



**ENVIRONMENTAL IMPACT ASSESSMENT SUMMARY PROJECT
REPORT (SPR)**

FOR

**THE PROPOSED FOOD PROCESSING DEVELOPMENT
ON PLOT L.R NO.871 GITHI/KIHARO OFF ICHAMARA
THANGATHI
ROAD**

GPS COORDINATES: -0.550689'; E 37.112982



PROJECT PROPONENT

KENYA CLIMATE SMART AGRICULTURE PROJECT (KCSAP)

PROJECT SPONSOR

**GOVERNMENT OF KENYA/COUNTY GOVERNMENT OF NYERI
WITH SUPPORT FROM THE WORLD BANK**



CERTIFICATION

This Summary Project Report (SPR) for the proposed Banana Value Addition (processing cottage) by Natural Ways Food Supplement Limited, in Mukurweini Sub-county; 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 Environmental Management Coordination Act, 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.

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LIST OF ABBREVIATIONS & ACRONYMS

ASL	Above Sea Level
AEZ	Agro Ecological Zone
AFA	Agriculture, Fishery and Food Authority
CCTV	Closed Circuit Television with digital Camera
CGN	County Government of Nyeri
CIG	Common Interest Group
EA	Environmental Audit
EDP	Enterprise development Plan
EHS	Environmental Health and Safety
EIA	Environmental Impacts Assessment
EPZ	Export processing zone
FAO	Food and Agriculture Organization
GIS	Geographical Information System
GPS	Global Positioning Global Positioning and System
HH	Households
KCSAP	Kenya Climate Smart Agriculture Project
EMP	Environmental management Plan
EMCA	Environmental Management and Coordination Authority
OSHA	Occupational Health and Safety Act
KEBS	Kenya Bureau of Standards
KFS	Kenya Forest service
NEMA	National Environment Management Authority
OMUWASCO	Othaya Mukurweini Water and Sewerage Company
PCPB	Pest Control Products Board
PPP	Public Private Partnership
SPR	Summary Project Report
VMG	Vulnerable and Marginalized Groups
WHO	World Health Organization
WRMA	Water Resource Management Authority
WUA	Water Users Authority

EXECUTIVE SUMMARY

This Report discusses the results of environmental and social assessment for proposed agricultural (banana) value addition/ marketing which is to be located at Kihuti sub-location, Mukurweini central ward, about 3 Kilometres from Kiahungu Town, off the Mukurweini–Murang’a; C70 Road. The site is situated within the Mukurweini central area. The actual proposed construction site is in Kihuti Village, Githii Location, Central Ward, Mukurweini Sub County at a private owned land. The Land is registered under Natural Ways Food Supplements Ltd, a private company on L.R. No. 189/Kihuti/Mukurweini.

The project is located on a private piece of land measuring about half acre. The project is proposed by Reuben Kabui Ngaca (The proprietor and director of Natural Ways Food Company Ltd) and it will be implemented by the Government of Kenya, County Government of Nyeri through the Department of Agriculture, Livestock, Fisheries Development through Public Private Partnership grant and collaboration with the KCSAP project.

The proposed project is intended to serve the local community under the larger Mukurweini and Nyeri County banana producing areas, during the 2021-22 financial year.

The project activities will entail construction of a solar powered banana value addition facility comprising of grading room, washing and chopping, solar drying area, including other auxiliary facilities namely; toilet, chemical store, tables in collection and grading area, weighing space, mini-office, and externally garbage collection tank. It is also expected that the proponent will do the construction of a perimeter fence including employment of personnel and installation of CCTV cameras for security of the project.

Already preliminary works, design and documentation including a feasibility (Enterprise Development Plan) study reports have been done and therefore conducting of environmental impacts and social assessment study is also done pursuant to environmental management and coordination Act Cap 2000 and its subsidiary Environmental impacts Assessment and Audit Regulations 2003. The law makes it statutory for any new physical development the proponent to prepare a Summary Project Report for the same.

The Project area is situated in a zone with moderate to high agricultural production potential exacerbated by several factors including active banana 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. 7.5 Million.**

The activities must be done as required under the environmental management and coordination Act which requires construction and operation works in such facilities to be preceded by assessment to ensure that proper arrangements and safety measures are well taken to mitigate against any possible environmental and social risks that may culminate out of the process.

The assessment was accomplished through field visits, desk survey, available secondary data and information by public participation through focused (Key stakeholder) group in an open group discussions and direct consultations.

The ESIA employed various approved techniques and methods to capture both primary and secondary data including; desk review, use of community participation (CPP) questionnaires where 35 questionnaires were issued and all successfully filled and returned, 3 FGDs.

Some of the negative attributes of the proposed project and weaknesses identified during the exercise include:

- Generation of biodegradable and non-biodegradable agricultural wastes such as banana peeling, organic and inorganic garbage at both during construction and operation phases.
- Bringing in of new entrants such as horticultural traders 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, can also be anticipated.

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 at the back of this report (see the EMP back page of this report).

The proposed project will serve a very important role in boosting of banana 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.

CHAPTER ONE

INTRODUCTION

1.0 Background Information

The objective of the proposed project is to construct a modern facility for collection, sorting, grading and processing (solar drying) of bananas including other agricultural produce such as pumpkins, cassava, sweet potato and other tubers. The project will be constructed in zone two at Central point within the Kihuti, in Mukurweini central ward, about 3 Kilometers from Kiahungu Town, off the Mukurweini–Murang’a C70 Road. The site is situated within the Mukurweini central area. The actual proposed construction site is in Kihuti Village, Githi Location, Central Ward, Mukurweini Sub County at a private owned land. The Land is registered under Natural Ways Food Supplements Ltd, a private company on L.R. No. 189/Kihuti/Mukurweini within Nyeri County. The factory will have wooden shelves, drying floors, packaging and a weighing area. The proposed project is in line with KCSAP development objective of increasing agricultural productivity and enhance resilience /copying mechanisms to climate change risks in the targeted smallholder farming and pastoral communities in Kenya, and in the event of an eligible crisis or emergency, to provide immediate and effective response. The project is a low risk project with no major anticipated environmental and social impacts. It is therefore recommended to be subjected to an environmental impact assessment summary project report.

1.1 SPR Approach and Methodology

1.1.1 Screening

The second schedule of the environmental management and coordination Act of 1999 (Amendment 2016) provides the types of development projects which must be subjected to the ESIA study process before commencement. Depending on nature and magnitude of potential environmental and social impacts, the development projects are classified as either being Low risk, medium Risk or High risk.

Agricultural marketing infrastructures such produce collection, sorting and grading sheds for purposes of produce preservation and value addition are classified either under low or medium risks. The proponent and the SPR experts concluded that an SPR study was mandatorily and appropriate in consideration of the infrastructural size and magnitude of the associated impacts.

1.1.2 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.

1.1.3 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:

1.1.4 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. Three stakeholders meetings were held one FDG discussion, second meeting with management and neighbors while the last meeting was with general community members. 20 questionnaires were administered while sixteen were responded to. The SPR 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.

1.1.5 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.

1.1.6 Desk Review of Documents

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

1.1.7 Field Data Collection

This was culminated by several trips by the EIA team to the proposed site for cognizance, field visits including transect walks and group/informant meetings and consultations.

1.1.8 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.

1.1.9 Public Consultation

Preparatory meetings were held with key stakeholders at various stages of the assignment. Taking into consideration of environmental and social implications, the ESIA Consultancy Team was expected to review existing related legislation and regulations in Kenya as appertains the proposed development and all documents on the proposed marketing Shed Project.

1.2 Summary Project Report Organization

The report has several major Chapters presented as follows;

1. Introduction: Project background and context
2. Project description
3. Location of the project
4. Public Participation and Stakeholder Consultations
5. Potential impacts mitigation measures
6. Environmental and Social Management & Monitoring Plan (ESM & MP)
7. Conclusions and recommendations
8. Appendices

CHAPTER TWO

NATURE OF PROJECT

2.1 Introduction

The project will contribute to two of the current Government's Big Four Agenda of; improving food security by increasing the shelf life of perishables as well as in manufacturing.

The proponent ventured into value addition of green bananas, pumpkins, cassava and millet after setting up a cottage industry at Kihuti area in Mukurwe-ini Sub-County, Nyeri County in 2016. Since then, he has been grinding the produce making porridge flour named Afya Chap Chap. Other than offering a solution to exploitation by brokers, he also wanted to encourage farmers to embark on the growing of traditional food crops as well as fulfill his other dream of being an employer. With time, he has been able to increase production from 90 kilos of the flour in 2016 to 800 kilos in a day today. Kabui earns between Sh50,000 and Sh100,000 per month from the venture. He has also joined the list of renowned manufacturers and distributors of porridge flour to supermarkets and other outlets in central, parts of Eastern and is making headway in parts of Rift Valley and Nairobi.

2.2 Project Description

To process bananas, he starts by cutting both tips of the banana fruit then wash it with sodium meta bi-sulphite salt, a preservative which gets rid of the sticky sap in raw bananas. The bananas are then sliced into small pieces before being put in solar driers to dry for two to three days depending on the sun intensity. Solar drier technology is used because it mostly works during the day. After they are well dried, the bananas are taken to a posho mill and ground into quality flour. Pumpkins and cassava which are the other ingredients are washed, sliced into small pieces, dried and ground into powder while cassava is peeled first before undergoing the same process. All the ingredients are later taken into the packaging room where they are mixed with millet and amaranth flour and packaged in one kilo and 500 grams' packets which goes at a wholesale price of Sh200 and Sh100 respectively.

The raw bananas and cassava are bought from local farmers at Sh15 per kilo. This means a farmer is capable of selling a 30-kilo banana batch, which would have otherwise fetched a mere Sh150 or Sh200 in the street market at Sh450. To make about 300 kilos of the flour, it requires about 90 kilos of millet, 90 kilos of bananas, 90 kilos of cassava and 30 kilos of pumpkins currently.

Pumpkins are put in small quantities because they are expensive as well as to prevent the flour from turning yellow. Traditional foods such as bananas and cassava among others, have a starch called resistant starch which is not common in grains. Resistance starch helps insulin in the body to be more sensitive. This is why the project comes in handy to help control some of the common diseases such as hypertension and diabetes when people get used to consume traditional foods regularly. The flour is of high nutritional value. Other than being a source of protein, vitamins and carbohydrates it also has other elements including calcium which is essential in the formation of bones. Reuben has increased solar driers from one in 2016 to three

today, bought two vehicles for marketing and distribution and invested in a flour mill. He also has the intention to procure a slicing machine to make slicing, currently done manually, fast, efficient and cut on cost. Other machines in the pipeline include a mixing machine and heaters in driers so the ingredients can be dried both during the day and night to reduce the drying period.

The investment will enable him to scale up production from 10,000 kilos in a month today to 50,000 and raise the number of employees from ten to 20. Thus KCSAP grant is coming to assist in making the dream come true.

2.3 Materials, Products and By Products

Several building materials will be required for construction of the proposed banana drying shed and associated facilities. 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 and fossil fuels (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. Products are mainly agricultural produce, bananas, vegetables and fruits collected and graded at the operation phase. The expected By-products are mainly debris of construction materials during construction and banana peels and leftovers of farm produce. The mitigation measures for these are outlined at the back of this report (see the EMP).

2.4 Process of Solar Drying Technology

Basically, about seven steps will be involved:

- (i) Selection - (of fresh undamaged quality mature farm (banana) produce)
- (ii) Cleaning – (washing and disinfection)
- (iii) Preparation – (cutting of tips, chopping and slicing etc)
- (iv) Treatment – (sulfurizing, Blanching, Salting, coloring etc)
- (v) Drying
- (vi) Packaging
- (vii) Storage or Marketing.

2.5 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. The building materials to be used in construction of the project will be sourced locally from Nyeri, Kiahungu and or Rutune areas. Greater emphasis will be laid on 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.

2.6 Equipment and tools

The proponent intends to use local but convectional tools and equipment which are used for construction industry in Kenya. Ordinary equipment like masonry tools and concrete work equipment shall be used. The technologies will also be manual and use of simple equipment like concrete mixers.

2.7 Project Layout

2.7.1 Main Shed Dimensions

The main shed has been designed as huge spacious permanent hall, where all other amenities are roofed including the grading, sorting and washing area, chopping area, drying area, weighing area, packaging area, store, office, Parking bay, and the washrooms. Inside weighing and grading tables including weighing equipment shall also be established. Dimensions is has been described above (see also the drawing plans at the back of this report)

2.7.2 Collection & Grading Room

This is the most spacious part of the facility. The section will have the actual weighing tables, grading floors but most important also to mention is the availability of ventilators plus lighting amenities.

2.7.3 Sorting Area

Materials or rather produce will be sorted, assessed and grade depending on quality and any other required parameters.

2.7.4 Grading Tables & Drying floor

These shall be large but strong wooden tables. Their use and construction as previously described above. For longevity it is advised that the use of fabricated metallic tables for longevity as an alternative can be thought-out where possible, during the actual implementation of the project.

2.7.5 Chemical Store

The project has also been designed to have a mini-store for storage of any hazardous products such as chemicals, equipment and pesticides.

2.7.6 Cold Room

This will consist of a small section enclosed at the corner of the main shed, but also installed with electricity and other reinforcements specifically for keeping and improvement of longevity of fresh produce.

2.7.7 Office

A mini-office through a partition from the main shed is designed to operate as a small office for coordination and keeping of office/operation records

2.7.8 Sanitary Facilities

The facility will have a double pit latrine to cater for both genders. The facility shall be operated by septic tanks, as the site is not yet connected to any sewer system.

2.7.9 Other important utilities

Water

The neighborhood get water from various sources; Tap water from OMUWASCO, boreholes, roof harvesting, and natural reservoirs like river Thiha-Sagana; and those near spring also get domestic water from Kirerema spring.

For the proposed project significant amount of clean water will be required for cleaning of fresh produce and it has been planned for connection to the nearest OMUWASCO line at Kihuti Shopping center including proposed roof-harvesting and installation of huge tanks for storage of water.

Electricity

The site is proximity with; single phase and two-phase electricity supply. However, for the proposed shed, electricity shall be only used for lighting purposes. The proposed solar driers to serve the project has been designed to be powered by solar panels.

NCPB Products storage

The project has also been designed to have a mini-store for storage of any hazardous products such as chemicals, equipment and pesticides.

Compound and gate

A gate plus perimeter fence has been already done by the proponent as part of beneficiary (community) contributions. The developer (KCSAP) shall only cater for construction of driers and other proposed facilities within the project site.

CHAPTER THREE

3.0 LOCATION OF THE PROJECT

3.1 Location, Area and Beneficiaries

The proposed Project area is located 4km eastwards to the Kihuti Site. The site is bounded by coordinates; latitude **-0.550689'Southwards**; and longitude: **E 37⁰.112982 Eastwards**, respectively. The area is accessible from Kihungu Town and is located along the Mukurweini-Murang'a Road (Class C70). All-weather road to lower Mukurweini (Kabuto and Rugi areas) are as shown in the map below. The area is historical banana growing area with potential to sustain the proposed development. The project is intended to benefit 1270 Households (HH).



Figure 3.1 : Map Showing the Proposed Project Construction site

3.2 Physical and socio-economic context

3.2.1 Demography

The project is to be implemented in Mihuti location, Rugi Ward in Mukurweini Constituency which had an estimated population of **83,932 (40,382 male and 43,550 females)** and **24,043 households**. The sub-county covers an area of 178.6 square kilometers. The Area is inhabited mostly by local indigenous gikuyu tribe with gikuyu language as the basic language. Therefore the main occupation is mixed farming for income and subsistence. There are 17619 total number of farms and each farmer having an average of 0.55Hactares per person in terms of individual farm holdings. (Source: *Kenya National Bureau of Statistics 2009 Census Study*)

3.2.2 Land use

The main economic activity in the area is mixed farming where approximately 85.5% of farmers grow bananas, coffee, maize, 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 63%; and extreme weather conditions of frosts, landslides, floods and drought (16%). Livestock farmers have faced high costs of veterinary due to incidences of FMD, LSD, Pneumonia and other diseases, as well as other extension at; (46%) and animal feeds (39%) respectively. Hence the proposed project is intended to provide value addition in terms of proper collection, sorting, grading and handling of such products.

3.2.3 Infrastructure

Access to the area is through the Mukurweini-Ngamwa-Mweru-Murang'a (class-C70) road section that has been tarmacked. There is 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. However; during the rainy season the roads can sometimes become impassable.

3.3 Climate

The area extends across Upper Midland (UM)₂, agro-climatic zones that experience humid conditions respectively. The average rainfall ranges between 500 mm- 2,400mm, while the average daily temperature throughout the year varies slightly from month to month with average temperatures of around 17⁰C during the months of July and August to about 20⁰C in March. These favorable climate conditions promote growth of banana crop throughout the year.

3.3.1 Precipitation

Here the mean annual rainfall is 1000mm-1400mm per annum. The rainfall decreases to the west as one descends from the Mount Kenya and easterly from the Aberdare ranges at proposed site.

3.3.2 Agro-ecological Zones (AEZ)

The proposed project area falls under AEZ: UM₂ and Um₃ basically characterized by and humid agro ecological characteristics which favors growing of bananas, coffee and food crops such as maize, potatoes, beans respectively; and keeping of dairy and other livestock. The terrain, climate and soils will be key driving factors for sustainability of the proposed project.

3.4 Physiography

The site is surrounded by various public institutions, administrative, commercial (shopping) centers and some natural features. Northerly; Muhito PCEA, Kihate Orphans Secondary School, Kihuti Police Post, Kihuti pry school, Ngunguru Primary, Gathogorero Primary School, Kihuti shopping center and Thangathi township to the farthest East wards.

3.4.1 Topography

The ground slopes gently from the Western to eastern side, the altitude ranging between 1,800m and 1,900m above sea level. Immediate to the site, it lies the Tumu tumu hill standing at 1,891 m A.S.L; which is visible at an approximate distance of 6 km northerly from the proposed project site.

3.4.2 Archaeological set up

Originally, the archaeological set up, of Mihuti, Ngamwa, Rutune areas include a dissected volcano forms culminating from Mt. Kenya down wards to the lower areas with sandy andosol (red soils) which follows the Sagana River between Nyeri and Murang'a borderlines; and ending up to the Tana basin. There are no archaeological characters of significance to the site itself.

3.4.3 Fauna and Flora

The current land use in the catchment comprises of agroforestry trees and crops in the farmlands, No forest except private woodlots in the upper zones and smallholder agriculture in the lower zone. The farmers grow bananas and coffee among other crops for subsistence and for sale. They also keep cows, dairy goats and chickens.

3.5 Geological Details

The affected area fall within Murang'a Topo-sheet of 1:50000. It is also covered by geological report number 73, geology of Fort Hall area. The terrain is rugged with north-south running ridges and drained on either side by south running rivers. The slopes range from 30% to 45% towards NNE and SSW. The area is covered by porphyritic olivine basalts and basaltic agglomerate. The soils are the derivatives of the same that consist of black cotton soil.

3.6 Soils & Geology of Study Area

A survey was carried out and the project area divided into 6 zones whose soil characteristic was studied (AGENN 2018). From the findings it is strongly believed that no any issue in-relation to site' soil property or characteristics, that can be anticipated to affect the implementation of the proposed project. This is again in consideration of the depths of laying foundation, excavation, and nature and magnitude of the proposed project. Indeed, the type and fertility of soil within the area is expected to boost the productivity of the banana crop and therefore enhancing the sustainability of the proposed project.

3.7 Hydrological Details

Thiha, Kirerema and Kaharo irrigation schemes are situated in Mihuti division in Mukurweini. These schemes has abstracted water from rivers; Thiha, Ruarai and Gura which have a command area of over 1000 beneficiaries. The crops grown are mainly vegetables (Bananas, fodder, coffee, kales, tomatoes, onions, arrow roots, cabbage maize, and beans) Figure 3: A Clip showing some of the irrigated crop grown (within the vicinity of the proposed site)

CHAPTER FOUR

PUBLIC CONSULTATION AND PARTICIPATION

4.1 Introduction

This chapter outlines the key issues raised by the public on the proposed project. The findings indicate that all the community members support the project as long as they are involved and fully sensitized on the same.

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 concerns of the stakeholders were known to the decision-makers 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 which 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 1,000 Households as direct beneficiaries (mainly local banana farmers and related service providers). The households fall under the bigger Mukurweini wards whose feasibility, EDP and SPR studies have already been concluded.

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 input suppliers, traders, transporters and even users of the local ecosystem such as springs. 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 e.g. groups such as those residing downstream or banana growing areas.

4.3.3 Government Agencies and other organizations

The consultation also sought the participation of various government agencies, ministries, departments and

associations. These included Ministry of agriculture, Water, Forest, Livestock, Security and the Social services. Other relevant agencies such as Churches though they never presented included; the National Drought Management Authority (NDMA), Kenya wildlife, KFS, Horticulture Authority, EPZ, WUA and WRMA. In broader extension and especially during the operation phase, the benefits can also directly and indirectly affect extra other departments for example the ministry of; Trade, cooperative, health and education.

4.4 Methodology of data collection

The consultant held a public consultative meeting with the community in conjunction with the proponent and the local administration on 23rd December 2020. Focused group approach and structured questionnaire instruments were used for data collection. The participants were sensitized on project proposal and were asked to give their opinions concerning any issue relating to impacts of the project to the society. The respondents comprised of neighbors, local leaders, community members and other relevant stakeholders. Public consultations were conducted in full compliance with COVID-19 regulations (social distancing of 1.5-2 meters, sanitization of hands, the number per meeting limited to 15 persons per facilitator and limiting the time of the meeting to one hour). Through public consultations written and oral information was obtained on the benefits, anticipated negative impacts and mitigation measures.

The following is a summary of issues raised by the respondents.



Figure 4.4 : Public consultation meeting with Giathugu Banana Producers Self Help Group

4.5 Key Issues Arising from Public Participation Meetings

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 communities and contribute to the attainment of the National priority goals and ongoing National efforts to accelerate economic growth and alleviate poverty.

Construction of the factory will reduce post-harvest losses of banana crop and even other farm produce hence contributing to enhanced food security and improved nutrition at the household level.

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 engrain a sense of project ownership within the community.

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 standard of living of the community especially vulnerable beneficiaries (elderly, female headed households and children) since there will be a reduction in time wastage and instead more time spent in agricultural productivity.

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.

4.5.2 Issues and Concerns

Health risks associated with increased incidences of mosquito and flies due to increased breeding sites on peels, rotten materials and collection of garbages. This would be mitigated through proper management of solid wastes. Garbage containment tank is scheduled to be installed for storage of biodegradable wastes during operations of the project.

Possibility of insecurity, conflicts and traffic issues as a result of transportation and entry of various people to provide services and drive benefits out of the proposed project. These are low and mitigatable by the various measures to be addressed in the management plans.

The potential for pesticide and agro-chemical residues getting into the aquatic resources as the agricultural activities intensifies. Proper mitigation measures shall be developed for management of hazardous risks throughout all stages of the project.

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 (99%) had a strong conviction on the key benefits they would have 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 (97.5%) were willing to pay for the services associated with the proposed project. Already the proponent has purchased land for construction of the project among many other contributions both in monetary and kind, in order to ensure that the project materializes.

Similarly and also fundamental is the contributions also made by the other key stakeholders namely KCSAP, ministry of Agriculture and Local Banana Producer Self -Help groups in Mukurweini.

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 all socio-economic aspects are not running well in the community.

CHAPTER FIVE

POTENTIAL IMPACTS AND MITIGATION MEASURES

5.1 Introduction

This chapter presents the assessment of the issues likely to arise as a result of implementation of the proposed Banana value addition project. The anticipated impacts are discussed in three phases namely: construction, operational and decommissioning phases and as well in-regard to their likelihood of occurrence on the physical, biological, occupational and socio-economic environments.

5.2 Impacts during Construction Phase

I) Creation of Employment opportunities for residents of the project area

The proposed project will provide short term and long term employment opportunities to the local Community. During the construction of the proposed project; there will be employment opportunities for both professionals and unskilled workers. Several workers including casual laborers, plumbers, masons and other technicians are expected to work on during the construction period. Skilled, unskilled laborers and formal employees are expected to obtain gainful employment during the period of construction.

The creation of employment opportunities is beneficial both from the economic and social point of view. Economically, it means abundant unskilled labor will be used in digging of trenches, laying of foundations, and transport of construction materials. Socially these people will be engaged in productive employment and minimize social ills like alcohol abuse which is rampant in the project area.

II) Injection of money into the local economy

The project will contribute to the National kitty. The contractor will pay Value Added Tax (V.A.T) on purchasing materials for the project. Construction workers will also pay income tax from their earnings while working on the project. A large sum of the project money shall be released into the local economy due to the construction activities. This money will be inform of payments for skilled and unskilled labor; procurement of construction materials; and payments for local provisions including fuel, foods and accommodation.

III) Creation of market for construction materials

The project will require materials, some of which will be sourced locally within the project area. Some of this include; sand, hard-core and soft stones for the construction. These benefits will spill over to the local community. Local suppliers will be given first priority in supply of construction materials.

Negative Impacts

I) **Noise and issues of traffic** –These may be anticipated due to movement of people and vehicles and motorbikes while transporting people, goods and services to the site.

II) **Soil, Dusts and Air quality** – There will be issues of soil debris, dusts from materials and therefore possible interference of air quality internally within the site. These impacts are expected for short term period and particularly during the construction site.

III) Site insecurity and social conflicts

The site will require day and night guards in order to safe-guard on theft of materials and control of pilferages. Similarly the community leaders in collaboration with the relevant stakeholders: department of cooperatives, gender and social services, local administration, ministry of agriculture and water shall sensitize actors, group dynamics, leadership, group and financial management, entrepreneurship, and on; peace, grievance and resolution mechanisms among other relevant/cross cutting issues to ensure sustainability of the project.

5.3 Impacts during Operation Phase

I) Contribution to Food Security

Reduction of Post-harvest losses to the farms in the project area will motivate the farmers to grow more food crops.

II) Creation of Employment

During operational phase, there will be employment opportunities especially for those who will be employed to manage, maintain the supply system. A number of youths within the project area will be employed in the farms to undertake such activities as cultivation, weeding, harvesting collecting centers, transport and storage & cooling facilities among others. This will improve their living standards and by engaging, they will also change their social behavior.

III) Creation of Wealth

The proposed project will ultimately provide revenues to the beneficiaries and expand the wealth base for the Nation. It will pump both liquefied and tied up wealth hence making the nation gain. It will also go a long way in uplifting Nyeri County and its neighborhood as a whole. Once the people will be empowered in the project area, some will invest and develop the nearby markets.

IV) Improved Physical Character of Land and the immediate Surroundings

Construction of the physical structures and related facilities under the proposed cottage will improve physical character of land and the immediate surroundings. This will immensely contributed to the property value, land value and aesthetic value of the area while ensuring that the environment remains healthy and productive.

V) Improved Well-being of Women and Children

At the household level, women and children bear the burden of poverty and inefficient production systems. The proposed benefits of the project is to reduce such. Already the proponent is fortifying banana flour with pumpkins and other ingredients such as soya though at small scale within the site. The proposed project is intended to formalize and upscale the existing local initiatives.

5.4 Impacts during decommissioning Phase

I) Interruption of Existing Infrastructure and Services

The existing road reserves and utility pipelines and networks will be interfered with by with traffic or debris during demolitions. Demolitions work can also interfere with the existing supply and distribution pipeline networks thereby interrupting infrastructures such as domestic or irrigation water supply and services in the locality by

then. These services are critical and may have implications with spill over from the weirs effects on the social and economic performance.

II) Effect on Socio-Economic Activities

During the decommissioning phase, any other social economic activity dependent on the project will also be interrupted by closure of the operations.

III) Increased Vehicular and Human Traffic

An influx of workers to the project sites will be experienced during the decommissioning phase of the project. This might contribute to the disruption of social order within the local communities. Increased vehicular traffic during the transportation of decommissioning wastes and salvaged materials might result in the destruction of light traffic roads and increase the risk of transportation accidents.

IV) Generation of Liquids and solid wastes

Decommissioning activities will generate various solid wastes ranging from earth material, pipe and fitting debris, wrappings, obsolete equipment ,oils and greases, waste asphalt concrete, human wastes to food wastes. Poor handling and disposal of such waste will lead to environmental pollution. Such wastes have the potential to enter and clog the local drainage channels thereby causing flooding, including pollution of air and land surfaces.

V) Health and Safety Hazards

Workers and the local community will be susceptible to health and safety hazards during the Decommissioning phase of the project. Inherent occupational risks include respiratory to muscular-skeletal injuries, falls into un-marked/ uncovered trenches and accidents from construction vehicles. The influx of construction workers may put pressure on existing local resources, cause social conflicts, promiscuity and related sexually transmitted diseases.

5.5 MITIGATION MEASURES

5.5.1 Preamble

In the context of sustainable development, projects should be implemented in a manner to enhance the living standards of the targeted beneficiaries and the resident communities. The consultant was guided by the principles of sustainability in the formulation of practical mitigation measures for potential impacts identified through stakeholder engagement, public consultation and expert knowledge. The main objective was to maximize social, environmental and economic benefits of the project and to minimize any associated adverse impacts. This chapter presents the proposed enhancement and mitigation measures of potential impacts for the project.

5.5.2 Enhancement Measures for Positive Impacts

Enhancement refers to the deliberate attempts taken in the design and subsequent phases of the project to ensure the success of a wider range of direct and indirect positive outcomes to communities and/or the biophysical environment. This can be in the form of opportunities for social and community development, improved health and wellbeing, improved biodiversity, restored ecosystems and landscape character, and protected and respected cultural heritage

The project will strive to enhance the positive impacts envisaged. The proponent will support the implementation of the Environmental and Social Management Plan (ESMP) at construction and operation phases of the project. Any impacts not envisaged under the ESMP will be identified through structured monitoring and evaluation under the project.

The proponent will improve the experience its customers through better irrigation services and expansion of coverage area. The contractor will maximize the utilization of local labor for construction activities to enhance the socio-economic status of the local communities.

5.5.3 Mitigation Measures for Negative Impacts

5.5.3.1 Construction Phase

A. Air Quality Degradation/ Dust Emissions

The following measures will be observed during the construction phases of the project to mitigate against the degradation of local air quality/ dust emissions;

- i) Construction workers will be provided with dust masks to mitigate against occupational health risks of inhaling exhaust gases and dust.
- ii) The contractor should sprinkle water to maintain dust to the low minimum at all times.
- iii) Supply and construction vehicles will only use the designated transport routes. The drivers will also be advised to stick to prescribed speed limits.
- iv) Sensitization of workers on dust control, use of right ergonomics in loading and off-loading of materials etc.
- v) The contractor shall ensure appropriate vehicle speeds road sections that will be used by construction vehicles on a needs basis to eliminate the creation of dusts

B) Workers Accidents and Hazards during Construction

Proponent will develop and commit the contractors to Site Occupational Health and Safety rules and regulations as stipulated in the Occupational Safety Act of Kenya of 2007 and revised in 2010.

Should an accident occur on the site ;

- (i) The injured person should be given first aid and immediately taken to the hospital
- (ii) An investigation should be initiated immediately to ascertain the cause of the accident and preliminary findings released within 12 hours.

C) Extraction and use of Construction Materials

The contractor should ensure that after the construction materials such as marram, ballast, soft stones etc. have been extracted, the site should be backfilled to help retain the value of the land resource, before the site is to be backfilled it should be fenced to prevent the following: Deaths of persons and livestock, and control of breeding flies.

5.5.3.2 Operation Phase

A. Insecurity

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

various goods and services. 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

Expansion 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.

5.5.3.3 Decommissioning Phase

(a) Traffic issues

Due to the transportations of debris, people and; goods and services.

(b) Generation of Debris

Due to demolitions, explosion, breaking and bring down of structures and buildings.

(c) Interruption of existing Infrastructures

Due to demolitions, breaking and bring down of structures and buildings.

(d) Joblessness

Due to closure of business, activities and the project' operations.

CHAPTER SIX

ENVIRONMENTAL AND SOCIAL MANAGEMENT & MONITORING PLAN (ESM&MP)

6.0 Introduction

In the context of sustainable development, projects should be implemented in a manner to enhance the living standards of the targeted beneficiaries and the resident communities. The consultant was guided by the principles of sustainability in the formulation of practical mitigation measures for potential impacts identified through stakeholder engagement, public consultation and expert knowledge. The main objective was to maximize social, environmental and economic benefits of the project and to minimize any associated adverse impacts. This chapter presents the proposed enhancement and mitigation measures of potential impacts for the project.

6.1 Environmental and Social Management & Monitoring Plan (ESM&MP) for Construction phase

(a) Construction phase Environmental Management & Monitoring Plan						
Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Frequency/ Time Frame	Est. Cost (KShs.)
Loss of Vegetation Cover and landscape	<ul style="list-style-type: none"> Indigenous trees or other fast growing trees be planted in strategic locations where the vegetation cover will be cleared as part of landscaping initiatives; 	<ul style="list-style-type: none"> No. of trees planted Notable areas re-vegetated 	<ul style="list-style-type: none"> Contractor/S upervising engineer/work foreman 	<ul style="list-style-type: none"> Records and delivery notes of trees planted 	3 months	100,000
Risk of Soil Erosion	<ul style="list-style-type: none"> Apply soil erosion control measures such as levelling the project site to reduce run-off; Ensure excavated materials are reused for back filling and compacting, Ensure proper landscaping of the affected areas within the compound, and Ensure compacted areas are ripped off to reduce run-off 	<ul style="list-style-type: none"> Visible soil erosion control measures in place Areas already landscaped 	<ul style="list-style-type: none"> Contractor/S upervising engineer/work foreman 	<ul style="list-style-type: none"> Photos of original site and current site status 	monthly	50,000

Risk of oil spillage	<ul style="list-style-type: none"> • 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; and • Ensure that contaminated materials including used/spilled oils/grease as well as other contaminated materials are stored in a banded area before being disposed off. 	<ul style="list-style-type: none"> • No oil spills cases reported 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman 	<ul style="list-style-type: none"> • Records • Tracking documents 	monthly	100,000
Generation of Solid and Liquid waste	<ul style="list-style-type: none"> • Solid waste to be disposed only at licensed disposal sites; • Take adequate measures on spilled substance on water and land • Ensure minimal spillage • Provide solid waste facilities (waste bins) for temporary disposal of waste before disposal to appropriate and designated locations. • Liaise with the County Government of Nyeri and local NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes 	<ul style="list-style-type: none"> • Quantity of wastes generated, reused or recyclable • No of litter bins • Waste disposal site • Licensed waste handler in place 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman • NEMA 	<ul style="list-style-type: none"> • Tracking documents • Receipts • Attendance Register • Photos 	Weekly	50,000
Air quality degradation/dust emissions	<ul style="list-style-type: none"> • Secure the site with appropriate dust screens which are capable of capturing fine dust without releasing it into the neighborhood. • Regular sprinkling of water to be done on open surface and dust grounds unless paving is done; • After construction, any open area should be planted with appropriate trees, flowers and grasses; • Employees involved in the construction work to be provided with dust masks; • Contractor to enforce strict use of personal protective clothing; 	<ul style="list-style-type: none"> • No of well-maintained machinery Water sprays and mists • No. of designated hauling/stockpiles areas • No of suitable PPE/. • No of drivers trained/advised 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman • NEMA 	<ul style="list-style-type: none"> • LPOs • Reports • Signed contracts between Contractor & employees 	Weekly	30,000

<p>Noise Pollution and vibrations</p>	<ul style="list-style-type: none"> • 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; • There should be less use of noisy equipment on site. 	<ul style="list-style-type: none"> • Number of PPEs purchased. • Number of workers using PPEs. • Available servicing cards/receipts • Number of vehicles and machinery not on idling when not in use. 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman 	<ul style="list-style-type: none"> • Local purchase orders • Reports • Receipts • Work plan 	<p>Daily and weekly</p>	<p>30,000</p>
<p>Air Pollution (Dust & Machinery and motor vehicle emissions)</p>	<ul style="list-style-type: none"> • Carry out suitable maintenance on all machinery to be used to minimize the emission of noxious gases. • Contractor to instruct drivers in the proposed project to switch off engines when the machineries and vehicles are not in use • Use of dust masks by workers. • Locating haul roads, tips, and stockpiles away from sensitive receptors, considering prevailing wind directions. • Drivers to avoid unnecessary speeding near settlements in the project areas (sensitize drivers on due diligence) • Apply water sprays and mist by trucks as dust suppression measures on loose soils and stockpiles. 	<ul style="list-style-type: none"> • No of well-maintained machinery • No unnecessary movement of machinery/ vehicles • Water sprays and mists • No. of designated hauling/stockpiles areas • No of suitable PPE/. • No of drivers trained/advised 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman • NEMA 	<ul style="list-style-type: none"> • LPOs • Reports and records of maintenance • Signed contracts between Contractor & employees 	<p>Daily and Weekly monitoring</p>	<p>100,000</p>
<p>Occupational Health and Safety (OHS)</p>	<ul style="list-style-type: none"> • The Contractor to place labels and warning signs in areas posing risk of injury or accidents 	<ul style="list-style-type: none"> • No of Labels and warning signs • No of workers using PPEs on use 	<ul style="list-style-type: none"> • Contractor/S upervising engineer/work foreman 	<ul style="list-style-type: none"> • Purchase receipts • Reports 	<p>Weekly</p>	<p>50,000</p>

	<ul style="list-style-type: none"> The contractor labels and warn the public on the danger of construction activities The contractor to provide all workers with full protective gear (PPEs) The contractor to train and provide First-aid Kit to the workers The contractor to have Incident and Accident Registers on site for recording of injuries or any OHS incidence Compliance with COVID 19 control regulations. Contractor to prepare a contingency/emergency management and preparedness plan for accident response. Employ drivers who are well trained. 	<ul style="list-style-type: none"> by those involved at the site Trained officers on First-aid Kit Incidents reported Number of COVID-19 sensitizations conducted and Records of participants etc. Emergency contacts at the site 	<ul style="list-style-type: none"> Directorate of Occupational Health and Safety (DOSHS) 	<ul style="list-style-type: none"> Attendance register Contingency plan for accident response in place 		
Increased demand for water	<ul style="list-style-type: none"> Water saving devices such as push taps to be installed to minimize lose. Sinking of borehole specifically for the project Installation of roof rainwater harvesting systems to the premise. Construction workers to be sensitized on appropriate water use and conservation technologies applicable. 	<ul style="list-style-type: none"> No. of boreholes drilled No. of gutters installed for water harvesting No, of onsite tanks Rate of metered water consumption 	<ul style="list-style-type: none"> Contractor/Supervising engineer/work foreman 	<ul style="list-style-type: none"> Records Purchase receipts Borehole licenses/permits 	Monthly	10,000

(b) Construction phase Social Management & Monitoring Plan

Social impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time Frame	Est. Cost (KShs.)
Social conflict	<ul style="list-style-type: none"> Involve local administration and other social groups like the church in social mediation and moderation Notify all the affected persons of any incident 	<ul style="list-style-type: none"> No. of cases/incidents/conflicts addressed 	<ul style="list-style-type: none"> Contractor/Supervising engineer/work foreman 	<ul style="list-style-type: none"> Incident Register 	1 month	10,000

	<ul style="list-style-type: none"> Establish an effective and efficient grievance redress mechanism where all conflicts related to the project are addressed. 		<ul style="list-style-type: none"> Local administration 			
Increase in incidences of HIV/AIDS and STIs	<ul style="list-style-type: none"> Contractor to sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases to be instituted and implemented as part of the Contractor's Health and Safety Management Plan (CHSMP) to be enforced by the Supervising Engineer. Periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor's Staff. Controlled access to Contractor's Workforce Camps by outsiders. <p>Contractor to provide standard quality condoms at the construction site during the construction period.</p>	<ul style="list-style-type: none"> Number of worker and community sensitized Availability of condom dispensing equipment Number of meetings held for workers and community 	<ul style="list-style-type: none"> Contractor Proponent Public Health 	<ul style="list-style-type: none"> Attendance registers Site visits 	monthly	40,000
Spread of COVID-19 amongst workers	<ul style="list-style-type: none"> The Contractor will develop a SOPs for managing the spread of Covid-19 The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives, and site-specific project conditions. Mandatory provision and use of appropriate Personal Protective Equipment (PPE) Avoid concentrating of more than 15 workers at one location. Maintain social distancing at least 2 meters. All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs. 	<p>Availability of:</p> <ul style="list-style-type: none"> SOP(s), Training material, PPE, Sanitizing facilities, Installed handwashing equipment 	<ul style="list-style-type: none"> All the Project components Supervising Eng. & Contractor(s) 	<ul style="list-style-type: none"> SOPs, Project assessment reports, Purchase orders/receipts, Photos 	monthly	60,000
Labor risks including labor influx	<ul style="list-style-type: none"> Adherence to national labour code and WB policies. 	<ul style="list-style-type: none"> Register of workers engaged in the project. 	<ul style="list-style-type: none"> Contractor supervising engineer 	<ul style="list-style-type: none"> Training reports 	1 month	50,000

	<ul style="list-style-type: none"> Local community members will be given priority in employment opportunities, in casual and unskilled labour. Train the community on the project requirements and product. Training of PMC, SAIC, CESSCOs and Community policing of the project 	<ul style="list-style-type: none"> Number of trainings for PMC, SAIC, CESSCOs and Community policing of the project 	<ul style="list-style-type: none"> CPCU/NPC U 	<ul style="list-style-type: none"> Workers register Copies of ID cards 		
Risk of social conflict	<ul style="list-style-type: none"> Ensure national labour codes & WB policies are included in the Tender Document. Contractor to sensitize the workers on code of conduct. Develop and implement local hiring rules in consultation and partnership with the local community 	<ul style="list-style-type: none"> Evidence of national labour codes & WB policies in Tender Document. No of signed code of conduct by the workers 	<ul style="list-style-type: none"> Contractor Works foreman, CPCU, Local Project management committee 	<ul style="list-style-type: none"> Minutes Reports Attendance registers 	1 month	10,000
Increased risk of illicit behavior and crime	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> No. Sensitized workers on national code of conduct Register of all worker on site Review report on workers behavior 	<ul style="list-style-type: none"> Contractor Works foreman 	<ul style="list-style-type: none"> Minutes Reports Attendance registers 	1 month	10,000
Sexual Exploitation and Abuse by project workers against community members	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> SEA Action Plan Code of Conduct Number of staff trainings SEA FP Community Liaison trained in PSEA 	<ul style="list-style-type: none"> Supervision Consultant GBV Expert 	<ul style="list-style-type: none"> SEA action plan Attendance registers 	1 month	50,000

		<ul style="list-style-type: none"> • IEC materials for workers' sites and community • Discrete SEA reporting pathway 				
Gender-based Violence (GBV) at the community level	<ul style="list-style-type: none"> • The contractor will implement provisions that ensure that GBV at the community level is not triggered by the Project, including: • Effective and on-going community engagement and consultation, particularly with women and girls; • Review of specific project components that are known to heighten GBV risk at the community level, e.g. compensation schemes; employment schemes for women; delivery of water supplies; etc. 	<ul style="list-style-type: none"> • Number of SEA action plans prepared • Code of conduct prepared • Number of staff trainings on SEA held. • -Number of PSEA community liaison trainings carried out • Number of IEC materials available 	<ul style="list-style-type: none"> • Supervision Consultant • GBV Expert 	<ul style="list-style-type: none"> • GBV plans • Attendance registers • GBV action plans 	1 month	50,000
Theft, vandalism and destruction of infrastructure	<ul style="list-style-type: none"> • Ensure the general safety and security of the site by providing day and night security guards • Ensure only authorized personnel get access to the site during construction. • Develop mechanism to address all complaints at the site. 	<ul style="list-style-type: none"> • No. of items vandalized or stolen • No. of cases/complaints registered 	<ul style="list-style-type: none"> • Contractor • Project management committee 	<ul style="list-style-type: none"> • Registers 	monthly	20,000

(a) Operation phase Environmental Management & Monitoring Plan							
Environment al impact	Proposed Measures	Mitigation	Indicator	Responsibility	Means of Verification	Time Frame	Est. Cost (KShs.)
Increased demand for water	<ul style="list-style-type: none"> Water saving devices such as push taps to be installed to minimize lose. Sinking of borehole specifically for the project Installation of roof rainwater harvesting systems to the premise. . 		<ul style="list-style-type: none"> No. of boreholes drilled No. of gutters installed for water harvesting No, of onsite tanks Rate of metered water consumption 	<ul style="list-style-type: none"> Project management committee, CPCU 	<ul style="list-style-type: none"> Records, Bills Purchase receipts 	3 months	15,000
Increased demand for Energy	<ul style="list-style-type: none"> 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. 		<ul style="list-style-type: none"> No. of Energy saving bulbs in place Amount of natural light penetrating No. of solar panels in place Energy audits conducted 	<ul style="list-style-type: none"> Project management committee CPCU Energy experts 	<ul style="list-style-type: none"> Receipts Bills Reports Photos 	3 months	100,000
Generation of Solid waste	<ul style="list-style-type: none"> Provide solid waste facilities (waste bins) for temporary disposal of waste before disposal to appropriate and designated locations. Liaise with the County Government of Nyeri and local NEMA office for guidance on licensed waste collectors and suitable dumping sites for generated wastes 		<ul style="list-style-type: none"> Quantity of waste collected No. of waste receptacles No. of licensed waste handlers 	<ul style="list-style-type: none"> Project management committee CPCU 	<ul style="list-style-type: none"> Tracking records Photos Copies of license 	3 months	30,000

Water pollution	<ul style="list-style-type: none"> Regular maintenance septic system. Exhaust the septic tank through a NEMA licensed exhauster once full Ensure the septic tank-soak pit system being used is not situated near a well, bore hole or close to the shore to avoid groundwater contamination 	<ul style="list-style-type: none"> No of times maintenance done, No. of NEMA licensed exhausters 	<ul style="list-style-type: none"> Project management committee CPCU 	<ul style="list-style-type: none"> Tracking records Licenses Photos 	2 years	50,000
Occupational Health and Safety risks	<ul style="list-style-type: none"> 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. Sensitize all workers on occupational health and safety Provide adequate first-aid facilities in the project sites to handle medical emergencies 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Project management committee Directorate of Occupational Health and Safety (DOSHS) 	<ul style="list-style-type: none"> Purchase receipts Reports Attendance Register 	3 months	50,000
(b) Operational phase Social Management & Monitoring Plan						
Social impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of Verification	Time Frame	Est. Cost (KShs.)
Social Conflict	<ul style="list-style-type: none"> Involve local administration and other social groups like the church in social mediation and moderation 	<ul style="list-style-type: none"> No. of cases/incidents/conflicts addressed 	<ul style="list-style-type: none"> Project management committee, CPCU 	<ul style="list-style-type: none"> Incident Register 	3 months	10,000

	<ul style="list-style-type: none"> Notify all the affected persons Establish a grievance redress mechanism where all conflicts related to the project are addressed 			<ul style="list-style-type: none"> GRMs policy 		
Theft, vandalism and destruction of infrastructure	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Presence of a day and night security guard No. of complaints 	<ul style="list-style-type: none"> Project management committee CPCU 	<ul style="list-style-type: none"> Incident Register 	monthly	20,000
Sexual Exploitation and Abuse	<ul style="list-style-type: none"> 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, performance appraisal systems, etc 	<ul style="list-style-type: none"> SEA Action Plan Code of Conduct Number of staff trainings SEA FP Community Liaison trained on PSEA 	<ul style="list-style-type: none"> Project management committee CPCU GBV Expert 	<ul style="list-style-type: none"> SEA action plan Attendance registers 	3 months	100,000
Increase in incidences of HIV/AIDS and STIs	<ul style="list-style-type: none"> sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases Periodic HIV/AIDS and other communicable diseases Awareness Workshops for facility workers. 	<ul style="list-style-type: none"> Number of workers and community sensitized Number of meetings held for workers and community 	<ul style="list-style-type: none"> Project management committee CPCU Public Health 	<ul style="list-style-type: none"> Attendance sheets, Registers, Site visits, Photos 	3 months	60,000
Spread of COVID-19	<ul style="list-style-type: none"> The project management committee will develop a SOPs for managing the spread of Covid-19 during project 	Availability of: <ul style="list-style-type: none"> SOP(s), Training material, 	<ul style="list-style-type: none"> Project management committee 	<ul style="list-style-type: none"> SOPs, Project assess 	Continuous	40,000

	execution. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives, and site-specific project conditions.	<ul style="list-style-type: none"> • PPE, • Sanitizing facilities, • Installed handwashing equipment 	<ul style="list-style-type: none"> • CPCU • Public Health 	<ul style="list-style-type: none"> • ment reports , • Purchase orders/receipts, • Photos 		
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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	<ul style="list-style-type: none"> • Dust suppression through water sprinkling. • Proper servicing of equipment to reduce exhaust fumes. • Proper communication engagement 	<ul style="list-style-type: none"> • No. of equipment Serviced • No. of forums held • No. of complaints raised 	<ul style="list-style-type: none"> • Contractor • Project management committee • CPCU 	<ul style="list-style-type: none"> • Records of servicing, • Registers • Photos 	1 month	40,000
Generation of Solid and Liquid waste	<ul style="list-style-type: none"> • Debris from demolition and all other solid waste to be handled, managed and disposed according to the EMC (Waste Management) Regulations 2005. 	<ul style="list-style-type: none"> • Quantity of debris collected • No. of licensed waste handlers 	<ul style="list-style-type: none"> • Contractor • Project management committee • CPCU 	<ul style="list-style-type: none"> • Tracking records • Photos • Copies of license 	1 month	70,000

	<ul style="list-style-type: none"> • Solid waste to be disposed only at licensed disposal sites; 					
Occupational health and Safety risks	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Contractor • Project management committee • CPCU • Directorate of Occupational Health and Safety (DOSHS) 	<ul style="list-style-type: none"> • Purchase receipts • Reports • Attendance Register 	3 months	50,000
Noise Pollution and vibrations	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Number of PPEs purchased. • Number of workers using PPEs. • Available servicing cards/receipts 	<ul style="list-style-type: none"> • Contractor/Supervising engineer/work foreman 	<ul style="list-style-type: none"> • Local purchase orders • Noise survey Reports • Receipts • Work plan 	3 months	50,000
Water Pollution	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Quantity of waste debris collected and disposed accordingly • Licensed exhauster 	<ul style="list-style-type: none"> • Project management committee, CPCU, NEMA 	<ul style="list-style-type: none"> • Receipts, • Reports, • Copies of licenses, • MoU, • Photos 	3 months	100,000

		<ul style="list-style-type: none"> No of times site is remediated from spills 					
(a) Decommissioning phase Social Management & Monitoring Plan							
Social impact	Proposed Measures	Mitigation	Indicator	Responsibility	Means of Verification	Time Frame	Est. Cost (Kshs.)
Increase in incidences of HIV/AIDS and STIs	<ul style="list-style-type: none"> Sensitize workers and community members on HIV/AIDS Awareness and other communicable diseases Periodic HIV/AIDS and other communicable diseases Awareness Workshops for facility workers. 		<ul style="list-style-type: none"> Number of workers and community members sensitized Number of meetings held for workers and community 	Contractor, Project management committee, CPCU Public Health	Attendanc e registers Site visits Photos	1 month	10,000
Sexual Exploitation and Abuse	<ul style="list-style-type: none"> Develop and implement a SEA action plan Sensitization of staff Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; Regular community outreach to women and girls about social risks and their PSEA-related rights; 		<ul style="list-style-type: none"> SEA Action Plan Code of Conduct Number of staff trainings IEC materials for workers on site and community 	Contractor, Project management committee, CPCU GBV Expert	SEA action plan Attendanc e registers	1 year	70,000

Theft, vandalism and destruction of infrastructure	<ul style="list-style-type: none"> • Provide day and night security guards • Ensure only authorized personnel get access to the decommissioning site 	<ul style="list-style-type: none"> • Presence of a day and night security guard • No. of complaints 	Contractor Project management committee, CPCU	Incident Register Records of employment	monthly	20,000
Increased risk of illicit behavior and crime	<ul style="list-style-type: none"> • 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). 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Prior notification of the facility management, employees, local community members and relevant local leaders • Where possible provide an alternative source of livelihood 	<ul style="list-style-type: none"> • Notifications issued • No. of forums held 	<ul style="list-style-type: none"> • Contractor • Project management committee • CPCU 	<ul style="list-style-type: none"> • Memos • Letters 	3 months	5,000

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This report presents the findings of the assessment and includes an ESMP and fulfils the requirements of EMCA. The assessment has highlighted the potential positive and negative impacts of the proposed project. The report has also looked at the mitigation measures available to reduce the negative impacts and conclude that overall no adverse environmental impacts have been observed that cannot be mitigated. Provided implementation is done with due attention to the mitigation and management measures outlined, the development will have a positive impact on both the bio-physical and socio-economic environment in the area and Kenya at large.

Recommendation

The environmental management measures proposed are straight forward and relate directly to sound environmental practices. It is therefore recommended that the management be provided with necessary approval by NEMA for quick implementation of the project. During the operation of the project, it is necessary that environmental regulations be strictly adhered to. The performance of the facility will also be monitored against the recommended mitigation measures to ensure sustainability.

REFERENCES

- GoK (1965). Food, drugs and chemical substances Act Cap 254. Government Printer, Nairobi, Kenya.
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- GoK (No.13, 2013)).Agriculture & Fisheries Authority Act, Cap 2013. Government Printer, Nairobi, Kenya.
- GoK (1983). Pest Control and Products Act, Cap 346. Government Printer, Nairobi, Kenya.
- GoK (2003).Environmental Impact Assessment and Audit Regulations, 2003.Government Printer, Nairobi, Kenya.
- GoK (2006).EMCA - Water Quality Regulations, 2006.Government Printer, Nairobi, Kenya.
- GoK (2009) The National population census statistics, Government Printer, Nairobi, Kenya.
- GoK (2006).The Conservation of Biological Diversity Regulations 2006.Government Printer, Nairobi, Kenya.
- GoK (2007).Fire Risk Reduction Rules, 2007.Government Printer, Nairobi, Kenya. GoK (2007).Occupational Health and Safety Act, 2007. Government Printer, Nairobi, Kenya.
- GoK (2008).EMCA - Air Quality Standards Regulations, 2008.Government Printer, Nairobi, Kenya.
- GoK (2009).Building Code 2009.Government Printer, Nairobi, Kenya.
- GoK (2009).EMCA - Noise Prevention and Control Rules 2009.Government Printer, Nairobi, Kenya.
- GoK (2010).The Constitution of Kenya, 2010.Government Printer, Nairobi, Kenya.
- GoK (2012).The County Government Act. Government Printer, Nairobi, Kenya.
- GoK (2012).The Physical Planning Act Cap 286.Government Printer, Nairobi, Kenya.
- (i) GoK (2012).The Public Health Act- Laws of Kenya, Chapter 242.Government Printer, Nairobi, Kenya.
- GoK (2002). The Water Act No. 8 of 2002. Government Printer, Nairobi, Kenya.
- GoK (2006).EMCA - Waste Management Regulation, 2006.Government Printer, Nairobi, Kenya.
- (ii) GoK (2015).Environmental Management and Coordination (Amendment Act, 387, 2015.

Annex 1: Certificate of Incorporation



Annex 2: Single permit

		COUNTY GOVERNMENT OF NYERI Website: www.nyeri.go.ke Email: info@nyeri.co.ke Phone: +254 714 952 473			
COUNTY GOVERNMENT OF NYERI					
Business No:	A20L53604	Permit Number	2020/A20L5360401	Year	2020
Grants This					
SINGLE BUSINESS PERMIT					
To					
Business No.	A20L53604	Business Name	NATURAL WAYS FOODS SUPPLEMENTS		
Certificate of Registration/ID No.	PVT-GYUGMPK	PIN Number	VAT Number		
To engage in activity / business / profession or occupation of:					
Business Activity Code & Description:	110: Medium trader, shop or retail services and/or premises from 50 to 300 square Feet				
Detailed Activity Description:	** [Medium trader, shop or retail services and/or premises from 50 to 300 square Feet]				
Having Paid Business License Fees Of:					
KES 4,000.00					
KES (In words) *** FOUR THOUSAND ONLY***					
Business under this license shall be exclusively conducted at the address indicated below:					
Plot No.	871 PF	Physical Location:	KIHUTI	Mukurwe-ini Central	
Postal Address	-	Telephone	0723390368	Fax & Email:	
	Validity Period:	Permit issued by:	Date Issued:	COUNTY GOVERNMENT OF NYERI EXHIBIT 1 SUE COUNTY 31 Dec 2020 18 DEC 2020  COUNTY TREASURY	
			18 Dec 2020		
REF:01960A202012/0000219		Printed by: Wachira Grace			
Notice: Granting this license does NOT EXEMPT the business identified above from complying with current regulations on Health and Safety established by the Government of Kenya and the COUNTY GOVERNMENT OF NYERI					
See Conditions Overleaf					
S/No. B 3957					

Annex 3: Land Ownership (Purchase) Document

REPUBLIC OF KENYA
SALE OF LAND AGREEMENT
BETWEEN

VENDOR: ANTHONY THANDI GITHURE
I/D NO 38602189
P.O BOX270
KARATINA
AND



PURCHASER: REUBEN KABUE NGACA
I/D NO 14688932
P.O BOX 396
MUKURWEINI



PROPERTY: ALL THAT PLOT COMPRISING OF 50*100 FEET OUT OF LAND
PARCEL NUMBER GITHI/KIHARO/871 registered in the name of
the deceased SAMSON GITHURE THANDI.

WHEREAS the Vendor is willing to sell part of his share of inheritance and or
interest comprising of 50*100 feet to be subdivided out of land parcel number
GITHI/KIHARI/871 and the purchaser is willing to purchase the same.

NOW THIS AGREEMENT WITNESETH AS FOLLOWS:

1. That the vendor is willing to sell part of his share of inheritance and or
interest comprising of 50*100 feet to be subdivided out of land parcel
number GITHI/KIHARI/871 and the purchaser is willing to purchase the
same.
2. That the purchase price and or consideration is KSHS 600,000(Six
Hundred Thousand Shilling Only) which has already been paid in terms of
construction of a house comprising of (2) two rooms and the vendor
acknowledges the said mode of payment by the said construction of that
brick house.
3. That the purchaser is in possession of the said plot on sale and has
identified the beacons and elected a fence.
4. That the land out of which the plot is to be subdivide and or hived is under
succession cause.
5. That the Vendor will sign all documents and attend land board for
consent to subdivide and effect transfer to the purchaser once succession
cause is complete.




6. That the vendor will compensate his brother NEWTON MUTURI GITHURE I/D NO 23451020 for the access road over the plot on sale by giving him a portion of his land.

IN WITNESS whereof the parties set their hand and seal this ^{29th} day of ~~Dec~~ ^{Dec} 2020.

SIGNED BY THE SAID VENDOR
ANTHONY THANDI GITHURE
IN THE PRESENCE OF


Anthony Thandi Githure

SIGNED BY THE SAID PURCHASER
REUBEN KABUE NGACA
IN THE PRESENCE OF


Reuben Kabue Ngaca

SIGNED BY THE SAID WITNESSES
NEWTON MUTURI GITHURE
I/D NO 23451020
IN THE PRESENCE OF

DRAWN BY
MATHAIYA BARU & ASSOCIATES
ADVOCATE
P.O BOX 1365
KARATINA

Annex 4: KEBs Certification

ORIGINAL FORM STA/2 (R.4)

PERMIT TO USE THE STANDARDIZATION MARK
THE STANDARDS ACT (CAP. 496 OF THE LAWS OF KENYA)

PERMIT IS GRANTED TO :

NAME OF FIRM: NATURAL WAYS FOOD SUPPLIMENTS	STANDARDIZATION MARK NO. : 45611
POSTAL ADDRESS: P.O BOX 396 NYERI 10103	EFFECTIVE FROM: 2020-09-30
PHYSICAL ADDRESS: MUKURWEINI	EXPIRES ON.: 2022-09-29
TELEPHONE NO.: 0723-390368	DATE OF ISSUE: 2020-09-30
FAX NO. :	
E-MAIL ADDRESS:	

to use the standardization mark specified in the first row hereunder upon and in respect of the commodity and brand specified in the second and third rows there of, which commodity, conform to the standard specification in the fourth row

1 STANDARDIZATION MARK		
2 DESCRIPTION OF THE COMMODITY UPON WHICH THE STANDARDIZATION MARK IS TO BE USED	COMPOSITE FLOUR	
3 BRAND NAME	AFYA CHAP CHAP (TOTO)	
4 STANDARD SPECIFICATION (Number and Title)	KS EAS 782 : 2019 Kenya Standard Composite Flour	

NOTE: 1. EVERY PERMIT HOLDER SHALL PAY AN ANNUAL FEE IN RESPECT OF EACH PERMIT GRANTED OR RENEWED

2. THIS PERMIT IS ISSUED SUBJECT TO THE CONDITIONS SET OUT OVER LEAF


MANAGING DIRECTOR / AUTHORIZED OFFICER
KENYA BUREAU OF STANDARDS

 Kenya Bureau of Standards

Cert-01

Annex 5: Permit to use KEBS trade mark

ORIGINAL FORM STA/2 (R.4)

PERMIT TO USE THE STANDARDIZATION MARK
THE STANDARDS ACT (CAP. 496 OF THE LAWS OF KENYA)

PERMIT IS GRANTED TO :

NAME OF FIRM: <u>NATURAL WAYS FOOD SUPPLIMENTS</u> <hr/> POSTAL ADDRESS: <u>P.O BOX 396 NYERI</u> <u>10103</u> <hr/> PHYSICAL ADDRESS: <u>MUKURWEINI</u> <hr/> TELEPHONE NO.: <u>0723-390368</u> <hr/> FAX NO. : _____ <hr/> E-MAIL ADDRESS: _____ <hr/>	STANDARDIZATION MARK NO. : <u>45612</u> <hr/> EFFECTIVE FROM: <u>2020-09-30</u> <hr/> EXPIRES ON.: <u>2022-09-30</u> <hr/> DATE OF ISSUE: <u>2020-09-30</u> <hr/>
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to use the standardization mark specified in the first row hereunder upon and in respect of the commodity and brand specified in the second and third rows there of, which commodity, conform to the standard specification in the fourth row.

1 STANDARDIZATION MARK	 
2 DESCRIPTION OF THE COMMODITY UPON WHICH THE STANDARDIZATION MARK IS TO BE USED	COMPOSITE FLOUR
3 BRAND NAME	AFYA CHAP CHAP (SOOR PORRIDGE)
4 STANDARD SPECIFICATION (Number and Title)	KS EAS 782 : 2019 Kenya Standard Composite Flour

NOTE: 1. EVERY PERMIT HOLDER SHALL PAY AN ANNUAL FEE IN RESPECT OF EACH PERMIT GRANTED OR RENEWED

2. THIS PERMIT IS ISSUED SUBJECT TO THE CONDITIONS SET OUT OVER LEAF


 MANAGING DIRECTOR / AUTHORIZED OFFICER
KENYA BUREAU OF STANDARDS




Kenya Bureau of Standards

Cert-01

Annex 6: KRA PIN



PIN Certificate

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

Certificate Date 18/08/2020
Personal Identification Number
P051932864R

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

Taxpayer Information

Taxpayer Name	NATURAL WAYS FOOD SUPPLIMENTS LTD
Email Address	NATURALWAYS LTD@GMAIL.COM

Registered Address

L.R. Number : 216	Building OTHORDOX CHURCH GROUNDS
Street/Road ICHAMARA -THANGATHI ROAD	City/Town : MUKURWEINI
County : Nyeri	District Mukurueini District
Tax Area Mukurueini	Station Nyeri
P. O. Box 396	Postal Code 10103

Tax Obligation(s) Registration Details

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till	Status
1	Income Tax - Company	05/08/2020	N.A.	Active

The above PIN must appear on all your tax invoices and correspondences with Revenue Authority. Your accounting end month is March 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 7: NEMA Practicing License for Expert

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/12999

Application Reference No: NEMA/EIA/EL/17181

M/S CHARLES KIRIMI MUTHINJA
(individual or firm) of address

P.O. Box 1552-10100, NYERI

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **1622**

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

Issued Date: 7/16/2020

Expiry Date: 12/31/2020


Signature.....
(Seal)
Director General
The National Environment Management
Authority



Annex 8: Bill Of Quantity

PROPOSED FOOD PROCESSING DEVELOPMENT ON PLOT L.R NO.871 GITHI/KIHARO OFF
 ICHAMARA THANGATHI
 ROAD FOR MS NATURAL WAYS FOOD SUPPLIMENTS LTD OF P.O BOX 396-10103 NYERI.

Item	Description	Qty	Unit	Rate	Amount (Kshs)
A	Element No. 01				
B					
C					
D					
E					
	SUBSTRUCTURES (ALL PROVISIONAL)				
	EARTHWORKS				
	Clear site of all trees shrubs and other vegetation	527	SM	5.00	2,635.00
					-
	Excavate oversite to remove vegetable soil average 150mm deep.	347	cm	250.00	86,750.00
					-
	excavate foundation trenches commencing from reduced levels; not exceeding 1.2m deep	96.03	Cm	250.00	24,007.50
					-
	Excavate pits for column bases commencing from reduced level: not exceeding 1.5m deep(assuming 1500mm square)- 20 No columns	68	Cm	250.00	17,000.00
					-
	Return, fill and ram selected soil in foundations	164	Cm	300.00	49,200.00
					-
	Load and cart away surplus excavated material from site and dump at a site approved by local authorities	347	Cm	250.00	86,750.00
					-
	Extra over all excavations and earthworks from breaking up rock at any point	0	Cm	2,400.00	-
					-

	Keep excavations free from all water: spring or running		Item	5,000.00	5,000.00
					-
	Allow for plunking and strutting sides of excavations		Item	5,000.00	5,000.00
					-
	CONCRETE				-
	Mass concrete 1:2:4 class 15/40				-
					-
	50mm thick blinding under trip foundations	64.2	SM	400.00	25,680.00
					-
	Ditto under column bases	45	Sm	400.00	18,000.00
					-
	carried to Collection				320,022.50
Item	Description	Qty	Unit	Rate	Amount (Kshs)
A	<i>Reinforced concrete (1:1.5:3) class 25/20: vibrated</i>				
B	Column bases	9.00	Cm	10,000.00	90,000.00
C	Columns(assume 200x 400mm)- 20 Number	2.40	Cm	10,000.00	24,000.00
D	Strip foundations	9.63	Cm	10,000.00	96,300.00
	100mm thick ground floor slab	433.00	SM	1,500.00	649,500.00
E	<i>Reinforcement (all provisional) High tensile, square twisted bar reinforcement of various sizes to BS 4461</i>				
	All assorted bar sizes	2,103.00	Kgs	145.00	304,935.00
F	<i>Mesh reinforcement to BS 4461</i>				
	Mesh reinforcement No. A142 weighing 2.22Kgs/SM in floor slab including all necessary support.	433.00	Sm	125.00	54,125.00
G	<i>Sawn formwork to:</i>				
H	Sides: strip foundation	-	SM	400.00	-
I J	Sides: column bases	24.00	Sm	400.00	9,600.00
	Sides of columns	72.00	Sm	400.00	28,800.00

	Edges of 75-150mm high.	44.00	Lm	120.00	5,280.00
	Carried to collection				1,262,540.00

Item	Description	Q t y	Unit	Rate	Amount (Kshs)
A B C D E F G	Walling				
	200mm thick natural local stone foundation walls: bedded and jointed in				
	cement sand mortar 1:3 and including 25 x 3mm thick mild steel hoop	1 6 1. 0 0	SM	1,300.00	209,300.00
	iron in every alternate course.				
	Hardcore				
	300mm thick handpacked hardcore well laid and rammed.	4 3 3	Sm	400	173,200.00
					-
	50mm thick quarry dust or murrum blinding to hardcore (measured seperately)	4 3 3	Sm	150	64,950.00
	Anti-termite treatment				
	Dragnet Ft anti-termite chemical treatment/gliadiator: applied by insecta ltd, or other approved professional pest control specialist: applied strictly	4 3 3	Sm	50	21,650.00
	in accordance with the manufacturer's instructions: 10year warranty.				
	DPM				
	Gauge 500 polythene damp proof membrane with 200mm overlaps	4 3 3	Sm	80	34,640.00
	Plinth finishes				
	25mm thick cement sand mortar (1:3): on concrete or stonework: wood				
	float finish to:-				
	plinths: externally	5 8	Sm	250	14,500.00

	Prepare surfaces and apply undercoat and two finishing coats black				
	bitumastic or equal and approved water resistant paint on: rendered				
	surface to:				
	Plinths externally	5 8	Sm	250	14,500.00
	carried to collection below				532,740.00
	COLLECTION				
	From Page 1				320,022.50
	From Page 2				1,262,540.00
	From Page 3 above				532,740.00
	TOTAL FOR SUBSTRUCTURE CARRIED TO SUMMARY			Kshs:	2,115,302.50
Item	Description	Q t y	Unit	Rate	Amount (Kshs)
	Element No.2				
	<u>WALLING</u>				
	<u>EXTERNAL WALLS</u>				
	<i>Machine cut masonry stone: bedded, jointed and pointed in cement sand mortar 1:3</i>				
A B	200mm thick walls	180.00	Sm	1,300.00	234,000.00
	Gable walling	28.00	SM	1,300.00	36,400.00
	<u>INTERNAL WALLS</u>				
	<i>Machine cut masonry stone: bedded, jointed and pointed in cement sand mortar 1:3</i>				
C	200mm thick	324.00	Sm	1,300.00	421,200.00
	<u>Damp proof course (DPC)</u>				
D	200mm wide Hessian based bituminous felt Dpc laid and bedded in 1:3 cement sand mortar	107.00	Lm	120.00	12,840.00
E F	Ditto but to 150mm wide		Lm	100.00	-

	Ditto but to 100mm wide	-	Lm	100.00	
	TOTAL FOR WALLING CARRIED TO SUMMARY				704,440.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	<i>ELEMENT NO. 03</i>				
	<u>SUPERSTRUCTURE CONCRETE</u>				
	<i>Insitu reinforced concrete 1:2:4 class 25/20 Vibrated in:</i>				
A	Beams and ring beams	15.21	CM	10,000.00	152,100.00
B	columns assuming 200x 400 x3000mm high	4.80	Cm	10,000.00	48,000.00
C	150mm thick suspended slab	137.00	SM	1,500.00	205,500.00
D	150mm thick landings	3.60	Sm	1,500.00	5,400.00
E	staircase	2.16	CM	10,000.00	21,600.00
	<i>Steel reinforcement (provisional) High yield square twisted steel bar reinforcement to BS 4461 and KS 02-22:1976: including bends, hooks, tying wire, distance blocks and spacers.</i>				
F	All assorted bars	4,326.0	Kgs	145.00	627,270.00
	<u>Sawn formwork</u>				
G	Sides and soffits: beams	102.00	Sm	400.00	40,800.00
H	Sides : columns	242.00	SM	400.00	96,800.00
I	Edges of landing over 75mm but not exceeding 150mm high	43.20	Lm	120.00	5,184.00
J	Edges of suspended slabs over 75mm but not exceeding 150mm high	128.40	Lm	120.00	15,408.00
K	Soffits: to suspended 150mm thick slab	137.00	Sm	400.00	54,800.00
L	Soffits: to landing	3.60	Sm	400.00	1,440.00
M	Sloping soffit to staircase	7.20	Sm	400.00	2,880.00
L	risers over 150mm but not exceeding 225mm high	24.00	Lm	120.00	2,880.00
N	Sides of staircase string over 150mm but not exceeding 225mm thick	4.00	Sm	400.00	1,600.00
	TOTAL FOR R.C SUPERSTRUCTURE CARRIED TO SUMMARY				1,281,662.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	<i>Element No.4</i>				
	<u>ROOF</u>				
	<u>ROOF STRUCTURE PROVISIONAL</u>				
	<u>27° roof pitch, 100x 50mm thick celcured timber trusses at various spans n.e 1500mm apart including hoisting and fixing at 3000mm above finished floor level.</u>				
A	Allow a provisional sum for roof construction to structural engineer's details (approx 206 Sm) .	206.00	Sm	750.00	154,500.00
	<u>ROOF COVERING</u>				
B	GCI roofing Sheets Gauge 28 From MRM on 50 x 50mm timber battern as per architect's drawings.	206.00	Sm	500.00	103,000.00
	<u>Rainwater goods</u>				
C	Gauge 28 galvanized iron gutter 200mm wide with a shorter depth of 150mm and deeper depth of 200mm to detail.	51.00	Lm	500.00	25,500.00
D	75mm dia. Extra for G.I outlet	3.00	No	500.00	1,500.00
E	75mm dia. PVC rainwater down pipe jointed with hemp gasket and cold caulking compound and fixed to walls with clips.	9.00	Lm	750.00	6,750.00
	TOTAL FOR THE ROOF CARRIED TO SUMMARY				291,250.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Element No.5 <u>DOORS</u> <u>STEEL DOORS</u>				
	<i>Steel panel door: 50x50 x 4mm hollow section framing and intermediate rails, ends welded and angle cut mitred and welded: part 1.5mm thick metal sheet cladding, welded to both surfaces;5mm thick glazing, permanent vent. All welding ground to smooth finish:Purpose made hinges per leaf, 3-lever mortice locks: locking cleats and bolts:guides:paddlock eye burglar proofing. all as per architect's details.</i>				
A	1200 x 2400mm high double leaf door	4.00	No	21,600.00	86,400.00
B	900 x 2400 mm high double leaf door	1.00	No	16,200.00	16,200.00
	<i><u>45mm thick finished solid core flush doors BS459 part 2 faced both sides with external quality plywood and harwood lipping on all edges with fanlight.</u></i>				
C	Semi solid pannelled Door size 900 x 2400 mm overall single leaf door	11	No	6,500.00	71,500.00
	<u>Wrot mahogany frames and finished.</u>				
D	50 x 150mm frame with one labour plugged	56	Lm	1,200.00	67,320.00
E	50 x150mm transome with one labour plugged	10	Lm	1,000.00	10,000.00
F	15 x 15mm moulded quadrant.	56	Lm	120.00	6,720.00
G	15 x 32mm moulded architrave.	56	Lm	215.00	12,040.00
	<i>Prepare and apply one undercoat and two first grade PINOTEX finish paint as crown paints or other equal and approved on wood sufaces to:-</i>				
H	Doors: general surfaces	42.00	Sm	250.00	10,500.00
J	Surfaces over 100mm but not exceeding 200mm girth, frame, architrave and quadrants	56.00	Lm	60.00	3,360.00
	<i>Ironmongery-supply and fix English "Union" or other equal and approved ironmongery, matching screws to include a set of 3 keys</i>				
K	2 lever mortice lock complete with heavy duty proprietary brass handles.	11.00	No	2,500.00	27,500.00
L	Ditto but 3 levers	-	No	3,200.00	-
M	100 x 75mm brass butt ORDINARY hinges	16.50	Prs	400.00	6,600.00
N	38mm diameter rubber door stoppers cat no.8400	18.00	No	150.00	2,700.00
	TOTAL FOR DOORS CARRIED TO SUMMARY				320,840.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
A B C D E F G H	Element No.6				
	WINDOWS				
	Supply and fix the following purpose made steel casement windows:				
	fixed to concrete or blockwork with lugs plugged:iron mongery: bedded				
	and pointed all around in mastic: burglar proofing: inbuilt vent all as				
	per architect's details				
	Window size 2000x 1500mm high overall	12.00	No	15,000.00	180,000.00
	Window size 500x 750mm high overall	2.00	No	3,500.00	7,000.00
					-
	Louver block size 2000 x 1500mm high	8.00	No	5,000.00	40,000.00
	5mm clear sheet glass and glazing to metal with premium putty				
	in panes over 0.1 but not exceeding 0.5 square metres	36.00	SM	1,800.00	64,800.00
	5mm Obsecure sheet glass and glazing to metal with premium putty				
	in panes over 0.1 but not exceeding 0.5 square metres	1.00	Sm	2,100.00	2,100.00
	Pelmet boxes: prime grade hardwood, selected and kept clean				
	150 x 25mm top	24.00	Lm	350.00	8,400.00
	150 x 25mm fascia with two labours	24.00	Lm	350.00	8,400.00

	Extra for stopped ends	48.00	No	100.00	4,800.00
	carried to collection				315,500.00
Item	Description	Qty	Unit	Rate	Amount (Kshs)
	<i>General joinery: hardwood mahogany or equal and approved; selected and kept clean</i>				
A	20 x20mm quarter round plugged	24.00	Lm	120.00	2,880.00
	<u>Prepare and prime before fixing on wood</u>				
B	Bearers not exceeding 100mm girth	24.00	Lm	35.00	840.00
	<i>Prepare and apply knot coated surfaces ;prime and apply one undercoat and two gloss paint finishing coats on wood.</i>				
C	Pelmets, general surfaces	4.32	Sm	250.00	1,080.00
	<i>Prepare , touch up primer and apply one undercoat and two gloss paint finishing coats on metal.</i>				
D	Windows general surfaces both sides	37.00	SM	105.00	3,885.00
	Window cill				
E	Window cill bedded and jointed in cement sand mortar 1:3 pointed and matching	24.00	Lm	400.00	9,600.00
	<u>anodised brass coated</u>				
F	Heavy duty overlapping double curtain rails complete with rollers , clips and stopped ends.	24.00	Lm	800.00	19,200.00
	Carried to collection				37,485.00
	<u>Collection</u>				
	From page 8				315,500.00
	From page 9 above				37,485.00
	TOTAL FOR WINDOWS CARRIED TO SUMMARY				352,985.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	<i>Element No.7</i>				
	FINISHES				
	Floor finishes				
	<i>Cement and sand 1:3 screed to concrete surfaces in</i>				
A	32mm thick floor finished to receive tile finish	433.00	Sm	300.00	129,900.00
Item	Description	Qty	Unit	Rate	Amount (Kshs)
	<i>400x 400x 8mm thick approved rustic plain ceramic floor tiles to regular pattern, colour to architects scheme grouting joints in matching cement in:-</i>				
	<u><i>Prepare surfaces and apply undercoat and two finishing coats silk vinyl emulsion paint as "Crown paints" or other equal and approved.</i></u>	26.00	Sm	1,500.00	39,000.00
A	100mm high skirting Walls and concrete internally	100.00 1,016.00	Lm Sm	250.00 250.00	25,000.00 254,000.00
	<i>Internal wall finishes</i> <i>External wall finishes</i> <i>15mm thick first coat of cement sand/lime lime/ceemnt slurry</i> <i>1:2:9:3mm second coat of cement/lime putty 1:1:6 steel trowelled on</i> <i>Backing 20mm thick cement sand 1:4 on masonry and concrete, wood masonry, or concrete to:-</i> <i>float finished to:-</i>				
B	Walls internally Gable wall and concrete surfaces	1,016.00 28.00	SM Sm	250.00 250.00	254,000.00 7,000.00
C	10mm thick backing to receive ceramic tiles Pointing to masonry walling externally	20.00 180.00	SM SM	250.00 250.00	5,000.00 45,000.00
	<i>250 x 300 x 6mm coloured ceramic wall tiles; approved colour; glazed;</i> <u><i>Prepare surfaces and apply undercoat and two finishing coats silk vinyl to regular pattern; bedded and jointed in cement sand mortar 1:4 emulsion paint as "Crown paints" or other equal and approved.</i></u> <i>grouting with matching coloured cement including plastic edge strip to all edges; Colour to architect's scheme.</i>				
D	Plastered beams, columns, walls externally	28.00	Sm	250.00	7,000.00
E	To walls Ceiling finishes	20.00 137.00	Sm SM	1,500.00 250.00	30,000.00 34,250.00
	<u><i>Plaster 12mm first coat of cement/lime putty sand 1:2:9; 3mm second coat of cement/lime putty/ sand 1:1:6 on masonry wall or concrete to:-</i></u>				
F	Soffits internally	137.00	SM	400.00	54,800.00
	<u><i>Prepare surfaces and apply undercoat and two finishing coats silk vinyl emulsion paint as "Crown paints" or other equal and approved.</i></u>				
G	Soffits of suspended ceiling	137.00	Sm	250.00	34,250.00
	Carried to collection				436,300.00

B					
C					
D					
E					
F					
	Carried to collection				482,900.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Staircase finishes				
	Cement and sand 1:3 screed				
A	32mm thick to landings	6.00	Sm	300.00	1,800.00
B	Ditto 250mm wide treads	24.00	Lm	100.00	2,400.00
C	Ditto to 150mm risers	24.00	Lm	60.00	1,440.00
	8mm thick Granito polished floor tiles from tile and carpet				
D	Landings	6.00	SM	1,200.00	7,200.00
E	Ditto to 250mm treads	24.00	Lm	250.00	6,000.00
F	Ditto 150mm risers	24.00	Lm	225.00	5,400.00
G	Interlocking tiles to the open to air restaurant for preventing water seepage	6.00	SM	1,800.00	10,800.00
	<u>Plaster 9mm first coat of cement/lime putty/sand 1:2:9; 3mm second coat of cement/lime putty/sand 1:1:6 steel trowelled on masonry or concrete to:-</u>				
H	Soffits of staircase internally	6.00	SM	250.00	1,500.00
I	Ditto edges of landings over 75mm but not exceeding 150mm high	12.00	Lm	60.00	720.00
J	Ditto edges of stairs	12.00	Lm	60.00	720.00
	<u>Prepare surfaces and apply undercoat and two finishing coats silk vinyl emulsion paint as "Crown paints" or other equal and approved.</u>				
K	soffits	6.00	Sm	250.00	1,500.00
L	Ditto edges over 75 but not exceeding 150mm high	12.00	Lm	52.50	630.00
M	Ditto to edges of stair	12.00	LM	52.50	630.00
	Balustrading				
	Mild steel one coat red oxide primer before erection				
	<i>900mm high mild steel balustrading comprising 25 x 25 x 2mm hollow sections balusters at 150mm centers 50 x 25 x 2mm hand rail: 50 x 25 x 3mm thick bottom rail welded on, balusters set in to concrete after every alternate tread</i>				
N	To staircase	6.00	LM	2,500.00	15,000.00
	Carried to collection				55,740.00

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	COLLECTION				
	From page 10				482,900.00
	From page 11				436,300.00
	From Page 12				55,740.00
	TOTAL FOR FINISHES CARRIED TO SUMMARY				974,940.00

SUMMARY

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	SUMMARY	Page			
1	PAGE	3			2,115,302.50
2	SUBSTRUCTURE	4			704,440.00
3	S WALLING	5			1,281,662.00
4	SUPERSTRUCTURE	6			291,250.00
5	CONCRETE ROOF	7			320,840.00
6	DOOR	9			352,985.00
7	S	13			974,940.00
	WIND				
	OWS				
	FINISH				
	ES				
	TOTAL BUILDERS WORK CARRIED TO GRAND SUMMARY				6,041,419.50
Item	Description	Qty	Unit	Rate	Amount (Kshs)

PROVISIONAL SUMS					
PRIME COST AND PROVISIONAL SUMS					
<i>P.C sums for works to be executed by main contractor or nominated subcontractors.</i>					
A	Provide a prime cost sum for electrical installations		Item		181,242.59
B	Provide a prime cost sum for plumbing and drainage installations		Item		302,070.98
C	Installation and commissioning of 1 No potato chips vegetable cutter model: Power: Voltage: disc diameter: productivity: size:- ideal for cutting chips, slicing shredding, grating etc MFC23 0.25kW 220V 204mm, 120kgs/h(275x 580 x 455mm CODE CT/274 stainless steel material	1.00	No	102,000.00	102,000.00
D	Digital platform scales A12.300Kg x 50G:TCS-300Kgs	2.00	No	25,000.00	50,000.00
E	price scale voltage 240V rating power 10Va max weight2Kgs division 100g	2.00	No	2,500.00	5,000.00
F	T scale model T-28-28.15KG BY1GM	1.00	No	450,000.00	450,000.00
G	Posho mill crusher fitted with hopper 800kg/Hr, 7.5kW 3hp motor, 1440Rpm low speed food grade	5.00	No	45,000.00	225,000.00
	Light gauge aluminum framed Greenhouse size 5000 x 2000mm wide.				-
					-
					-
					-
					-
TOTAL FOR P.C AND PROVISIONAL SUMS CARRIED TO SUMMARY					1,315,313.56

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	SUMMARY				
1	Preliminaries 3% of				220,701.99
2	(2+3) Main Works				6,041,419.50
3	Provisional and Prime cost sums				1,315,313.56
	SUB-TOTAL				7,577,435.05
4	Add 5% of sub for contingency			Kshs:	378,871.75
5					
	TOTAL COST SUM VAT INCL.				7,956,306.80

Amount in Words

CONTRACTOR.....

EMPLOYER.....

NAME.....

NAME.....

ADDRESS.....

ADDRESS.....

DATE.....MONTH.....2020

DATE..... MONTH.....2020

SIGN.....

SIGN.....

WITNESS.....

WITNESS.....

SIGN.....

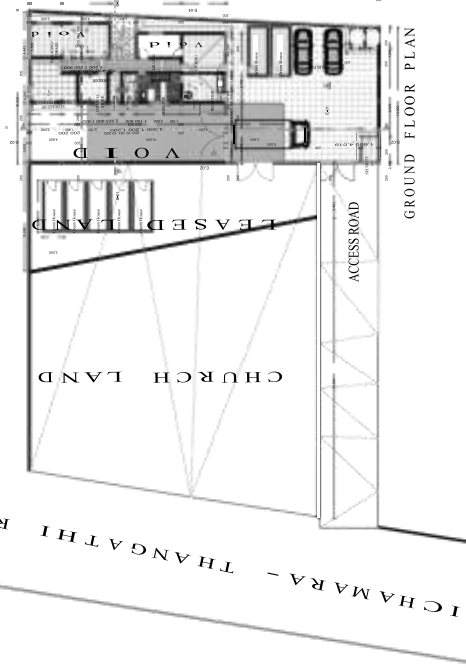
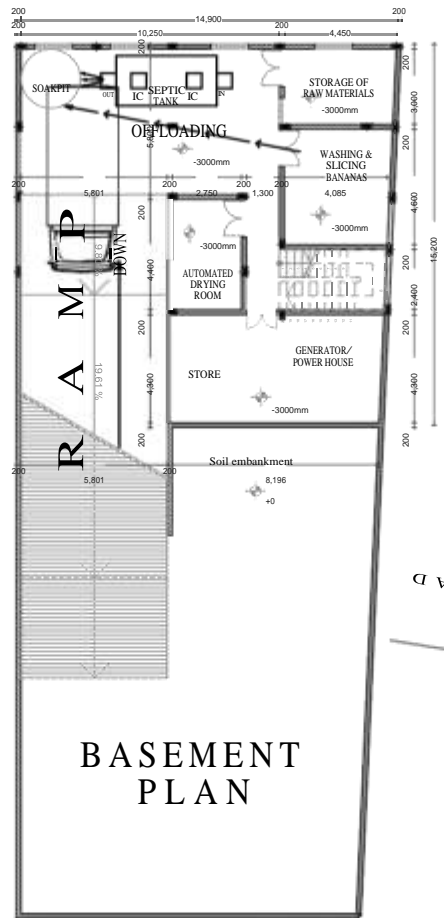
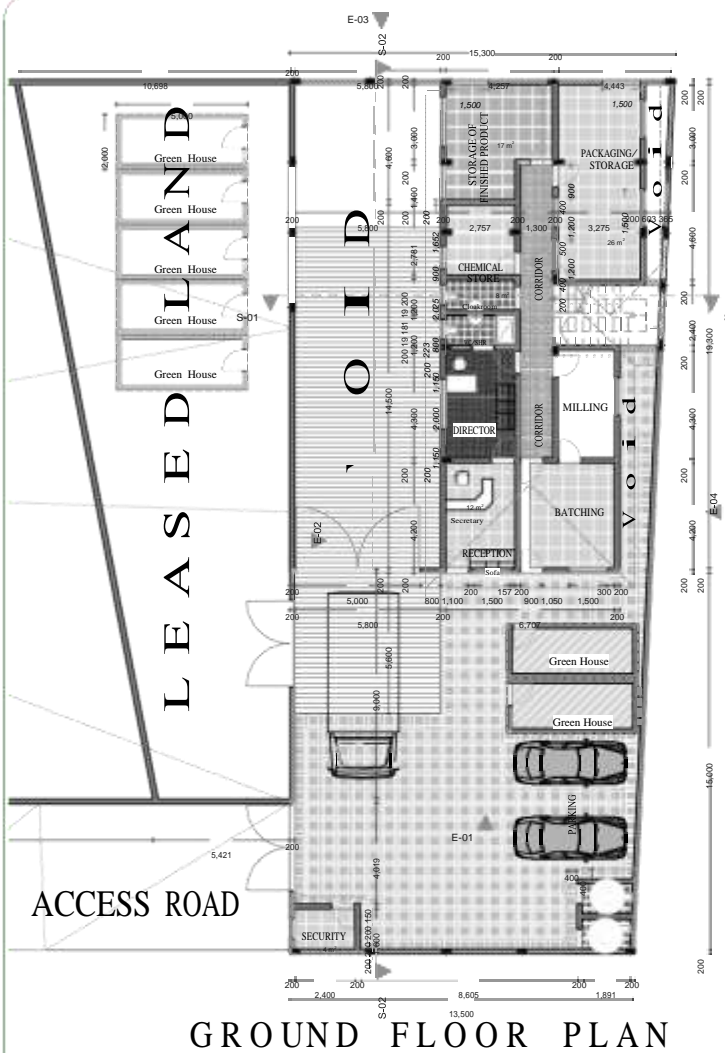
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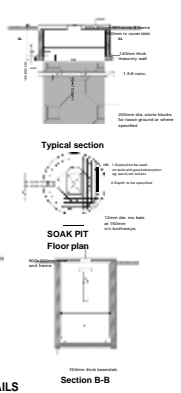
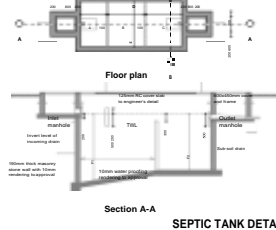
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GRAND SUMMARY PAGE

Annex 9: Construction Designs Layout



TYPE	CAPACITY NO. OF PERSONS	DEVELOPING INTERNAL (SIZES)	DIMENSIONS IN MM							
LEVEL			A	B	C	D	E	F		
A	3000	10	2	800	1000	1500	3000	800	1200	1450
B	8000	20	2	800	1400	1200	3000	1450	1500	1450
C	8000	30	2	800	1400	1000	3000	1800	1500	1450
D	53000	40	2	800	1600	1450	4000	2000	1500	1300
E	15000	50	2	800	1500	1400	4000	2400	1500	1300
F	22500	100	1.5	800	2000	1800	5000	3000	1850	1500
G	40000	200	1.5	800	2500	2800	6000	3000	2000	1500
H	67500	300	1.5	800	3000	3800	11600	4000	2360	1500
I	90000	400	1.5	800	3500	4400	13160	4800	2380	1500



- NOTES**
- Dimensions are in millimetres and should be read from the drawing and not scaled. Any discrepancies noted should be reported to the project architect before work commences.
 - All structural works to structural engineer's details.
 - 3/4" pvf denotes permanent ventilation and shall be provided at all positions shown on the drawing.
 - All drain pipes passing under buildings to be encased in 150mm concrete surround.
 - All walls less than 200mm thick to have hoop iron reinforcement at alternate courses.
 - 6.1' denotes inspection chamber.
 7. RC denotes reinforced concrete.
 8. 1'p.c denotes one layer of bituminous felt to be provided under all walls 150mm above G. L.
 9. All construction work is to comply with the latest KBS standard codes of practice, local Authority By-Laws and Fire regulations.
 - Water meters to be 300mm above G. L.
 - Provide two rows of 600x600x60mm green concrete paving slabs around the building unless otherwise shown/indicated.
 - All levels shown are finished levels unless otherwise stated.
 - All surface beds to be cast on well compacted and well consolidated.
 - Depth of foundation trenches to be minimum 600mm below reduced ground level.
 - All pipes and services to be minimum 450mm below reduced ground level.
 - This drawing is protected under the Copyright Act, and cannot be used or reproduced in part or in whole without the authors consent.
- FIRE INSTALLATION**
- Reserve 1130 litres water tank with automatic booster pump.
 - Provide 2x30m long hydraulic hose reels each floor.
 - Provide 2x0 litres water CO2 fire extinguisher each floor.
 - Install emergency lighting systems.
 - Provide 1x4kg CO2 fire extinguishers, kitchen pails fire blankets.
 - Install manual electric break glass fire alarm system.

PROJECT

PROPOSED FOOD PROCESSING FACTORY ON PLOT L.R NO 871 GITITHI, KIHARO OFF ICHAMARA THANGATHI ROAD MUKURWEINI-NYERI COUNTY.

CLIENT

NATURALWAYS FOOD SUPPLIEMENTS LTD.

CONSULTANTS

JADA BUILDERS & SUPPLIES
P.O BOX 813-00200 NAIROBI
CELL: 0724 629 316
Email: jadabuilders2014@gmail.com

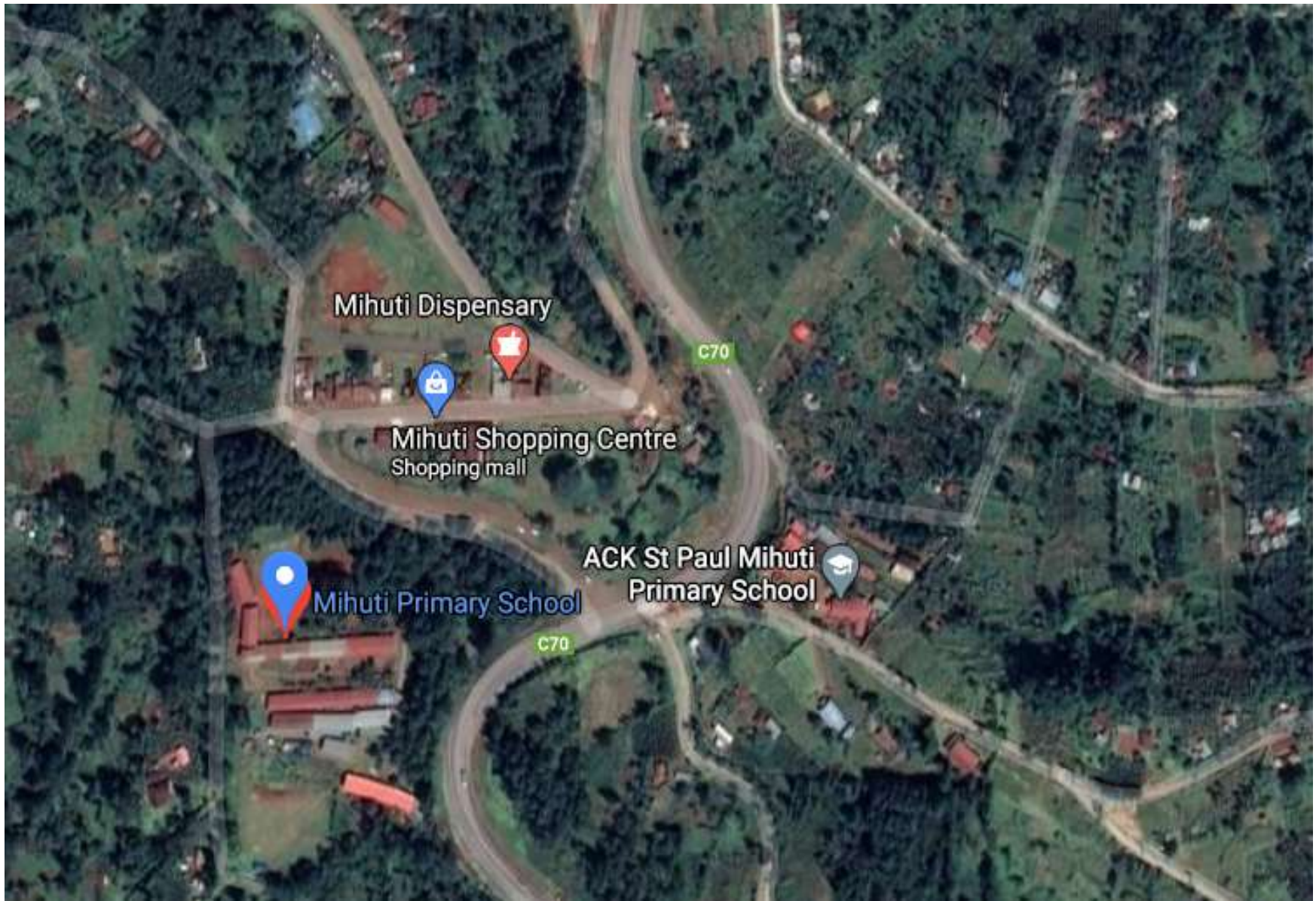
TITLE

BASEMENT, GROUND FLOOR PLANS SITE PLAN AND SEPTIC TANK.

DATE DEC 5 2020
SCALE 1:250, 1:100
DEALT JJK
CONTACT 0724 629 316 0735 018112

DRG NO. FS-01

Annex 10: Map for the Proposed Site



Annex 11: List of Attendance during the CPP meeting at Kihuti Chief's Camp

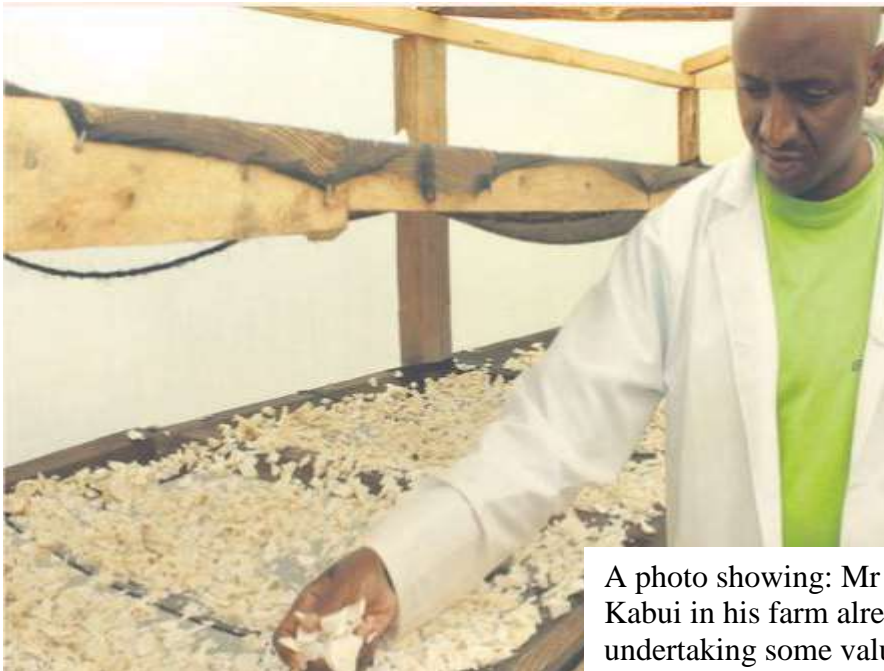
Consultative meeting for Banana Producers S.H.G.
at Kihuti Hort. Chief's office on 03/04/2021

	NAME	ID NO.	GENDER	AGE	CONTACT	SIGN
1.	David Wachira Kibera	17319067	M	40	0728271570	
2.	Wilfred Waichigo Mwangi	22440494	M	38	0713 699590	
3.	Titus Mwangi Gatali	1425728	M	35	0713149366	
4.	Jackson K Mwangi	9856575	M	43	0704863683	
5.	Elias Mwangi Gatali	0236106	M	55	0726274728	
6.	Catherine M Gathendu	10243985	F	38	0729034375	Catherine
7.	Joyce Njoki chege	12775730	F	28	0707458359	
8.	Jesee Maina Waita	10503362	M	40	0720930185	Jesee
9.	Daniel Maina Ndegwa	20722785	M	39	—	
10.	Stephen M Ndirangu	7858571	M	—	0711447518	
11.	Douglas M Waita	1865776	M	70	0722323660	
12.	Symon Maina Kariuki	3394995	M	44	—	Symon
13.	Ezekiel W Wamai	0331613	M	75	0722577782	Ezekiel
14.	Mutahi Mwai Kirima	4956251	M	65	0716371339	Mutahi
15.	Lucy Njoki Maina	29090429	F	40	—	Lucy
16.	Lucy Wangari Mutisi	3603374	F	35	—	Lucy
17.	Farine Muhavi Kimani	25129332	F	38	—	Farine
18.	Simon Maina Gatali	11129526	M	40	0710521469	
19.	Johnson Gichigi	3094247	M	69	0728124615	Johnson
20.	Julius M Waemba	20706899	M	42	074680584	Julius
21.	Peterson M Gichungu	11074514	M	40	0719425432	Peterson
22.	William M Waemba	3963535	M	52	0704098677	William
23.	Simon Maina Gatali	6830594	M	55	0724409839	Simon
24.	Nelson M Mwangi	31726491	M	40	—	Nelson
25.	Bernard Mwangi Kanyi	1821442	M	51	0721246345	Bernard
26.	Nicolas Gungu Mwangi	29977125	M	40	—	Nicolas
27.	Cosmas M Gatali	5558388	M	35	0720835273	Cosmas
28.	Francis W Mogwi	9717288	F	50	0720251925	Francis
29.	Beatrice W Muturi	5558055	F	50	0720615604	Beatrice
30.	Patrick Mwach	25450937	M	38	0725318409	Patrick
31.	Lucy Mumbi M	13727366	F	30	0720565763	Lucy
32.	Pius M Njwaita	—	M	40	0702865503	Pius
33.	Glady W. Wamun	10562531	F	38	0736271800	Glady

Annex 12: Public consultations Photo Gallery



During Consultative meetings, the lead expert collects views from Giathugu banana producer Self-help group, in Kihuti shopping center.



A photo showing: Mr Reuben Kabui in his farm already undertaking some value addition of banana using solar drier in his semi-permanent cottage



A clip; showing rich green banana crop in the area with potential to sustain the project

Annex 13: Chance Finds Procedure

1. Purpose of chance find procedure

The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation.

2. Chance find procedures will be used as follows:

If the contractor for the proposed Banana Value addition project discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery, tomb and/or individual graves during excavation or construction, the contractor shall:

- Stop the construction activities in the area of the chance find.
- Delineate the discovered site or area.
- Secure the site to prevent any damage or loss of removable objects. in cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the ministry of sports, culture and the arts take over.
- Notify the supervisory engineer who in turn will notify the responsible local authorities and the ministry of sports, culture and the arts immediately (less than 24 hours).
- Contact the responsible local authorities and the ministry of sports, culture and the arts who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. this would require a preliminary evaluation of the findings to be performed by the archaeologists of the relevant ministry of sports, culture and the arts (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values.
- Ensure that decisions on how to handle the finding be taken by the responsible authorities and the ministry of sports, culture and the arts. this could include changes in the layout (such as when the finding is an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage.
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the ministry of sports, culture and the arts concerning the safeguard of the heritage and authorization for construction work to resume.

Annex 14: Respondent Filled questionnaires

ANNEX 1: BLANK QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL ASSESSMENT QUESTIONNAIRE

PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT CAP 387, AND SUBSIDIARIES 2015 & 2019 REVISED REGULATIONS ON ENVIRONMENTAL IMPACTS ASSESSMENT AND AUDIT, REQUIRES PUBLIC PARTICIPATION AND CONSULTATION BEFORE COMMENCEMENT OF ANY DEVELOPMENT WITH POSSIBLE ENVIRONMENTAL AND SOCIAL IMPACTS (AS SCHEDULED IN THE ACT).

THE PROPOSED BANANA DRIER/FOOD PROCESSING DEVELOPMENT TO BE LOCATED, IN KIHUTI, MIHUTI SUB- LOCATION, GITHII LOCATION, MUKURWEINI CENTRAL WARD, IN MUKURWEINI, NYERI-COUNTY. THE PROJECT IS FUNDED BY KCSAP PROJECT THROUGH THE G.O.K AND WORLD BANK COMMUNITY GRANT.

PLEASE PROVIDE YOUR OPINION WITH REGARD TO ANY POSSIBLE NEGATIVE IMPACTS.

Name Rhinos Kinyua ID. 16012963

The information will be treated with all the confidentiality and will only be used to assist the World Bank and Nema in decision-making during review of the ESIA report and approval of the project.

A) Are there negative impacts (harmful) from the proposed project/s?
YES NO (please tick accordingly)

B) IF Yes kindly list them below:

- i. Generation of Banana peels
- ii. Waste washing water
- iii. _____
- iv. _____

B) How can they be minimized/mitigated?

- 1. From the peels to go to cattle feeds
- 2. Use separate wash pits to water
- 3. Drainy water after chopping of potatoes
- 4. _____

C) RESPONDENT RECOMMENDATIONS:

1. In your opinion, do you think the project should be allowed to continue and be licenced by NEMA? YES NO (please tick accordingly)

2. If NO, Please Indicate Your Major Reasons and the Wayforward/Alternatives below:

- v. From the center will be good for
- vi. employment of Mukurweini
- vii. people
- viii. _____

Thank You for Participation

ANNEX 1: BLANK QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL ASSESSMENT QUESTIONNAIRE

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PLEASE PROVIDE YOUR OPINION WITH REGARD TO ANY POSSIBLE NEGATIVE IMPACTS.

Name ESTHER WAMBURAA KAMAU ID. 20426399

The information will be treated with all the confidentiality and will only be used to assist the World Bank and Nema in decision-making during review of the ESIA report and approval of the project.

A) Are there negative impacts (harmful) from the proposed project/s?
YES _____ NO (please tick accordingly)

B) IF Yes kindly list them below:

- i. N/A
- ii. N/A
- iii.
- iv.

B) How can they be minimized/mitigated?

- 1.
- 2.
- 3. N/A
- 4.

C) RESPONDENT RECOMMENDATIONS:

1. In your opinion, do you think the project should be allowed to continue and be licenced by NEMA? YES NO (please tick accordingly)

2. If NO, Please Indicate Your Major Reasons and the Wayforward/Alternatives below;

- v.
- vi.
- vii. N/A
- viii.

Thank You for Participation

ANNEX 1: BLANK QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL ASSESSMENT QUESTIONNAIRE

PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT CAP 387, AND SUBSIDIARIES 2015 & 2019 REVISED REGULATIONS ON ENVIRONMENTAL IMPACTS ASSESSMENT AND AUDIT, REQUIRES PUBLIC PARTICIPATION AND CONSULTATION BEFORE COMMENCEMENT OF ANY DEVELOPMENT WITH POSSIBLE ENVIRONMENTAL AND SOCIAL IMPACTS (AS SCHEDULED IN THE ACT).

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PLEASE PROVIDE YOUR OPINION WITH REGARD TO ANY POSSIBLE NEGATIVE IMPACTS.

Name DES KIONJIRA ID. 23252501

The information will be treated with all the confidentiality and will only be used to assist the World Bank and Nema in decision-making during review of the ESIA report and approval of the project.

A) Are there negative impacts (harmful) from the proposed project/s?
YES NO (please tick accordingly)

B) IF Yes kindly list them below:

- i. CAN CREATE DUST DURING CONSTRUCTION
- ii. _____
- iii. _____
- iv. _____

B) How can they be minimized/mitigated?

- 1. COMPACTING OF THE COMPOUND
- 2. _____
- 3. _____
- 4. _____

C) RESPONDENT RECOMMENDATIONS:

1. In your opinion, do you think the project should be allowed to continue and be licenced by NEMA? YES NO (please tick accordingly)

2. If NO, Please Indicate Your Major Reasons and the Wayforward/Alternatives below;

- v. WILL PRESENT ROTTING OF BANANAS
- vi. _____
- vii. _____
- viii. _____

Thank You for Participation

ANNEX 1: BLANK QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL ASSESSMENT QUESTIONNAIRE

PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT CAP 387, AND SUBSIDIARIES 2015 & 2019 REVISED REGULATIONS ON ENVIRONMENTAL IMPACTS ASSESSMENT AND AUDIT, REQUIRES PUBLIC PARTICIPATION AND CONSULTATION BEFORE COMMENCEMENT OF ANY DEVELOPMENT WITH POSSIBLE ENVIRONMENTAL AND SOCIAL IMPACTS (AS SCHEDULED IN THE ACT).

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PLEASE PROVIDE YOUR OPINION WITH REGARD TO ANY POSSIBLE NEGATIVE IMPACTS.

Name Da Muel Dachira ID. 22002406

The information will be treated with all the confidentiality and will only be used to assist the World Bank and Nema in decision-making during review of the ESIA report and approval of the project.

A) Are there negative impacts (harmful) from the proposed project/s?
YES _____ NO (please tick accordingly)

B) IF Yes kindly list them below:

- i. NONE
- ii. _____
- iii. _____
- iv. _____

B) How can they be minimized/mitigated?

- 1. NONE
- 2. _____
- 3. _____
- 4. _____

C) RESPONDENT RECOMMENDATIONS:

1. In your opinion, do you think the project should be allowed to continue and be licenced by NEMA? YES NO _____ (please tick accordingly)

2. If NO, Please Indicate Your Major Reasons and the Wayforward/Alternatives below:

- v. IS A GOOD PROJECT TO UPGRADE THE
- vi. WHOLE COMMUNITY AND YOUTHS
- vii. _____
- viii. _____

Thank You for Participation

ANNEX 1: BLANK QUESTIONNAIRE

ENVIRONMENTAL AND SOCIAL ASSESSMENT QUESTIONNAIRE

PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT CAP 387, AND SUBSIDIARIES 2015 & 2019 REVISED REGULATIONS ON ENVIRONMENTAL IMPACTS ASSESSMENT AND AUDIT, REQUIRES PUBLIC PARTICIPATION AND CONSULTATION BEFORE COMMENCEMENT OF ANY DEVELOPMENT WITH POSSIBLE ENVIRONMENTAL AND SOCIAL IMPACTS (AS SCHEDULED IN THE ACT).

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PLEASE PROVIDE YOUR OPINION WITH REGARD TO ANY POSSIBLE NEGATIVE IMPACTS.

Name DORALIS WANJIAU ID. 24025426

The information will be treated with all the confidentiality and will only be used to assist the World Bank and Nema in decision-making during review of the ESIA report and approval of the project.

A) Are there negative impacts (harmful) from the proposed project/s?
YES NO (please tick accordingly)

B) IF Yes kindly list them below:

- i. Noise Pollution
- ii. Soil Pollution
- iii. _____
- iv. _____

B) How can they be minimized/mitigated?

- 1. Can be minimized by proper dressing during construction
- 2. Can be minimized by planting other crops to sustain the soil
- 3. _____
- 4. _____

C) RESPONDENT RECOMMENDATIONS:

1. In your opinion, do you think the project should be allowed to continue and be licenced by NEMA? YES NO (please tick accordingly)

2. IF NO, Please Indicate Your Major Reasons and the Wayforward/Alternatives below:

- v. It will reduce the drying of bananas
- vi. _____
- vii. _____
- viii. _____

Thank You for Participation

Annex 15: Minutes of the Meeting of the Self Help Group

Mihuti Banana Producers / Stakeholders

Minutes for Banana Stakeholders on 03/04/2021 at Mihuti
Asst. Chief's office

The meeting started with a word of prayers from Gladys Wambui at 10.55 Am.

- Agenda
- ① Reading of the previous meeting minutes
 - ② Banana value addition
 - ③ Marketing of Bananas
 - ④ Waste management from Banana processing Plant
 - ⑤ AOB

Min 1/03/04/2021 - Reading of previous minutes. They were adopted to be true & read

The Acting Chairman called the meeting into order and requested the participants for self introduction and later briefed them on the objectives of the meeting.

Min 2/03/04/2021 - Banana Value Addition

The Chairman informed the members on the need for value addition of Agricultural produce in order to reduce post harvest losses hence increase price of Bananas at the area; Creation of employment and increase of income for local banana farmers

Min 3/03/04/2021 - Marketing of Bananas

Members were informed that for sustainability of the banana enterprise, marketing have to be streamlined in order to eliminate the brokers that have exploited the farmers & by either having/ negotiate contract banana production the proponent (Natural Ways Food Supplement)

Min 4/04/2021 - Management of Solid Waste - The proponent informed the members that wastes (degradable) will be used to make Compost Manure, or can be shredded and fed to livestock or can be used as Mulch in

a banana orchard.

Min/25/04/2021 A to B

The Chairman informed participants that Covid 19 infection rate was high in the county and requested them to abide by the Ministry of Health guidelines. (Wearing of mask properly, Wash hands with Soap or recommended Sanitizers and keep distance of 1.5m)

Members were also informed that people ~~with~~ who are over 58 yrs old should visit Sub-County Hospital at Mwachugu and get AstraZenca vaccine jab as they are prone to the virus than the younger generation.

Having no other business the meeting ended with a word of prayer from Mrs Doris Wangiri at 3.15 Pm

Prepared by
David Maina
Secretary

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Cell: +254 727 742 838



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Consultative meeting for Banana Producers S.H.G.
at Mchuti Asst. Chief's office on 03/04/2021

	NAME	ID NO.	GENDER	AGE	CONTACT	SIGN
1	David Wachira Kibera	11319067	M	40	0728271570	
2	Wilfred Waichigo Mwangi	22440494	M	38	0713 699590	
3	Titus Mwangi Gatali	1425728	M	50	0713 149 366	
4	Jackson K Mwangi	9856575	M	43	0704863683	
5	Elias Mwangi Gatali	0236106	M	55	0726274728	
6	Catherine M Gathendi	10243985	F	38	0729 034375	Catherine
7	Joyce Njoki chege	12775730	F	28	0707458359	
8	Jessee Maina Waita	10503362	M	40	0720930185	
9	Daniel Maina Ndegwa	20722785	M	39	—	
10	Stephene M Ndirangu	7858571	M		0711447518	
11	Douglas M Waita	1865776	M	70	0722 323660	
12	Symon Maina Kariki	3394995	M	44	—	Symon
13	Ezekiel W Wamai	0331613	M	75	0722577782	Ezekiel
14	Mutahi Mwai Kirima	4956251	M	65	0716371339	
15	Lucy Njoki Maina	29090429	F	40	—	Lucy
16	Lucy Wangari Muthici	3603374	F	35	—	Lucy
17	Farine Muhavi Kimani	25129332	F	38	—	
18	Simon Maina Gatali	1129526	M	40	0710521469	
19	Johnson Gichigi	3094247	M	69	0728724615	Johnson
20	Julius M Waemba	20706899	M	42	074680584	
21	Peterson M Gichungu	11074514	M	40	0719425432	Peterson
22	William M Waemba	3963535	M	52	0704098677	
23	Simon Maina Gatali	6830594	M	55	0724409839	Simon
24	Nelson M Mwaga	31726491	M	40	—	
25	Bernard Mwangi Kanyo	1821442	M	51	0721246345	
26	Nicolas Longu Mwangi	29977125	M	40	—	
27	Cosmas M Gatali	5558388	M	35	0720835273	
28	Francis W Mogwi	9117288	F	50	0720251925	
29	Beatrice W Muturi	5558055	F	50	0720615604	
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32	Pius M Njwaita	—	M	40	0702865603	