementation by communities in the proposed subprojects.

Expert Advice

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

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

Completed by: [type here]

Name: [type here] EPHANTUS NJIRAINU

Position / Community: [type here] CESSCO - KCSAP

Date: [type here] 19/07/2022

Field Appraisal Officer (CDE): [type here]

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY
COUNTY DIRECTOR OF ENVIRONMENT
NYERI
P.O. Box 83, NYERI
TEL: 061 - 2032344

[1] Project County Coordinating Unit
[2] County Director of Environment and the County Technical Team

Annex II: Land Ownership (Title Deed and official search)

Almost Complete -
Kiarijaya

14

REPUBLIC OF KENYA

THE REGISTERED LAND ACT
(Chapter 300)

Title Deed

Title Number KIRIMUKUYU/KIRIA/1112

Approximate Area 3.49 Ha.

Registry Map Sheet No. 2 & 4

This is to certify that TUMUTUMU FARMERS CO-OPERATIVE SOCIETY

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 30 of the Registered Land Act as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the Nyeri District Land Registry this 23rd day of April, 1998

Land Registrar

Form LRA-85 (r.84(3))

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

THE LAND REGISTRATION (GENERAL) REGULATIONS, 2017

CERTIFICATE OF OFFICIAL SEARCH

TITLE NO. KIRIMUKUYU/KIRIA/1112

SEARCH NO. 1527/7/2022

On the 27TH day of JULY 20 22 the following were the subsisting entries on the register of the above-mentioned title:

Part A — Property Section (easements, etc.)

Nature of title ABSOLUTE

Approximate area 3.49 HA (THREE DECIMAL FOUR NINE HECTARES)

Part B — Proprietorship Section

Name and address of proprietor (6) 19.7.2022 RUTUMA AMALGAMATED FARMERS CO-OPERATIVE LIMITED (C.O.N)

Inhibitions, cautions and restrictions (7) 20.7.2022 TITLE DEED ISSUED

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

The following applications are pending:

a) .....

b) .....

c) .....

d) .....

The following certified copies are attached as requested:

a) .....

b) .....

c) .....

d) .....

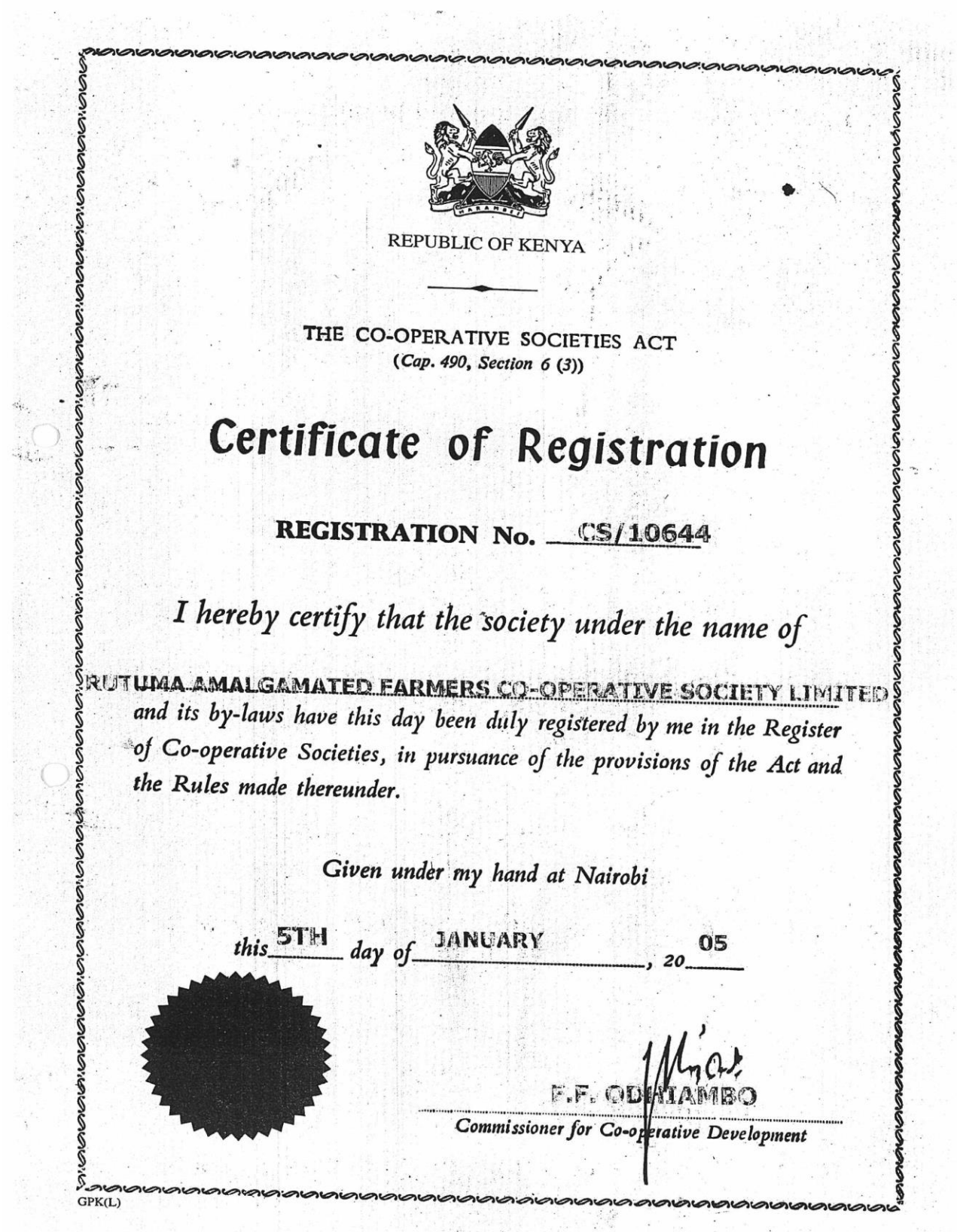
Date 27TH day JULY 20 22

Signed by the Registrar N.G. Gathaiya *285 Seal .....

Name: .....

Signature: .....

Annex III: Group Registration Certificate



REPUBLIC OF KENYA

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

Certificate of Registration

REGISTRATION No. CS/10644

I hereby certify that the society under the name of

RUTUMA AMALGAMATED FARMERS CO-OPERATIVE SOCIETY LIMITED

and its by-laws have this day been duly registered by me in the Register of Co-operative Societies, in pursuance of the provisions of the Act and the Rules made thereunder.

Given under my hand at Nairobi

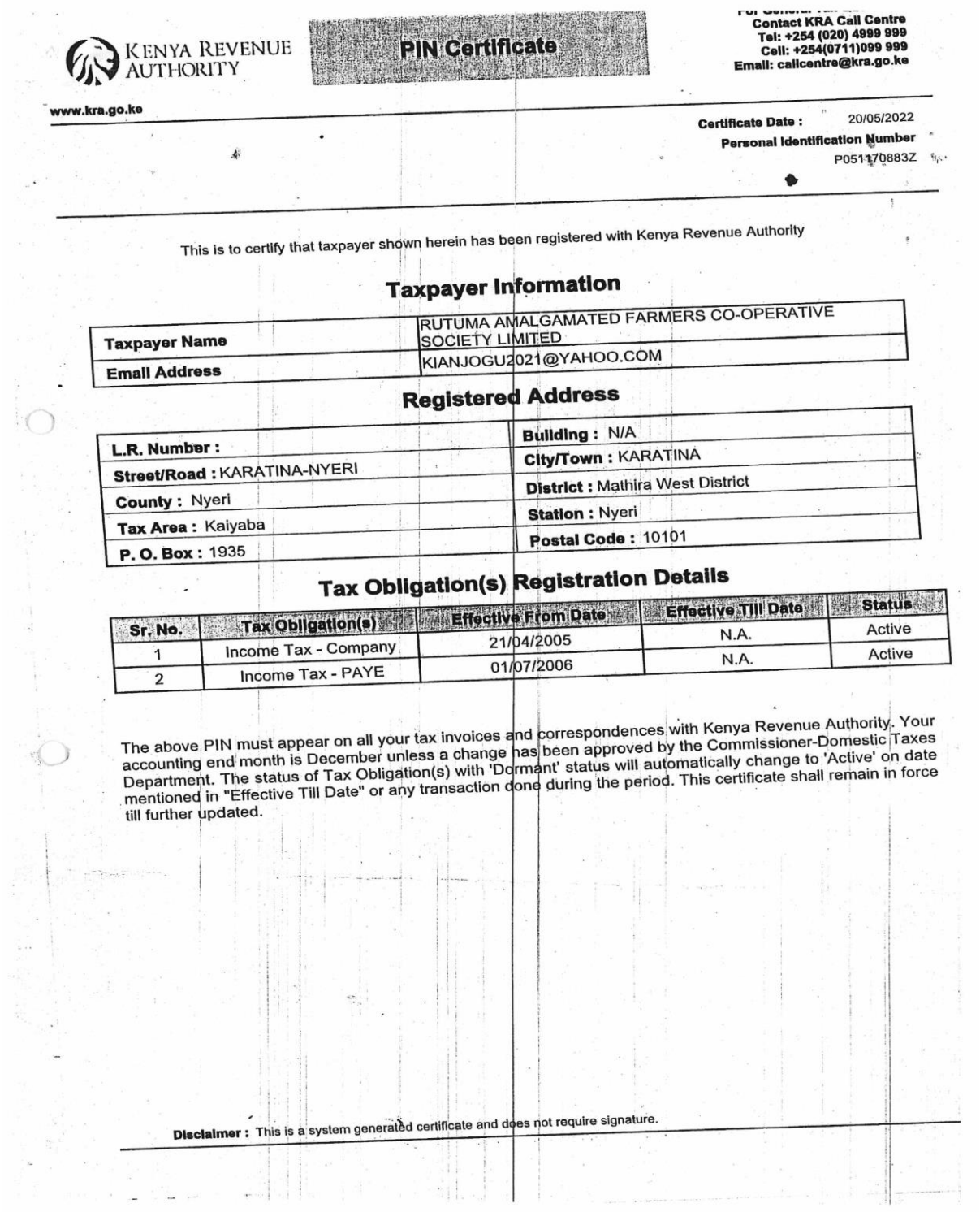
this 5TH *day of* JANUARY, *20* 05

F.F. ODHIAMBO

Commissioner for Co-operative Development

GPK(L)

Annex V: KRA Pin



KENYA REVENUE AUTHORITY

PIN Certificate

Contact KRA Call Centre
Tel: +254 (020) 4999 999
Cell: +254(0711)099 999
Email: callcentre@kra.go.ke

www.kra.go.ke

Certificate Date : 20/05/2022

Personal Identification Number
P051170883Z

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

Taxpayer Information

Taxpayer Name	RUTUMA AMALGAMATED FARMERS CO-OPERATIVE SOCIETY LIMITED
Email Address	KIANJOGU2021@YAHOO.COM

Registered Address

L.R. Number :	**Building :** N/A
Street/Road : KARATINA-NYERI	**City/Town :** KARATINA
County : Nyeri	**District :** Mathira West District
Tax Area : Kaiyaba	**Station :** Nyeri
P. O. Box : 1935	**Postal Code :** 10101

Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till Date	Status
1	Income Tax - Company	21/04/2005	N.A.	Active
2	Income Tax - PAYE	01/07/2006	N.A.	Active

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

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

Annex VI: Attendance List

ACTIVITY Public Participation Forum SOCIETY RUTUMA FACTORY KIANJOGU DATE 10/02/2022.

S.NO	NAME	MEMBER NO.	1D.NO	PHONE NO.	SIGN
1.	MARGARET WANJA	5883	3186286	0717 038 078	
2.	JOHNSTON KAGAYU	2845	0347335	0723 058 453	
3.	Peterson Mwiongo.	2725	3184695	0722248690	
4.	MARGARET NGIMA KITHERA	2653	5518590	0117283366	
5.	JACKSON MWIRITH	2400	0583619	0723 038 133	
6.	Hellen Wanjiku	6315	12777861	0721467285	
7.	JAMES KINYUA	2871	5483480	0[illegible]2909396	
8.	Esther Waingari	4200	3186379	0711512339	Esther
9.	Ngima Hanun	2154		0700416287	Kgima
10.	Benson Muchiri	2927	3186281	0723446434	
11.	Samuel Mwaniki	2576	3189238	0769028666	
12.	Rose Nyathogwa	2344			
13.	Paul Karimi	5998	12477126	0728 652 58	
14.	George Wanjohi	2778			
15.	Duncan Mucheru	2330	0711847038	0731866 2	

Annex VII: Public Participation Questionnaire

ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT (SPR) REPORT FOR – KIANJOGU COFFEE FACTORY

PUBLIC PARTICIPATION QUESTIONAIRE

Name of the respondent... Barton Gitonga .....

Contact/Phone No... 0729552749 ..... I/D No... 10378855 .....

Physical Address... Kianjogu .....

Negative Impacts

Are there negative/harmful Impacts to the proposed project(s)?

YES Or NO ✓ (Please mark accordingly using a tick or cross)

If yes, kindly list the impacts;

..... N/A .....

How can they be minimized or mitigated against

..... N/A .....

RESPONDENT RECOMMENDATION:

In your opinion, do you think the project should be allowed continue?

YES ✓ OR NO (Please mark accordingly using a tick or cross)

Kindly give reasons for your choice:

..... It will reduce cut and increase farmers pay .....

SIGN: .....

Thank you for your Comments/Participation

ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT (SPR) REPORT FOR – KIANJOGU COFFEE FACTORY

PUBLIC PARTICIPATION QUESTIONAIRE

Name of the respondent..MAURICE.....WANJIKU.....KAMAU.....

Contact/Phone No.....0705.508.750..... I/D No....31.8.8005.....

Physical Address.....Kiangoi.....

Negative Impacts

Are there negative/harmful Impacts to the proposed project(s)?

YES ☐ NO ☑ (Please mark accordingly using a tick or cross)

Or

If yes, kindly list the impacts;

.....

.....

.....N/A.....

.....

How can they be minimized or mitigated against

.....

.....N/A.....

.....

RESPONDENT RECOMMENDATION:

In your opinion, do you think the project should be allowed continue?

YES ☑ OR NO ☐

(Please mark accordingly using a tick or cross)

Kindly give reasons for your choice:

.....

.....will reduce the coffee loss in form when not

.....harvesting due to lack of drying space.

.....will reduce coffee beans.

SIGN: .....

Thank you for your Comments/Participation

ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT (SPR) REPORT FOR – KIANJOGU COFFEE FACTORY

PUBLIC PARTICIPATION QUESTIONAIRE

Name of the respondent. [illegible]

Contact/Phone No. [illegible] I/D No. [illegible]

Physical Address. [illegible]

Negative Impacts

Are there negative/harmful Impacts to the proposed project(s)?

YES Or NO ☑ (Please mark accordingly using a tick or cross)

If yes, kindly list the impacts;

N/A

How can they be minimized or mitigated against

N/A

RESPONDENT RECOMMENDATION:

In your opinion, do you think the project should be allowed continue?

YES ☑ OR NO (Please mark accordingly using a tick or cross)

Kindly give reasons for your choice:

No visible lack of labour and water and excavating.

SIGN: [illegible]

Thank you for your Comments/Participation

ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT (SPR) REPORT FOR – KIANJOGU COFFEE FACTORY

PUBLIC PARTICIPATION QUESTIONAIRE

Name of the respondent.... ISAACK MURAGE GITHINJI.....

Contact/Phone No.... 0726 785941 I/D No.... 12777801.....

Physical Address..... KIANJOGU.....

Negative Impacts

Are there negative/harmful Impacts to the proposed project(s)?

YES ☐ NO ☑

Or (Please mark accordingly using a tick or cross)

If yes, kindly list the impacts;

.....

.....

.....

.....

How can they be minimized or mitigated against

.....

.....

.....

RESPONDENT RECOMMENDATION:

In your opinion, do you think the project should be allowed continue?

YES ☑ OR NO ☐

(Please mark accordingly using a tick or cross)

Kindly give reasons for your choice:

.....

.....Will save farmers money and increase Payment.....

.....

.....

SIGN: .....

Thank you for your Comments/Participation

Annex VIII: Minutes of PP&SC and AGM

Republic of Kenya

Kenya Climate Smart Agriculture Project

County Project Coordinating Unit-Nyeri

REF: KCSAP/NYI/COFFEE GEN/VOL I **DATE:18/11/2021**

BACK TO OFFICE REPORT: INNITIAL COFFEE REVITALISATION FCS MEETING

Date:18.11.2021, Venue: RUTUMA FCS.

Present

1. Patrick Mwangi-director Agribusiness & Marketing
2. Mary Ann Wanjiru-coffee Desk officer KCSAP/CRP
3. Ephantus Mwangi -Value chain expert -Coffee
4. Beatrice Theuri-CASO/PO lead
5. Joseph Imboba-coffee factory officer
6. Ndirangu Kimunyu- Coffee Officer Mathira West.

Rutuma FCS attendance

1. Samuel Maregwa
2. Isaya Kahihu
3. Joel K. Ndebu
4. Solomon Nduiki
5. Moses Muriithi
6. Beatrice Mumbi

MEETING OBJECTIVES.

- Sensitization of the coffee society management on the coffee Revitalization project and the activities to be involved.
- Objectives of the CRP.

- The main project activities being:
- Capacity building of the beneficiaries.
- Development of the modernization EDP
- Development of farm input proposals.
- capacity building of young coffee Agri-entrepreneur

Key issues on EDPs as discussed

- The management was given an outline of the project and being a conditional grant, all the conditions were highlighted as below:
  - Land on which factory modernization search must be consistent with the FCS name
  - The project cost for modernization is 12,666,000and for inputs 2,060,000.

- The 30% modernization FCS contribution. 8,866,000
- Total FCS CONTRIBUTION: 3,799,715.
- MOU between County government of Nyeri and FCS management.
- Tax compliance -up to date
- Supervisory committee on board
- Project Account Introduced by CPCU for the FCS signatories to KCSAP banker
- Up to date audited accounts/report
- Any other condition put u by the donor.

Way forward

- The society management to hold a meeting and discuss the project.
- Each society to make a draft EDP from the given format through the secretary manager.
- Each society to get a way of raising the 30% required for each EDP.
- The management to select the factories that will be modernized/upgraded.
- The management to inform its members of the project activities.
- The secretary manager to be in charge of the EDP development in consultations with the Chairman.

ANNEX.

Fig 1. A session with the Rutuma management.

Group photo with the management team.

Prepared by

Mary Ann Maina

Coffee Officer – KCSAP Nyeri.

MINUTES OF ANNUAL GENERAL MEETING HELD ON 18TH FEBRUARY 2022 AT KIANJOGU SOCIETY HEADQUARTERS.

PRESENT MINUTE EXRTACT

Mr. Isaya Wambugu Kahihu	- Chairman
Mr. Solomon Nduiki Kimondo	- Vice Chairman
Mr. Moses Maina Muriithi	- Hon. Secretary
Mr. Joel Kariuki Ndebu	- Treasurer
Mr. Samuel Maregwa Gichini	- Comm. Member

IN – ATTENDANCE:

Beatrice Mumbi Kabugara	- Secretary Manager
Johnam Murimi Gathuthi	- Bookkeeper
Francis	- D.C.O.
Mr. Muriuki	- Mariara Kigotho & Associates
Gerald Njaramba	- Senior Ass. Chief Kianjogu
Gachanja	- Enea Sacco
Murathimi	- Baraka Sacco
Rachel	- New K.P.C.U.

Members present were 230.

The meeting was opened with a word of prayer by member number 3813 Dickson Miugo.

MIN.6/2022: A.O.B

a) Factory Modernization Project.
The Chairman informed members that the County & National Government through KCSAP have decided to modernize factories of one society per ward. Rutuma had been selected and the project requires 30% contribution by the society. The members agreed on the project and this was proposed by member number 943 Humphrey Gachari and seconded by member number 1148 Perpetua Wanjiru.

Having no other business the meeting was closed at 3.00 p.m. with a word of prayer by member number 141 Elibabeth Njugu.

Minutes recorded by: Beatrice Mumbi Kabugara - Secretary Manager

Minutes confirmed by: Isaya Wambugu Kahihu - Society Chairman

RUTUMA A.M.C.S. FARMERS CO-OP. SOCIETY LTD
08 JUL 2022

Annex IX: BoQ

Investment Required (New Equipment, renovations and repairs)	Units/ for Society	Unit Cost	Total Cost for Society	Total Investment for Kianjogu	Total Investment for Ruthagati	Total Investment for Karie
Enhanced Pulping process efficiency						
Eco-Pulper: Supply installation & Commissioning 6tonnes/hour	1	6,025,714	6,025,714	6,025,714	0	0
Enhanced drying and parchment quality						
Green House Solar drier 50ft X 50 fts	4	800,000	3,200,000	0	1,600,000	1,600,000
Metallic Drying Tables 6m X 150m	27	120,000	3,240,000		1,620,000	1,620,000
Enhanced cherry & parchment security					0	
Flood Light Installation	10	20000	200,000		100,000	100,000
Total			**12,665,714**	**6,025,714**	**3,320,000**	**3,320,000**

Annex X: Experts Practicing License

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

License No : NEMA/EIA/ERPL/17153

Application Reference No: NEMA/EIA/EL/22182

M/S **Dickson Kimathi Muthaura**
(individual or firm) of address

P.O. Box 2269-60200 MERU

is licensed to practice in the

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

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

Issued Date: **4/6/2022**

Expiry Date: **12/31/2022**

Signature.....

(Seal)
Director General
The National Environment Management Authority

ANNEX XI: Photos of PP &SC