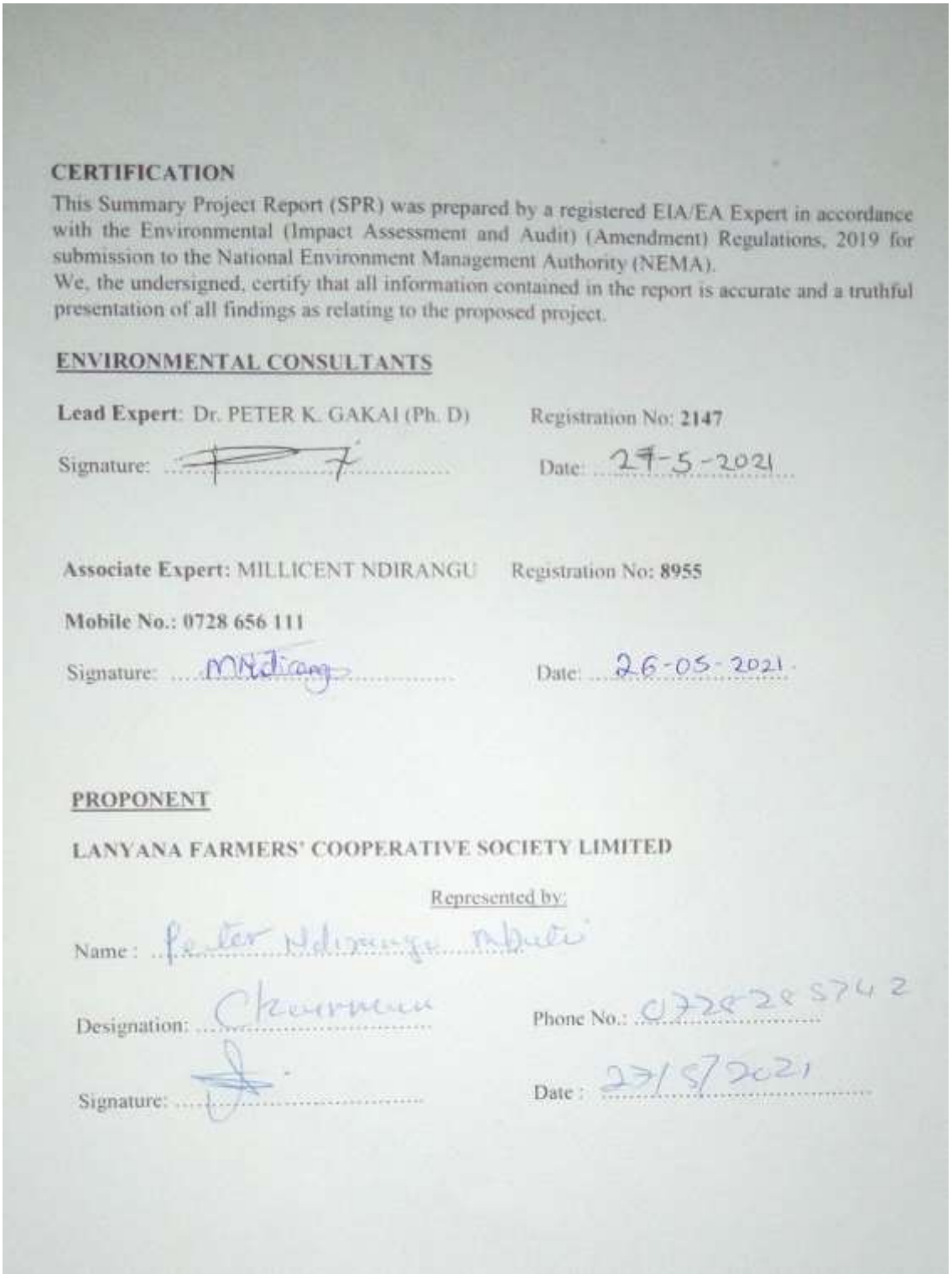
SUMMARY PROJECT REPORT

FOR THE PROPOSED POTATO STORAGE FACILITY FOR LANYANA FARMERS' COOPERATIVE SOCIETY LIMITED ON PLOT NO. NYANDARUA/ MURUAI/ 2573, NYANDARUA COUNTY.
LATITUDE 0.11436^0 N AND **LONGITUDE 36.45716^0 E**

PROPONENT	**LEAD EXPERT**
LANYANA FARMERS' COOPERATIVE SOCIETY LIMITED P.O BOX: 98-20306 NDARAGWA MOBILE c/o: 0728 285 742	**Dr. PETER KING'ORI GAKAI (Ph. D)** P.O BOX: 6871-00200 NAIROBI **NEMA REGISTRATION NO: 2147** MOBILE c/o: 0728 656 111

SEPTEMBER 2021

CERTIFICATION



CERTIFICATION

This Summary Project Report (SPR) was prepared by a registered EIA/EA Expert in accordance with the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 for submission to the National Environment Management Authority (NEMA).
We, the undersigned, certify that all information contained in the report is accurate and a truthful presentation of all findings as relating to the proposed project.

ENVIRONMENTAL CONSULTANTS

Lead Expert: Dr. PETER K. GAKAI (Ph. D) Registration No: **2147**

Signature: ..... Date: 27-5-2021

Associate Expert: MILLICENT NDIRANGU Registration No: **8955**

Mobile No.: 0728 656 111

Signature: MNdirang Date: 26-05-2021

PROPONENT

LANYANA FARMERS' COOPERATIVE SOCIETY LIMITED

Represented by:

Name : Peter Ndirangu Mbuti

Designation: Chairman Phone No.: 0728285742

Signature: ..... Date : 27/5/2021

TABLE OF CONTENTS

ABBREVIATIONS & ACRONYMS

^{0}	Degrees (A unit of measuring latitudes and longitudes)
^{0}C	Degrees Celsius (A unit of measuring temperature)
^{0}E	Degrees East
^{0}N	Degrees North
BQ	Bills of Quantity
CAP	Chapter
CBO	Community Based Organization
COVID 19	Corona Virus Disease 2019
DM	David Mwichuri
EA	Environmental Audit
EIA	Environnemental Impact Assessment
EMCA	Environmental Management and Co-Ordination Act
ESM & MP	Environmental and Social Management Monitoring Plan
GDP	Gross Domestic Product
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
IPMP	Integrated Pesticide Management Plan
KCSAP	Kenya Climate Smart Agriculture Project
KEBS	Kenya Bureau of Standards
KM	Kilo Meter
KM^2	Kilo Meter Squared
M	Meter
MM	Millimetre
MoU	Memorandum of Understanding
NEMA	National Environment Management Authority
OSHA	Occupational Safety and Health Act
PMC	Project Management Committee
P. O	Post Office
PPE	Personal Protective Equipment
SEA	Sexual Exploitation and Abuse
SPR	Summary Project Report
TOR	Terms of Reference
VAT	Value Added Tax

EXECUTIVE SUMMARY

This summary project report has been undertaken to fulfil a legal requirement as outlined in section 58-69 of the EMCA and part II of the Environmental Impact Assessment and Audit Regulations.

The proposed project site is within Subuku area, Ndaragwa ward, Kanyagia location and Muruai Sub-location, Ndaragwa Sub- County, Nyandarua County. Nyandarua County is one of the 24 counties in Kenya that is benefiting from World Bank Agricultural Support under the Kenya Climate Smart Agriculture Project (KCSAP). KCSAP activities in the proposed project area include funding of micro-project for commercial peas, dairy, indigenous chicken and irish potato value chains. The proposed project falls in the irish potato value chain, since it involves development of an Irish potato storage facility, for Lanyana Farmers' Cooperative Society, which comprise a total membership of 525, of which 225 are male and 300 are female.

The specific objectives of this proposed project are; to provide an Irish potato storage facility for the farmers' produce, hence increase the potato shelf life awaiting sale; to ensure farmers benefit from better prices of their produce during sale and to protect farmers from exploitative middlemen. The SPR was as a result of the Legal Notice 31 of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 which identifies the proposed project as low risk, thus requiring only SPR. The approach and methodology used to carry out the SPR included screening, scoping, visiting the proposed site, physical observation, field data collection, public consultation, literature review and desk review.

The proposed development will consist of an office block, changing room, sorting and grading shed, weighing and packaging shed, ambient temperature store, septic tank/soak pit sewage system, water tank, ablution block and a waste disposal area. The proposed project budget is approximated at 16,000,000 Kenya shilling. The estimated ESM & MP implementation cost for the proposed project through its different development phases is 1,200,000.

The proposed project is aimed at providing the cooperative society members with a reliable storage facility for their potato produce awaiting improvement of market prices after harvesting. The proposed storage facility would greatly relieve farmers the pressure to sell their produce promptly upon harvesting and would also maintain quality of the produce over the storage period. In addition, the proposed project will have other positive impacts such as: provision of a reliable potato supply to the processors; creation of direct and indirect employment opportunities during the construction and operation phases; contract farming opportunities with the potato processors; increased revenue to the county government, increased income to the community members during operation; improved infrastructural development within the area; improved food security within the project area and country at large; improved security within the project area and improved aesthetic value of the project site among others.

Public participation for this proposed project was accomplished through holding a public meeting on 9th February 2021within the proposed project site grounds, where public views were obtained by the use of public participation questionnaires. The exercise was carried out during a season where public gatherings were restricted following the prevailing COVID-19 pandemic. A

total of 33 members were present. These included 31 farmers, one cooperative officer and the area assistance chief, where 20 were male and 13 were female. During the exercise, all COVID-19 proposed prevention measures were adhered to. The investigation examined the potential impacts of the project on the immediate surroundings with due regard to construction and operation phases. The negative environmental impacts raised include: increased solid waste disposal especially after sorting/ grading process, increased chances of air pollution from any rotten potatoes in the dumping site and increased chances of insects (houseflies) in the store in case of rotten stored potatoes/ around the disposal site. To mitigate these, the project management committee to be elected should be innovative enough on how to utilise their waste products like disposing the rotten potatoes to potential users for making organic/ compost manure and damaged potatoes to pig farmers for use as feeds at a cost.

The negative social impacts anticipated include: conflicts among the society members due to potato rotting during storage hence reduced quantities available for sale; increased chances of conflicts on payment procedures if not agreed upon by the members before implementation**; c**hallenges of storage space competition upon increased product yields by the farmers and disagreements may arise from members in case of delayed payments upon sale. The following should be done to mitigate the anticipated negative social impacts: a responsible project management committee should be instituted to help manage any conflicts; by-laws should be formulated to help regulate members conduct throughout the proposed project life; the project management committee should ensure farmers' products are well labelled and stored separately to avoid and minimise disputes in case of damage during storage/ prior sale; sorting of the produce should be done keenly and properly to avoid/ reduce chances of rotting; the store should be constructed to accommodate a larger capacity even for the future upon increased produce and by-laws on payment should be formulated

The proposed development will have both positive and negative impacts on both the physical and socio-economic environment of the project area and Kenya at large. Some of the negative environmental impacts anticipated include: increased solid waste generation, soil degradation and fire related issues. Negative social impacts include: increased chances of transmission of communicable diseases, increased chances of contracting COVID 19 infection, occupational health and safety related issues and increased dispute related impacts. Mitigation measures to these adverse impacts will include: proper solid waste management and disposal, soil management practices, fire prevention measures, immediate medical attention to any ailments, proper wearing of relevant protective clothing and adherence to COVID 19 prevention/ containment measures.

The positive impacts of this project out do the anticipated negative impacts. Mitigation measures for the identified negative environmental and social impacts have been proposed. On overall, there is no adverse environmental/ social impact foreseen that cannot be mitigated. Project implementation will be done with due attention to the mitigation and management measures outlined.

The proponent is advised to ensure implementation of the mitigation measures proposed in all the development phases. This can easily be achieved through sharing the ESM & MP with the selected contractor.

The Cooperative Society has established a GRM sub-committee that would be handling all grievances from farmers as presented to them by the farmer representatives of the various zones. This provides a platform in which anyone can ask for information on the project, express a concern, make a complaint (grievance) or get in touch with the project for any reason.

Approval of this project will result to huge socio-economic impacts which are in line with the current development policies; including the Kenya Vision 2030, thus making it worthwhile investing in it. The recommendation of this assessment is that the proposed project be allowed to proceed on strict condition that the environmental and social management plan is implemented and follow-up is made to ensure compliance as may be further directed by NEMA.

CHAPTER ONE

INTRODUCTION

1.0 Background Information

The proposed project development comprises of a POTATO STORAGE FACILITY to be developed on plot no. NYANDARAUA/ MURUAI/ 2573, Nyandarua County. The storage facility is aimed at providing Lanyana Farmers' Cooperative Society Limited members with a reliable storage facility for their Irish potato produce awaiting price appreciation after harvesting. The proposed project area is served with good infrastructure; having a good road network, electricity, reliable water supply and a good security system. Upon project completion, the proposed storage facility will provide reliable potato storage services to the society members' hence increased bargaining power for their produce during sale. This SPR has been undertaken to fulfil the legal requirements as outlined in Legal No. 31 and 32 of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019.

1.1 Project Justification

The proposed project area is majorly an agricultural zone in the Northern parts of Nyandarua County. The area receives reliable rainfall throughout the year that adequately supports agriculture. The residents have majored in production of various agricultural products including but not limited to: Irish potatoes, peas, carrots, maize and cabbages for subsistence and commercial purposes. Irish potato is the dominant crop in the area, practised in small, medium and large scale.

Potato farmers experience challenges in bulking and marketing of their produce, due to lack of reliable storage means, hence they are forced to sell their produce promptly upon harvesting despite the low prices due to high supplies in the market. They also experience transportation challenges due to lack of volumes, hence rely on farm traders (middlemen), who buy from individual farmers and bulk the potatoes for transportation to external/ large markets. These middlemen have dominated the market in the rural areas, leading to farmers' exploitation with poor prices.

This kind of exploitation made some potato farmers in the project area to team up and formed Kanyagia- Maili Kumi CBO, whose aim was to help them bulk and market their potatoes without the intermediary traders. The farmers have been receiving better returns but still challenged by the low shelf life of potatoes due to lack of the right storage conditions and right varieties. The two factors, coupled with unreliable weather conditions have made farmers not been able to enjoy premium prices for their produce throughout the year.

The CBO foresaw the deficit within the industry and identified a gap to be filled. It has now translated into a cooperative (Lanyana Farmers' Cooperative Society) and has an aim to expand their marketing strategies with the help of developing a storage facility which will help increase the shelf life of potatoes to a longer period of even two months, hence guaranteed of benefiting from high prices, especially when the product is scarce in the market. Through storage, the members will be able to bulk their produce and hence supply potatoes direct to processors, where

they will sell their produce in kilograms, hence avoid middlemen exploitation who buy from farmers in unstandardized bags leading to losses.
The storage facility is aimed at ensuring maintained quality of the produce over the entire storage period awaiting sale making it safe for human consumption.

In addition to provision of a reliable potato storage facility, the proposed project will have other positive impacts such as;

a. Provision of a reliable product supply to the processors

b. Creation of direct and indirect employment opportunities during the construction and operation phases

c. Contract farming opportunities with processors in the market

d. Increased revenue to the county government

e. Increased income to the cooperative members during operation

f. Improved infrastructural development within the area

g. Improved food security within the project area/ country at large

h. Improved security within the project area

i. Improved aesthetic value of the project site

Development of the proposed project in the proposed area will therefore be of great benefit to the proposed project area and the County and Country at large.

1.2Justification of conducting the SPR

The SPR was as a result of the recommendation of the County Director Environment (CDE) based on the screening report, but also because NEMA Public Notice on ESIA and Legal Notice No 31 of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 which identifies the proposed project as low risk, thus requiring only SPR.

1.3 SPR Objectives.

The objectives of compiling an SPR for a proposed project are:

a) To determine the nature of the project.

b) To analyse the project location

c) To predict and assess the potential environmental and social impacts of the project.

d) To propose appropriate mitigation measures for any negative impacts predicted.

e) To allow for public participation by the people likely to be affected by the proposed project and the relevant stakeholders

f) To present findings that can guide informed decision making by NEMA.

1.4 Specific Objectives

The specific objectives of this proposed project are;

a) To provide an Irish potato storage facility for the farmers' produce, hence increase the potato shelf life awaiting sale,
b) To ensure farmers benefit from better prices of their produce during sale, and
c) To protect farmers from exploitative middlemen.

1.5 SPR approach and methodology

This SPR was done through field assessments, desk studies and discussion with the proponent and project beneficiaries through interviews.

The steps included:

a. Screening

This is the first step on evaluation; it involves establishing the environmental relevance of the project. In this case, the project was identified to fall in the second schedule of EMCA 1999.

b. Scoping

The exercise involves identification of the potential significant impacts. At this stage, discussions were held with the project proponent and the project beneficiaries.

c. Field data collection

Data collection was carried out through observations during site visit and consultation with beneficiaries by use of questionnaires. Visual inspections were carried out in the proposed project area to identify physical features, land use, vegetation, and existing infrastructure and land development.

d. Desk review

The data obtained was compiled and analysed, ESM & MP developed, outcome discussed with the proponent for submission to NEMA office.

1.6 Report outline

This SPR will be organized into the following chapters: Introduction, Nature of the project, Location of the project, Public Participation and Stakeholders consultation, Potential project impacts and mitigation measures to adverse impacts, ESM & MP, Conclusion and Recommendations, Photo Gallery, References and Appendices.

CHAPTER TWO

NATURE OF THE PROPOSED PROJECT

2.0 Overview

This chapter gives details of the nature of the project in terms of project description, project design/ layout, project activities, mobilization of machinery, site layout, material and equipment and the proposed project cost.

2.1 Description of the proposed project

The proposed development will consist of an office block, changing room, sorting and grading shed, weighing and packaging shed, ambient temperature store, septic tank/soak pit sewage system, water tank, ablution block and a waste disposal area.

The architectural drawings for the proposed development have been developed (copy attached in appendix 7). These have been circulated to the relevant County Government departments for recommendation and approval for development.

2.2 Project Activities

The project development will involve **four phases** namely: **planning, construction, operation and decommissioning**. Different activities in each phase are discussed below:

2.2.1 Planning Activities

These will majorly involve paper work, where the proposed project architectural drawings will be developed and submitted for recommendation and approval. Project related documents like the land ownership and legal authorizations from relevant government departments like NEMA will also be obtained in this stage. Public and stakeholders' consultation will also be done during the planning phase. The proposed project site will also be earmarked during the planning phase.

2.2.2 Construction activities

These will involve a series of activities to develop a storage facility that must be designed to meet the minimum requirements of low storage temperatures, high relative humidity, minimum light intensity during the day and adequate air flow. The construction activities will include:

Site safety and preparation for development, material handling and storage, masonry and steel, ventilation and lighting, roofing and sheet metal works, electrical works, Plumbing works and there after tidying up the site for occupation.

2.2.3. Operation Activities

These activities will majorly revolve around operations within the storage facility. The activities will involve:

2.2.3.1 Administrative works

These administrative roles will majorly involve office work, which will determine how the proposed storage facility will be operated. It will involve staff welfare, duty allocation, record keeping, management, meetings, enquiries, marketing, networking in the industry and accounting among others.

2.2.3.2 Sorting and Grading

This is a post-harvest activity which will involve classifying the potatoes mainly into three**: damaged, marketable and small.** This shall involve separation of potato based on size and quality upon reception at the storage facility. The damaged potato shall consist of any spoiled, rotten, injured (during harvesting) or green potato. These are non-marketable. The large-sized potatoes are the most preferred by the processors, hence they are the marketable ones and are referred to as ware potato. The small sizes may be used for household consumption by the farmer and some as seed for planting. The farmers will be expected to sort their produce at their farms, reducing workload at the storage facility, hence making the sorting and grading process at the storage facility easy and fast.

2.2.3.3 Weighing and packaging

The ware potato obtained after sorting and grading will be cured to repair any skin injuries and to promote the formation of a stronger epidermis to reduce water loss before storage. The curing should be carried out near the storage zone to minimize their handling/ in order to avoid new injuries after curing. The cured potato shall be weighed in kilograms and later packaged in wooden or plastic crates off the walls and ground ready for storage. Packaging in the store should be such that it maximizes air circulation and therefore reduces heat build-up which can lead to rotting. It should always ensure sufficient space to walk through the store for regular inspection and ease of operation.

2.2.3.4 Labelling and record keeping

The packed potato will be clearly labelled with the farmers' details and proper records maintained throughout the storage/sale process. Records shall be maintained individually, thus promoting transparency in the whole process. Record keeping is essential to the management of the store and the stock therein. Records should be regularly kept to help management in decision making and also for maintenance of the infrastructure. Records such as date of harvesting, names of owner, variety, source of stock, price at harvest, quantity stored, quantity damaged, quantity sold and price at time of sale shall be maintained.

2.2.3.5 Storage

The well graded, packaged, weighed and labelled potatoes in piled crates will be preserved in the storage facility for marketing. Life span of the product in the storage facility will depend on the market. Proper storage conditions must be maintained to enhance good quality throughout the storage season. Good storage should prevent: exposure to light which turns potato green making them develop an unpleasant taste and become toxic, excessive loss of moisture, development of rots, and excessive sprout growth. It should also prevent accumulation of high concentration sugars in potato, which results in dark-coloured processed products. The potatoes should be periodically checked for any signs of diseases and pests damage or rotting.

2.2.3.6 Marketing and disbursement

The PMC shall be tasked with the duty of contacting different processors for their different potato varieties. The committee shall negotiate the prices with different processors and sign contracts on behalf of the farmers.

2.2.3.7 Payment

The management committee of the storage facility shall supply the products to the processors as agreed and obtain payment. They shall deduct the commission to be agreed upon by the cooperative members and pay the farmers their share as per their quantities sold. The commission amount shall be used to run the storage facility and improve its developments. Plans to develop Memorandum of Understanding (MoU) and other related by-laws to guide the cooperative members concerning payments are underway, though there were proposals to pay farmers down payments upon product delivery to the store awaiting sale.

Other operation activities will include:

a. General repairs and maintenance. The buildings will be maintained regularly and will include activities such as repair of building walls and floors, repair and maintenance of electrical gadgets and equipment, repair of broken furniture/ crates, repairs of leaking water pipes and wall repainting among others.

b. Contracting waste handlers. The proponent will provide waste bins/ tanks for handling solid waste generated within the buildings for disposal into the temporary designated disposal site within the proposed site. He shall provide different bins to enhance segregation before disposal. He shall thereafter contract a NEMA licensed waste handler like the county trucks for collection and disposal of the accumulated waste to the designated dump sites. Waste water generated from the proposed development especially from the tea rooms and from the sanitary facilities shall be channeled to the septic system. The proponent will be required to contract a NEMA licensed exhauster to regularly exhaust the septic system for proper disposal.

2.2.4 Decommissioning Activities.

These involve the closing of the potato storage facility after the lapse of its expected lifespan or after inability to maintain and operate it. The activities to be undertaken during this phase will constitute:

- Undertaking a decommissioning ESIA
- Preparing a decommissioning design
- Demolition of the installed structures
- Disposal of waste materials in accordance with the National Environmental Laws and Regulations
- Clean up and rehabilitation of the site
- Re-vegetation of the former project site
- Post decommissioning monitoring.

2.3 Mobilization of Machinery

Depending with the development phase, the party responsible should mobilise machinery from a reliable/ authorised source.

2.4 Site Layout

The proposed project site layout will be planned/ developed as per the architectural drawings (appendix 7).

2.5 Material and Equipment

Materials and Equipment to be used throughout the proposed project cycle should be sourced from licensed and authorised dealers without compromising on cost. The proponent and the contractor contracted should adhere to this.

2.6 Proposed Project cost.

The proposed potato storage facility project budget is approximated at 16,000,000 Kenya shilling (summarised BQ attached- appendix 8). The estimated ESM & MP implementation cost for the proposed project through its different development phases is 1,200,000. This will ensure all the proposed mitigation measures to the adverse environmental and social negative impacts are implemented, thus enhancing environmental and social safety throughout the project life.

CHAPTER THREE

LOCATION OF THE PROPOSED PROJECT

3.0 Overview

This chapter gives details of location to the proposed project site, ownership of the proposed site, proximity of the proposed project site to environmentally sensitive areas and supportive environmental management project infrastructure and conformity to land use plan or zonation plan.

3.1 Location description

The proposed Irish potato storage facility is to be developed on Plot No. NYANDARUA/ MURUAI/ 2573. The proposed site is within Subuku area, Ndaragwa ward, Kanyagia location, Muruai Sub-location, Ndaragwa Sub-County, Nyandarua County. The proposed project site is at GPS coordinates: latitude 0.11436^0 N and longitude 36.45716^0 E. The proposed project area is accessed through the Maili Nne - Shamata tarmac road.

3.2 Site ownership

Lanyana Farmers' Cooperative Society Limited is entitled to be the owner of the parcel of land on which the proposed project will be developed. The land approximately measures 0.405 Ha Copies of the title deed and official land document search certificate have been attached to this report (appendix 5a and 5b respectively).

3.3 Environmentally Sensitive areas

The proposed site is within an area not in proximity to an existing environmentally sensitive area.

3.4 Project Infrastructure

a. Energy: The project area has connection to mains electricity grid. The proposed site shall also be connected to the existing grid upon application. The necessary electric power guidelines and precautionary measures shall be adhered to.

b. Water: The resource within the proposed project area is mainly supplied by DM water project. The proposed project site shall apply for the same connection with a supplementary source of the roof catchment through installation of gutters and collection tanks.

c. Waste Water: Waste water generation from the proposed development will majorly be from the sanitary facilities. Some waste water shall also be generated from the tea room and from cleaning/ washing activities. All the effluent sources shall be connected to the septic tank/ soak pit system, where the waste shall be channelled for later regular exhaustion and disposal to the sewer by a NEMA licensed exhauster.

d. Solid waste: Solid waste in the area is handled at the household levels, where residents segregate decomposable waste from the non-decomposable and dispose it appropriately or donate to potential users. Solid waste is anticipated to be of quantifiable volumes and in a steady flow during the operation phase. It will be handled through different waste bins, which the

project management committee will be required to provide. These shall be stored in an area protected from rain within the project facility, awaiting temporal disposal in the designated disposal site. The different disposal containers/ bins will encourage waste segregation while dumping. The waste will later be collected regularly by contracted waste handlers, like the county trucks. Other specific waste handlers like scrap metal dealers may also be contracted especially during the construction phase. All these waste handlers must be licensed by NEMA for such operation.

e. Road: The project area is mainly served by the Maili Nne - Shamata road. The proposed site is about 200 meters from this road, branching off at the Chiefs' Office earth road.

f. Security: The proposed project area is served by the Subuku police post which is located in the same compound with the proposed project site. The security situation is therefore conducive for long term investments like the proposed development.

3.5 Conformity to land use plan

The proposed project area has been zoned as a settlement zone. It is majorly a commercial/ residential/ agricultural area. The proposed project therefore conforms to the areas' land use plan.

CHAPTER FOUR

PUBLIC PARTICIPATION & STAKEHOLDER CONSULTATIONS

4.0 Overview

This chapter gives details of the objective of the public consultation, Categorization of Community Participants and Stakeholders, Methodology of Public Participation and Consultation and Summary of Issues Raised by the Community and Stakeholders.

4.1 Objective of public participation

Any proposed project is likely to have some impacts on the surrounding community and environment. The objective of public participation is to ensure that all people who are likely to be affected by a proposed project, either positively or negatively are fully informed, and given an opportunity to raise their concerns. These concerns are incorporated in the SPR report in compliance with Legal Notice 32 of the EIA/ Audit (Amendment) Regulations, 2019.

4.2 Categorization of Community Participants and Stakeholders

The members contacted to give their views concerning the proposed project included community members neighbouring the proposed project site and those likely to be affected by the proposed project. A total of 33 members availed themselves for the meeting, where 20 were men and 13 were female. The stakeholders present for the meeting included 31 farmers, 1 sub-county cooperative officer and the area assistant chief.

4.3 Methodology of Public Participation and Consultation

Public participation for this proposed project was accomplished through holding a public meeting within the proposed project site grounds on 9th February 2021, where public views were obtained by the use of public participation questionnaires. The exercise was carried out during a season where public gatherings were restricted following the prevailing COVID-19 pandemic. Mobilisation for the public participation was done through the project areas' administration office (Chiefs' office) in conjunction with the societies' leadership. During the exercise, all COVID-19 proposed prevention measures were adhered to. These included: restriction of the number invited, provision of running water and soap for hand washing, maintenance of social distance, wearing of masks to cover nose and mouth, sub-division of the members present into smaller groups and holding the meeting in an open area with free air circulation within a very short time.

Members present filling questionnaires in small groups.

The feedback got was for both positive and negative anticipations. An opportunity to suggest ways in which the negative environmental and social impacts identified can be addressed was also given.
Evidences to the above consultation are: photos, meeting minutes, meeting attendance list and filled questionnaires, attached to this report (Appendix 1, 2 and 3 respectively).

4.4 Summary of Issues Raised by the Community/ Stakeholders and Response
The results were as follows:

a) The anticipated **positive impacts** of the proposed project:
- Controlled market prices by the farmers
- Increased employment opportunities
- Increased growth and development of the society
- Increased bargaining power by the customer
- Increased community growth and development
- Farmers will get more skills and knowledge concerning potato farming.
- Farmers will have an opportunity to sell their product in kilograms instead of unstandardized bags.
- Availability of a storage facility will help farmers sell their product upon price appreciation.
- The farmers will be able to do away with-exploitative middlemen

b) The anticipated **negative environmental impacts** of the proposed project:
- Increased solid waste disposal especially after sorting/ grading process
- Increased chances of air pollution from any rotten potatoes in the dumping site
- Increased chances of insects (house-flies) in the store in case of rotten stored potatoes/ around the disposal site.

c) The anticipated **negative social impacts** of the proposed project:
- Conflicts may arise among the society members due to potato rotting during storage hence reduced quantities available for sale.
- Increased chances of conflicts on payment procedures if not agreed upon by the members before implementation
- Challenges of storage space competition upon increased product yields by the farmers.
- Disagreements may arise from members in case of delayed payments upon sale.

d) The **mitigation measures** to the negative **environmental impacts** of the proposed project:
- The project management committee to be elected should be innovative enough on how to utilise their waste products like disposing the rotten potatoes to potential users for making organic/ compost manure and damaged potatoes to pig farmers for use as feeds at a cost.

e) The **mitigation measures** to the negative **social impacts** of the proposed project:

- Conflicts among society members may be addressed through instituting a responsible project management committee.
- By-laws should be formulated to help regulate members conduct throughout the proposed project life.
- The project management committee should ensure farmers' products are well labelled and stored separately to avoid and minimise disputes in case of damage during storage/ prior sale.
- Sorting of the produce should be done keenly and properly to avoid/ reduce chances of rotting.
- The store should be constructed to accommodate a larger capacity even for the future upon increased produce.
- By-laws on payment to be formulated.

CHAPTER FIVE

PONTENTIAL IMPACTS AND MITIGATION MEASURES

5.0 Introduction

This chapter identifies both positive and negative environmental and social impacts associated with the project development. The mitigation measures to the negative environmental and social impacts have been proposed. The impacts and mitigation measures are categorised into **four project phases** namely: **planning, construction, operation and decommissioning.**

5.1 Planning Phase

5.1.1 Anticipated Positive Environmental and Social Impacts

a) Employment creation

The planning phase will involve different professionals and consultants. This will create temporal job opportunities to such.

b) Resource mobilization

The planning team will have an opportunity to mobilize for funding of their proposed development.

c) Compliance to legal requirement

During planning, necessary requirements will be engaged where legal authorization for development will be obtained from the relevant authorities NEMA inclusive.

d) Correct budget appropriation

The planning team will have an opportunity to approximate the total project cost, thus ensure proper funds appropriation throughout the project cycle.

5.1.2 Anticipated Negative Impacts and Mitigation Measures

5.1.2.1 Social Impacts and Mitigations

a) Community/ Stakeholders engagement

The public members will often be required to attend planning meetings like public participation. This will consume their individual time and resources.

The proposed mitigation measures will be:

- Strict time management during all meeting/ forums
- Rotational membership should be encouraged where different members should be invited in different forums.

b) Conflicts related issues

The planning phase will engage only a few members of the cooperative. Conflicts may arise from the members who will not be entirely involved in each stage. Measures must be put to help determine the individuals to be involved in the planning phase.

The proposed mitigation measures will be:

- The cooperative members should be regularly briefed on the planning progress.

- Number of members invited should be limited to the required COVID -19 regulation measures.

5.2 Construction Phase

5.2.1 Anticipated Positive Environmental and Social Impacts

a) Employment opportunities

During the project construction, job opportunities will be created especially to casual workers and to some other specialized workers. These will offer both skilled and semi-skilled labor. Those to benefit from construction jobs will include: masons, carpenters, electricians, plumbers and casual laborers among others.

b) Improved market for locally distributed construction materials

The construction phase will require a large supply of building materials including cement, sand and gravel. Due to cost effectiveness, the materials will be sourced locally. As a result, the local producers and distributers (quarries, hardware, and timber yards) will have a ready market for their products.

c) Improved economic growth

The project will contribute towards economic growth through the utilization of locally available construction materials. Their purchase from local producers/ distributers will supply them with revenue. These include cement, ceramic tiles, timber, sand, ballast, electrical cables among others. The consumption of these materials, fuel, oil and others will attract taxes including VAT. The amount payable to the government will increase government revenue. As a result the GDP will increase, improving economic development of the country.

d) Increased business opportunity for vendors

During construction works, several vending opportunities arise. These involve food vending, main customers being the construction crew. This will promote the informal sector in securing some temporary revenue.

e) Improved livelihood

Money earned from the different sectors by those involved in the construction phase will boost the living standards of the people. This will be through provision of food, access to medical services and quality education among others. As a result, the livelihood of the people involved in the construction process will improve.

5.2.2 Anticipated Negative Impacts and Mitigation Measures

5.2.2.1Environmental impacts and Mitigation Measures

a) Dust emissions

Excavation works will take place during the leveling of the project site prior to construction. This will involve removal of the top soil to lay foundation. This site clearance will generate dust. During transportation of materials to the site, vehicles will have a constant movement in and out

of the site; and dust is likely to be generated from these activities. Other activities likely to emit dust include:

- Handling of cement (which is dusty in nature) during its loading and offloading, opening up of cement bags and when mixing it with other materials such as gravel and sand.
- Handling of sand and ballast which could contain loose dust particles.
- Tiding up of the area holding sand and ballast, building blocks and sand if exposed to wind action

Dust emission will be controlled by the following measures:

- Dampening all active excavation areas before operation
- Covering all trucks hauling sand and other loose construction materials to the site, to prevent dust from being blown away by wind.
- The contractor and proponent should strictly enforce the use of PPEs by all workers, inclusive of dust masks and overalls.
- The project site should be fenced off to limit the dust emission from the project site, hence minimize emission to the neighborhood.

b) Noise pollution

Constant vehicle movement in and out of the project site with their running engines will result to noise and vibrations. During construction, machineries used like concrete mixers will generate noise. This can be a nuisance to the workers and the neighbours if beyond the permissible level.

The following noise-suppression measures should be employed:

- Workers who are to be exposed to high noise levels should be provided with PPEs like ear muffs.
- All construction works should be limited to daytime only, between 0800 and 1700 hours.
- The project site should be fenced off to contain the excess noise within.
- Excessive noise generating equipment like concrete mixers and generators (in case of power interruptions) should be located as far away as possible from the already occupied neighborhood.
- Any machinery in use should be well serviced for efficient and smooth running.
- When not in use and within the site, transport vehicle engines should be switched off.

c) Increased waste generation

Construction works are bound to produce large quantities of both solid and liquid waste. The solid waste will compose of packaging material, empty paint containers, broken pieces of timber and glass, empty cartons, rejected materials, metal cuttings, plumbing and lighting fixtures. Other solid waste will be generated from the food remains/ wrappers and packages of the construction crew and in some cases from broken machinery and replaced vehicle/ machinery spare parts if any. Liquid waste may involve vehicle/ machinery servicing remains like oils, used grease and general dirty water from the site. If not properly maintained, accumulation of such waste may make the working environment non-conducive, reducing its visual quality.

Proposed mitigation measures will be:

- Use of building materials that have minimal packaging to avoid generation of excessive packaging waste

- Recycling/ reuse of construction materials (that would have been disposed) for other productive uses should be encouraged.
- Use of durable, long lasting construction materials that would not need often replacement
- Provision of waste bins and a temporary disposal area within the site
- Collection of waste grease and oils from vehicle/ machinery servicing and their proper handling before disposal
- Donation of waste vehicle/ machinery spare parts to potential users
- The proponent should contract a NEMA licensed waste handler to collect the accumulated waste materials for disposal to the designated dump site

d) Increased water demand.

Water is an essential natural resource for the construction process. Water for use during construction of the proposed project will be supplied by the DM water project. The resource will be required in preparation of mortal, mixing of cement, curing works, settling of dust, equipment cleaning as well as other domestic uses like drinking and washing activities by the construction crew. This will result to an added water demand within the proposed project area/ site.

The following measures to conserve water should be employed:

- Recycling of water is recommended. Non-contaminated waste water may be used to dampen dry earth surfaces, clean equipment or for mixing mortal and cement.
- The workers should be sensitized to use water efficiently and sparingly.
- When not in use, all taps should be closed and where possible automated off- switching taps should be installed.
- Any water leaks through damaged pipes should be fixed promptly by qualified plumbers

e) Loss of aesthetic value

Excavation activities at the proposed project site will result to loss of the vegetation species composition. The landscape will be disfigured, losing the vegetative cover hence loss of the natural aesthetic value. The same will happen to areas where materials like stones are sourced (quarries) leaving dangerous pit falls, if not restored to the original state.

The proposed mitigation measures are:

- Excavation activities within the site should be limited to the area to be covered by the building only.
- The excavated material (top soil) should be used for landscaping activities within the project compound, where different plant species of aesthetic value should be introduced.
- Any surplus material should be correctly handled to avoid a non-tidy look within the site.

f) Impacts on soils

Impacts on soils may be of several kinds. Soil removal and relocation will be the main ones, due to the pre-construction site preparation activities. Soil compaction within the project site and along the access route to the site may also result from trampling either by human or vehicles. Consequences of compaction include impeded drainage (which leads to increased run-off and erosion), decreased water and air availability to plant roots and soil organisms (causing alteration in soil organism populations and plant death) and decreased abundance of larger pore spaces (leading to a decline in the population of larger soil organisms).

The impacts should be minimized through:

- Restriction of soil disturbance activities to the project site only, thus avoiding spillover effects to the neighborhood.
- Movement tracts within the site should be clearly defined to avoid trampling of the larger site. Where possible, the pave ways should be concreted.
- Transportation vehicles available should be strictly controlled to ensure that they operate within the designated areas to reduce soil compaction of the entire area.
- Landscaping within the site should be clearly planned for before implementation.
- The drainage structures should be properly installed to reduce chances of uncontrolled runoff, hence soil erosion within the site and pollution to the neighborhood.

5.2.2.2 Social impacts and Mitigation Measures

a) COVID-19 Pandemic

The construction will take place in a time where the country is undergoing impacts of Covid-19 infections. In case either of the crew will have the infection, the whole team will be threatened of being infected. This calls for strict adherence to the recommended virus prevention measures within the site.

These impacts should be minimized through:

- Regulating the number of people allowed into the site at a time
- Provision of running water and soap at site for regular hand washing or provision of alcohol based hand sanitizers
- Wearing of masks by all people
- Maintaining at least 1.5 m social distance while at the work station
- Regular temperature monitoring by use of a thermo-gun to those in site and at the entrance and allowing health care workers to the site for infection prevention/ control mobilization/ training.

b) Occupational Health and Safety

During construction, workers are likely to have accidental injuries and hazards from the intensive construction activities. These include erection and fastening of roofing materials, metal grinding and cutting, concrete work, steel erection and welding among others. At times, such injuries may be from accidental falls from high elevation, injuries from hand tools, cuts from sharp metal edges and broken glass among others. Temporal loss of hearing (partial deafness) may also result from repeated exposure to high noise levels if any.

The health of all people involved in the project, especially the construction crew, should be taken into consideration. **This should be through the following mitigation measures:**

- Provision of workers with relevant PPEs to help minimize/ avoid possible injuries
- Stocked first aid kits should be availed on site and some workers trained on first aid service provision.
- Serviced firefighting equipment (fire extinguishers) should be availed on site and workers trained on their use. These should be serviced promptly upon expiry.

- The proponent should ensure that the contractor adheres to the Occupational Health and Safety rules and regulations, as stipulated in the Occupational Health and Safety Act, (OSHA) 2007.
- Clean and potable water should be adequately supplied on site.
- Maintenance of environmental management records on site during and after the construction period should be done.
- Proper storage of materials and equipment should be done to prevent accidents occurrence.
- Workers should be trained on the usage of different tools/ machinery before use.
- Tools should be carried in tool boxes and not in the workers pockets.
- Sanitary facilities should be provided on site for use by the construction crew. They should be cleaned daily.
- Any realized injuries while on duty should be given immediate medical attention.

5.3 Operation Phase

5.3.1 Anticipated Positive Environmental and Social Impacts

a) Steady supply of potato to the processors and urban consumers

The proposed storage facility will ensure a reliable and sufficient supply of quality potato to the identified processors and urban consumers. This will ensure steady operations within the factories and hotels in towns.

b) Improved food security

The storage facility is aimed at providing storage conditions to potato to ensure maintained quality for some few months after harvesting. This will ensure processors and other consumers have a steady supply throughout the year, hence continuous operations. As a result, potatoes and their related products will be available in the market without shortage hence the challenge of food insecurity will be handled.

c) Increased income

The storage facility is aimed at relieving pressure from farmers on selling their produce immediately upon harvesting when the prices are low, but providing them with an opportunity to preserve their produce during glut and sell when supply is scarce. This will ensure that farmers benefit from maximum prices upon sale of their potato. As a result, the community members will experience increased financial gains from their potato farming.

d) Employment opportunities

The proposed project operation will directly or indirectly employ many people. These will range from workers in the farms to employees in the storage facility. The cooperative members proposed that members of the cooperative/ area residents be prioritized during recruitment in the facility. These will result to increased job opportunities within the area.

e) Improved livelihood

Income earned from potato farming will increase due to better marketing terms. As a result, cooperative members will have increased amounts to save after catering for their basic needs.

Some of this money will be channeled to other sectors of developing the households. The members will also be in a position to acquire quality health and education for their children. As a result, peoples' livelihood within the proposed project area will improve.

f) Growth of the Potato Industry

The proposed project will motivate potato farmers to upscale their farming practices for increased produce. As a result, they will buy more potato related farm inputs. Agro-dealers and potato specialists will be more engaged. As a result the entire potato industry from inputs, farming, marketing and processing will grow.

g) Area growth and development

Availability of steady cash flow in the area will boost good agricultural practices. The project area will be known for supply of quality potato even off harvesting seasons. The farmers will gain money for their basic needs and have more for development of better houses and their related facilities. As a result, the entire area will develop.

h) Increased government revenue

Through payment of the relevant taxes, rates and cess fees to the county government, especially in the trade environment, the project will contribute towards increased government revenue.

5.3.2 Anticipated Negative Impacts and Mitigation Measures

5.3.2.1 Environmental Impacts and Mitigation Measures

a) Solid waste generation

The operation phase is expected to have farmers and other employees within the proposed project site. For smooth running of their programs, it is expected that they would generate solid waste which may include: food stuff remains/ packages and waste wrappers among others. Other waste may include sorting/ grading waste and broken furniture and crates from the storage facility. Their poor disposal/ accumulation may lead to may lead to breeding of rodents/ pests and unsanitary conditions within the site.

The following waste prevention/ minimization strategies should be generally applied:

- The farmers/ employees should be provided with waste bins placed at strategic and defined places within the project site to help contain waste before disposal into the designated temporary disposal site.
- Waste segregation should be encouraged by the cooperative management providing different disposal bins where waste segregation should be properly done before disposal into the respective bin.
- Decomposable waste should be reused for manure purposes/ other possible uses, while the non- decomposable should be collected for further disposal.
- The broken/ damaged facility equipment/ furniture like crates should be repaired to increase their lifespan other than dispose them.
- A NEMA licensed waste handler should be contracted to regularly collect any accumulated solid waste for proper disposal to the designated dump site.

b) Soil degradation

Increased potato farming in the area may lead to increased and unregulated use of different agrochemicals (pesticides and herbicides) on the farms may lead to reduced soil quality and fertility.

Mitigation measures for soil degradation should include:

- Avoiding/ minimising the usage of agrochemicals in the farms that are unhealthy to the soil or those that reduce the soil fertility.
- Introduction of an Integrated Pesticide Management Plan by the proponent
- Proper training to the farmers on the right chemical application standards that should be within the processors requirement
- Farm workers should have appropriate PPEs while dealing with chemicals.

c) Fire safety

Incidents of fire may arise within the proposed site. This may result from overloaded electrical circuits or other electricity related activities.

Mitigation measures for fire safety should include:

- A fire assembly point should be designated within the project site.
- Serviced fire extinguishers should be availed on site and employees trained on their use. These should be serviced promptly upon expiry.
- Stocked first aid kits should be availed on site and employees trained on first aid administration.
- Emergency exit routes should be designated and properly labelled.
- Electrical guidelines should be adhered to and any repairs should be done by qualified electricians.

5.3.2.2 Social Impacts and Mitigation Measures

a) Disease transmission

The proposed project activities will attract many people within the proposed site. This will lead to increased interactions of people which might lead to more spread of diseases such as HIV/AIDs. Chemicals/ pesticides used in the farms may also affect the human health negatively if not controlled.

Mitigation measures should include:

- Special trainings should be conducted for employees on HIV/ AIDS and related social health risks.
- Chemicals/ pesticides used in the farms should be controlled to prevent/ minimize their effect on human health.
- Diseased potato upon sorting should be carefully handled and disposed to prevent them from spreading their disease to the environment

b) Occupational Safety and Health

Farmers are likely to experience hurts/ injuries from the farm equipment they use. Their exposure to different kinds of agro-chemicals may also be a threat to their health if uncontrolled.

Those in the weighing and packaging shed may end up experiencing hurts and injuries from falling crates if not handled with care.

Mitigation measures for Occupational Safety and health issues should include:

- Provision of PPEs including; goggles, gumboots, gloves and overall to employees on duty in the facility. Those in the farms should also be properly geared
- Proper training on handling different equipment before work especially in the weighing and packaging shed.
- Stocked first aid kits should be availed on site and some workers trained on first aid service provision.
- Serviced firefighting equipment (fire extinguishers) should be availed on site and workers trained on their use. These should be serviced promptly upon reaching expiry date.
- Sanitary facilities should be provided on site for use by the facility staff, farmers and traders. These should be cleaned daily.
- Employees should be given immediate medical attention in case of any injuries while on duty.

c) COVID-19 Pandemic

The project will be implemented in a period of COVID-19 infection. Close interaction of people may also lead to increased spread of the virus.

The impacts of COVID-19 pandemic should be mitigated through:

- Regulating the number of people allowed into the site at a time
- Provision of running water and soap at site for regular hand washing or provision of alcohol based hand sanitizers
- Wearing of masks by all people working or visiting the facility
- Maintaining at least 1.5 m social distance while at the work station
- Regular temperature monitoring by use of a thermo-gun to those in site and at the entrance and allowing health care workers to the site for infection prevention/ control mobilization/ training.

d) Dispute-related impacts

Implementation of the potato storage facility project is likely to face some social problems. These may include conflicts that may result from:

- Payment issues, where some members may experience less sales due to rotten/ spoilt potato during storage.
- Employment issues incase facility employees are not equally and transparently recruited.
- Other community members who may want to store their potato in the facility despite them not being members of the cooperative society.
- Refusal/ delayed cooperation by some members in the agreed project matters.
- Competition of storage space by members in case of any limitation.
- Record issues incase record management/ filing is poorly done.

Proposed mitigation measures to the possible disputes are:

- A project management committee should be elected to govern the project implementation.

- The cooperative should set by-laws that should govern members' behaviour on different issues payment inclusive.
- Proper record keeping should be encouraged per individual with proper labelling of the crates during storage.
- The management should periodically hold meetings with members to review progress and update them on financial matters.

e) Sexual Exploitation and Abuse (SEA)

Interactions among the locals and the non- locals in the project site may result to sexual exploitation or sexual abuse. This may also result among the employees. Proper measures must be put to help avoid/ minimise chances of SEA.

Mitigation measures should include:

- Decent dressing should be enforced on site and all workers should be in their work attires to avoid seducement.
- Workers should hold regular social forums where they share their social life experiences and openly declare their marital status.
- Only official language should be allowed on site.
- PMC should appoint a human resource person to handle any reports of sexual harassment.

f) Child labour

Involvement of children (persons under 18 years) in the proposed project activities will be termed as child labour. Care must be taken to ensure children are not involved in any way in the storage facility activities.

Mitigation measures for child labor issues should include:

- Children under the age of 18 years should not be hired on site
- Relevant local legislation, including labour laws in relation to child labour should be complied with.
- Any child labour cases should be forwarded to the children department for proper handling**.**

g) Labour Influx Effects

The operation phase of the proposed project will attract workers from both the local and external regions into the proposed site. Concentration of workers within the proposed project site will result to labour influx effects such as competition for basic resources like water, sexual harassment and exploitation, disease transmission and unwanted pregnancies among others. These must be mitigated to prevent/ minimise their impact. **Mitigation measures should include:**

- The PMC should develop a labour Management Plan to help deal with labour influx.
- The PMC should ensure records of labour force are properly maintained on site over time.
- Employment related laws should be clearly adhered to
- The PMC should ensure each worker is attached to a specific area with specified duties/ responsibilities

- Only workers with duties in a specific day should report to the work station.

h) Gender Based violence and Sexual Harassment

Violence/ conflicts and harassments may occur between workers of opposite genders (male against female). **The following mitigations measures should be implemented to minimise the effects:**

- Employment should be given equal opportunities to both genders.
- PMC should ensure workers are busy while at site, hence idling.
- A clear human resources policy against sexual harassment that is aligned with national laws should be developed.
- PMC should appoint a human resource person to handle any reports of sexual harassment.

5.4 Decommissioning Phase

Decommissioning of the project may result from various factors like: non-compliance with the provided architectural drawings, lack of capital to maintain it or lapse of its expected lifespan among others. The decommissioning procedure will see to it that the buildings are demolished. This will involve a series of activities with both positive and negative impacts.

5.4.1 Anticipated Positive impacts

Upon decommissioning, the project site will be rehabilitated for restoration to its original, hence an environmentally acceptable state. This will involve excavation to remove the building foundation, backfilling of the excavated soil for ground leveling and later re-vegetation, through reintroduction of the original species. This will result to an improved visual quality of the area in conformity to the natural environment.

5.4.2 Anticipated Negative Impacts and Mitigations

5.4.2.1 Environmental Impacts and Mitigation Measures

a) Air pollution

Demolition works will involve soil excavation for removal of the earlier laid foundation. Ground leveling will follow, where backfilling will be done. Dust will emanate from these activities. Vehicles moving in and out of the site will produce dust and fume emissions. These activities will result to contamination of the air quality.

Mitigation measures include:

- Foundation removal excavation works should be limited to the concerned foundation area only.
- The site should be fenced off to limit the dust to the site.
- Workers should be provided with appropriate PPEs including respirators.
- After ground levelling, re-vegetation should be done to improve the air quality under circulation.

b) Solid waste generation

Most waste generated during this phase will result from debris, concrete slabs, broken materials, broken glasses and metal pieces among others. Their incorrect handling will be a threat to the environment.

Mitigation measures include:

- Reuse and recycling of recyclable materials
- Proper management of the waste generated by accumulating it in a designated area within the site before it is collected by a contracted NEMA licensed waste handler for proper disposal.

c) Noise pollution

Demolition works may involve heavy machinery. Movement of transport vehicles in and out the site, with a large workforce may lead to increased noise levels within the area.

Mitigation measures include:

- The necessary demolition license should be obtained before commencement of operations.
- The contractor should ensure that the required noise levels are observed.
- All workers should be provided with the necessary PPE's including ear muffs/ plugs.
- All demolition activities should be limited to day time between 0800 and 1700 hours.
- The contractor should use noise suppressors like putting a wall to minimize and contain noise.
- Heavy machinery use should be minimized where manual labour can be employed.
- Machinery in use should be well serviced for efficient and smooth running.
- When not in use and within the site, transportation vehicle engines should be switched off.

5.4.2.2 Social Impacts and Mitigation Measures

a) Accidents and injuries

These may occur to the workers on site from the machinery use, fire out breaks, trips and falls or from collision with available machinery/ equipment among others.

Mitigation measures include:

- Workers should be properly trained on machinery use before hiring them.
- A fully stocked first aid kit should be provided on site for use in case of emergency.
- Some construction crew should be trained on first aid service provision.
- All workers on site should be provided with appropriate PPE's.
- The project site should be well fenced-off to prevent neighbours and passers-by from getting injuries.

CHAPTER SIX

ENVIRONMENTAL AND SOCIAL MANAGEMENT MONITORING PLAN (ESMMP)

6.0 INTRODUCTION

The ESMMP allows measures to be implemented that will prevent/ minimise the anticipated negative environmental and social impacts. The project contractor and the proponent must ensure that all proposed mitigation measures are implemented in time. Monitoring tools like a simple checklist may be used to record information relating to any mentioned environmental/ social aspects. The ESMMP below is categorised into the **four phases: planning, construction, operation and decommissioning**. It outlines the impact, proposed mitigation measure, monitoring indicator, party- responsible, means of verification, the implementation timeframe and the estimated cost.

6.1 SOCIAL MANAGEMENT AND MONITORING PLAN DURING PLANNING PHASE

Social Impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
Community/ Stakeholders engagement	- Strict time management during all meeting/ forums -Rotational membership should be encouraged where different members should be invited in different forums.	-Time taken per meeting -Kind of Members invited	-Proponent	-Meeting minutes -Meeting attendance register	-Monthly	10,000
Conflicts-related issues	- The cooperative members should be regularly briefed on the planning progress. -Number of members invited should be limited to the required COVID -19 regulation measures.	-Number of meetings held -Number of members invited	-Proponent	-Meeting minutes -Meeting attendance register	-Monthly	20,000

6.2 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING CONSTRUCTION PHASE

Environmental Impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
Dust emission	-Use of PPEs inclusive of dust masks and overalls should be strictly done by workers on site. -Complains of dust related ailments among workers should be given immediate access to medical attention. -The project site should be fenced off to minimize dust spread. -Dry earth surface should be dampened before excavation works commence.	-Use of PPEs -Number complains reported -Presence of a fence - Dampened earth surface	- Contractor/ Proponent - Contractor - Contractor - Contractor	-Physical observation -Doctors/ Medical report - Physical observation/ Financial records -Physical observation	-Daily - Weekly - Once before the project commences -Daily during excavation works	70,000
Noise pollution	-Noise levels should be within the prescribed limits as stated in EMCA (Noise and Excessive vibration pollution control Regulations, 2009). -All construction should be limited to daytime, between 0800 and 1700hours. -Workers likely to be exposed to high noise levels should be provided with appropriate PPESs, ear muffs inclusive. -Noisy equipment especially concrete mixers and generators (in case of power interruption) when in use should be located as far as possible from the already occupied neighbourhood.	-Review of the noise permit -Work schedule -Use of ear muffs -Location of noisy equipment while on use -Transport	- Contractor - Contractor - Contractor - Contractor/ Proponent - Contractor	-No of complains received from neighborhood/ Inventory of noisy machines -Noisy machines at site -Impromptu site visits. -Financial records/ Physical observation - Physical	-Weekly -Twice a week -Weekly -Weekly -Daily	40,000

	-Transport vehicles engine should be switched off when not in use and within the site. -Vehicles and machinery in use should be well serviced before work for efficient and smooth running.	schedule - Effective/ efficiency of machine/ vehicle	 - Contractor	observation/ Interviewing the neighbors -Fuel consumption report -Machine/ vehicle service report	 -Weekly - Weekly	
Solid waste generation	-Durable and long lasting construction materials should be used, thus reducing replacement intervals, hence the amount of waste generated -Construction waste should be recycled/ reused/ donated to potential users to ensure materials that would have been disposed are diverted into other possible productive uses. -Avoid accumulation of solid wastes to uncontrolled levels thus avoid creation of habitats for pathogens and rodents -A temporary site store should be constructed where construction materials should be handled from to avoid damage and misuse. -Use of durable, long lasting construction materials that would not need often replacement -Provision of waste bins and a temporary disposal area within the site where waste should be collected together after segregation awaiting collection by waste handlers	-Amount of waste generated -Amount of waste recycled - No of times waste is collected from site -Presence of a site store -No of times materials are replaced -Presence of waste bins/ a temporary disposal site	-Contractor -Contractor/ Proponent -Contractor/ Proponent - Contractor -Contractor -Contractor/ Proponent	- Reports on waste disposal -Reports on waste recycling -Reports on waste collection/ transportation for disposal -Physical observation/ Financial records -Records of construction material replacement -No of waste bins available at site	Weekly	150,000

	-NEMA licensed waste handlers should be contracted to collect and dispose the accumulated waste.	-Availability of accumulated waste at site	-Proponent/ NEMA/ County Government	-Presence of filled waste tracking documents at site/ contract document		
Increased Water demand	-Recycling of water should be recommended, where non-contaminated waste water may be used to wet the dry surfaces before excavation, clean equipment or for mixing mortal and cement. -Any water leaks through damaged pipes should be fixed promptly by qualified plumbers -The construction crew should be sensitized to use water efficiently/ sparingly to minimize wastage. -Taps should remain closed when not in use, and where possible automated off-switching taps should be installed. -A supplementary water source to the project water should be provided, where gutters and a separate tank should be installed for harvesting and storage of the roof catchment during rainy seasons.	-Amount of clean water consumed. -Number of damaged pipes - Amount of clean water consumed. -Absence of running water at site -Presence of installed gutters and storage tank	- Contractor -Proponent -Contractor -Contractor/ Proponent -Proponent	- Water consumption bills -Record of repairs done. - Water consumption bills - Water consumption bills -Reduced water bills	Weekly -Monthly -Weekly -Daily -One time	80,000
Loss of aesthetic value	-Excavation activities within the site should be limited to the area to be covered by the structures only. -The excavated material (top soil) should be used for landscaping activities within the project compound. -Any surplus material should be correctly handled/ disposed to avoid a non-tidy look	-Cubic meters covered on ground -Landscaping implemented -Absence of unutilized	-Contractor/ Proponent -Contractor/ Landscaper -Contractor	-Review of the architectural drawings -Physical observation/ Photography -Tidy compound/ absence of	Daily -After construction	70,000

	within the site -Landscaping should be properly planned for before implementation.	excavate materials. -Well organized landscaping	 - Proponent/ Contractor/ Landscaper	unutilized excavate materials -Intended site layout plan		
Impacts on Soil Compaction	-Movement tracts within the site should be clearly defined to avoid trampling of the larger site. -Transportation vehicles available should be strictly controlled to ensure that they operate within the designated area. -Ripping off any compacted areas should be done after construction to allow aeration of soil and ease infiltration of water into the soil.	-No of tracts defined on site -Vehicles zone designated -Ground ripped off	-Contractor - Contractor - Contractor	-Physical observation -Site plan map -Physical observation/ Financial records	-Before works commence -Daily -After construction works	30,000

6.3 SOCIAL MANAGEMENT AND MONITORING PLAN DURING CONSTRUCTION PHASE

Social Impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
COVID-19 Pandemic	-Regulating the number of people allowed into the site at a time -Provision of running water and soap at site for regular hand washing or provision of alcohol based hand sanitizers -Wearing of masks by all people -Maintaining at least 1.5 m social distance	-No of people at site -No of hand washing stations -Use of masks -Distance	- Contractor - Contractor / Proponent - Contractor	-Daily register -Physical observation/ Financial records -Records on masks issued/ Physical observation -Measuring	-Daily	100,000

	while at the work station -Regular temperature monitoring by use of a thermo-gun to those in site and at the entrance -Allowing health care workers to the site for infection prevention/ control mobilization/ training	between workers at site -No of times temperature is monitored -No of times health care workers are allowed to the site	- Contractor - Contractor / Public Health - Contractor / Public Health	distance between workers at the work stations -Records on temperature recorded -Report issued by the healthcare workers	-Weekly	
Occupational Health and Safety	-Provision of workers with respective PPEs (earmuff/ plugs, gloves, gumboots, helmets, overalls) -Stocked first aid kits should be availed on site and some workers trained on first aid service provision. -The site should be fenced off to prevent materials from falling over to neighbours. -Warning signage of on-going construction works should be erected -Serviced firefighting equipment (fire extinguishers) should be availed on site and workers trained on their use. These should be serviced promptly upon expiry. -Clean and potable water should be adequately supplied on site for the workers consumption. -Proper storage of materials and equipment	-Use of PPEs at site/ No provided -Availability/ No of first aid kits at site -Presence of a fence -Presence of warning signage -Availability of fire extinguishers -Availability of clean water -Presence of	-Contractor/ Proponent -Contractor/ Proponent/ Directorate of Occupation Health & safety -Contractor	-Physical observation/ Inventory of PPEs -Physical observation -Physical observation/ Financial records - Physical observation/No of erected signs -No of fire extinguishers available -Reports of water bills -Physical	-Weekly	110,000

	should be done to prevent accidents' occurrence. -Workers should be trained on the usage of different tools/ machinery before work. -Working tools should be carried in tool handling boxes and not in the workers pockets. -The construction site should have a proper site layout and should be kept tidy to avoid accidents from falling of materials and collision between workers and construction equipment. -Ladders should be regularly inspected and damaged ladders replaced immediately. -Sanitary facilities should be provided on site for use by the construction crew. These should be cleaned regularly. -Any realized injuries while on duty should be given immediate medical attention.	a store -Proper use of tools/ machinery -Use of tool boxes -Proper site planning/ arrangement -Presence of stable ladders -Number of available sanitary facilities -Number of injuries reported		observation/ Financial report -No. of injuries reported/ medical reports - Physical observation -Physical observation/ Financial report -No. of injuries reported/ medical reports		

6.4 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING OPERATION PHASE

Environmental Impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
Solid waste generation	-The farmers/ employees should be provided with waste bins placed at strategic and defined places within the project site to help contain waste before disposal into the designated temporary disposal site. -Waste segregation should be encouraged by the cooperative providing different disposal bins where segregation should be properly	-No of waste bins available/ Presence of a temporary disposal site -Amount of waste	- PMC	- Physical observation/ Financial records -Reports on waste disposal -Physical observation	-Monthly	100,000 per year

	done before disposal into the respective bin. -Decomposable waste should be reused for manure purposes/ other possible uses, while the non- decomposable should be collected for further disposal. -The broken/ damaged facility equipment/ furniture like crates should be repaired to increase their lifespan other than dispose them. -A NEMA licensed waste handler should be contracted to regularly collect any accumulated solid waste for proper disposal to the designated dump site.	generated -Amount of waste recycled - No of times waste is collected from site -No of times furniture/ equipment are repaired -Availability of accumulated waste at site	- Proponent/ PMC /Public health Department/ NEMA/ County government	-Reports on waste recycling - Records of furniture/ equipment repair -Reports on waste collection/ transportation for disposal -Physical observation/ Financial records --Presence of filled waste tracking documents at site/ contract document		
Soil degradation	-The usage of agrochemicals that are unhealthy to the soil or those that reduce the soil fertility should be avoided/ minimised -Introduction of an Integrated Pesticide Management Plan (IPMP) by the proponent -Proper training to the farmers on the right chemical application standards that are within the processors requirement -Farm workers should have appropriate PPEs while dealing with chemicals.	-Types of agrochemicals used -Availability of an IPMP -No of trainings done -Use of PPEs	-Proponent	-Records of agrochemicals used per season -Adoption of the IPMP by farmers -Training manuals/ reports -Physical observation	-Monthly	40,000 per year
Fire safety	-A fire assembly point should be designated within the site. -Serviced fire extinguishers should be availed on site and employees trained on their use. These should be serviced promptly	-Presence of a fire assembly point/ fire extinguishers	- PMC	-Physical observation -No of fire	- At the beginning of project operation -Upon expiry	70,000 per year

	upon expiry -Stocked first aid kits should be availed on site and employees trained on first aid administration. -Emergency exit routes should be designated. These should be properly labelled	-Presence of first aid kits -No of emergency exit routes		extinguishers present -No of first aid kits available -Physical observation	-Monthly -At the beginning of project operation	

6.5 SOCIAL MANAGEMENT AND MONITORING PLAN DURING OPERATION PHASE

Social Impact	**Proposed Mitigation Measures**	**Indicator**	**Responsibility**	**Means of verification**	**Timeframe /frequency**	**Estimated costs in (KES)**
Disease transmission	-Special trainings should be conducted for employees on HIV/ AIDS and related social health risks. -Chemicals/ pesticides used in the farms should be controlled to prevent/ minimize their effect on human health. -Diseased potato upon sorting should be carefully handled and disposed to prevent them from spreading their disease to the entire farm	-No of trainings conducted - Amount of pesticide/ chemicals used per season -Amount disposed	- PMC -	-Participation certificates issued/ Training records and manuals -Records of pesticide use -Reports on waste disposal	-Monthly	80,000 per year
Occupational Safety and Health	-Provision of PPEs including; goggles, gumboots, gloves and overall to employees on duty in the facility should be done.	-Use of PPEs at facility/ No. provided	- PMC	-Physical observation/ Inventory of PPEs	-Weekly	160,000 per year

	-Training on handling different equipment especially in the weighing and packaging shed should be done before work. -Stocked first aid kits should be availed on site and some workers trained on first aid service provision. -Serviced firefighting equipment (fire extinguishers) should be availed on site and workers trained on their use. These should be serviced promptly upon expiry. -Clean and potable water should be adequately supplied on site for the employees' consumption. -Employees should be given immediate medical attention in case of any injuries while on duty. -Sanitary facilities should be provided on site for use by the employees. These should be cleaned regularly.	-No of trainings done Availability -No of first aid kits at site -Availability of fire extinguishers -Availability of clean water - Number of injuries reported -Number of available sanitary facilities	-PMC/ Directorate of Occupation Health & safety -PMC/ Employees	-Certificates issued after training/ Training records and manuals -Physical observation -No of fire extinguishers available -Reports of water bills - No. of injuries reported/ medical reports -Physical observation/ Financial report	-Daily	
COVID-19 Pandemic	-Regulating the number of people allowed into the facility at a time -Provision of running water and soap at site for regular hand washing or provision of alcohol based hand sanitizers -Wearing of masks by all people -Maintaining at least 1.5 m social distance while at the work station	-No of people at site -No of hand washing stations -Use of masks -Distance between workers at site	-Proponent/ PMC - Proponent/ PMC/ Workers	-Attendance register -Physical observation/ Financial records -Records on masks issued/ Physical observation -Measuring distance between workers at the work	-Daily	150,000 per year

	-Regular temperature monitoring by use of a thermo-gun to those in site and at the entrance -Allowing health care workers to the site for infection prevention/ control mobilization/ training	-No of times temperature is monitored -No of times health care workers are allowed to the site.	- Proponent/ PMC/ Public Health -PMC	stations -Records on temperature recorded -Report issued by the healthcare workers	-Weekly	
Dispute related issues	-A project management committee (PMC) should be elected to govern the project implementation. -The cooperative should set by-laws that should govern members' behaviour on different issues payment inclusive. -Proper record keeping should be encouraged per individual with proper labelling of the crates during storage. -The management should periodically hold meetings with members to review progress and amend where necessary.	-Availability of a PMC -Presence of by-laws -Availability of records per individual -No of meetings held	-Proponent -PMC/ Cooperatives Officer -PMC -PMC	- Minutes on election of a PMC -Copies of the by-laws -Records on storage per individual -Minutes of meetings held	-Monthly	90,000 per year
Sexual Exploitation and Abuse (SEA)	-Decent dressing should be enforced on site and all workers should be in their work attires to avoid seducement. -Workers should be exposed to forums where they share their social life and openly declare their marital status. -Only official language should be allowed on site. -PMC should appoint a human resource	-No of sensitization forums held -Use of work attire/ decent dressing	- PMC	-Sensitization reports -Physical observation	-Weekly	30,000 per year

	person to handle any reports of sexual harassment.					
Child Labor	-Children under the age of 18 years should not be hired on site -Relevant local legislation, including labour laws in relation to child labour should be complied with. -Any child labour cases should be forwarded to the children department for proper handling.	-No of cases reported	-PMC	Employment records including identity card copies	-Daily	50,000 per year
Labor Influx effects	-The PMC should develop a labour management plan to help deal with labour influx. -The PMC should ensure records of labour force are properly maintained on site over time. -Employment related laws should be clearly adhered to. -The PMC should ensure each worker is attached to a specific area with specified duties/ responsibilities. -Only workers with duties in a specific day should report to work station.	-No of labour influx related cases reported.	- PMC	Records of labour force	-Monthly -Daily	40,000 per year
Gender Based violence and Sexual Harassment	-Employment should be given equal opportunities to both genders. -PMC should ensure workers are busy while at site, hence no idling. -PMC should appoint a human resource person to handle any reports of sexual harassment.	-No of male/ female employees -Employees to work in shifts -No of cases reported	- PMC	-Employees register -Physical observation -Complains register	-Monthly	40,000 per year

6.6 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN DURING DECOMMISSIONING PHASE

Environmental impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
Air pollution	-The site should be fenced off. -Workers should be provided with relevant PPEs for dust prevention and minimization -Vehicles transporting the demolished loose materials should be covered.	- Presence of a fence -Use of PPEs -Number of covered transportation vehicles	-Contractor	-Physical observation/ Financial records -Physical observation -Physical observation	-Daily -Weekly	70,000
Solid waste generation	-All building materials and equipment that will not be of use must be removed and disposed appropriately -A NEMA licensed waste handler should be contracted for waste collection and disposal to the designated area -Reusable materials should be donated to potential users.	-Amount of waste generated -Amount of waste generated -Presence of reusable materials	-Contractor - Proponent -Proponent	-Waste accumulation at the temporary disposal site -Presence of filled waste tracking documents at site/ contract document -Reusable materials donation records	-Weekly	100,000
Noise pollution	-Any necessary noise permit should be obtained before demolition works commence. -The works should take place during	-Review of the noise permit -Work schedule	- Proponent -Contractor	-Presence of a noise permit at site -Impromptu site	-Before demolition works start -Daily	60,000

	daytime between 0800 and 1700 hours. -Workers should be provided with appropriate PPEs, earmuffs inclusive.	-Use of ear muffs	-Contractor	visits. -Financial records/ Physical observation		

6.7 SOCIAL MANAGEMENT AND MONITORING PLAN DURING DECOMMISSIONING PHASE

Social impact	Proposed Mitigation Measures	Indicator	Responsibility	Means of verification	Timeframe /frequency	Estimated costs in (KES)
Accidents and injuries	-All workers should be provided with respective PPEs to prevent/ minimize any possible injuries. -Signage of on-going works should be erected -The site should be fenced off to secure neighbours from injuries. -Stocked first aid kits should be provided for on-site and some members of the demolition crew trained on provision of first aid services. -Any realised injuries should be given medical attention	-Use of PPEs -No of signs erected -Presence of a fence -Presence and No. of first aid kits - No of injuries reported	- Contractor	-Physical observation -Physical observation/ Financial records -Physical observation/ Financial records -Procurement report -Medical reports	-Daily -Daily -Daily -Weekly -Weekly	80,000

CHAPTER SEVEN

GRIEVANCE REDRESS MECHANISM FOR THE PROJECT

7.0 Overview

The Grievance Redress Mechanism chapter entails the Projects Complaint Process

7.1 Principles of the Complaints Process (GRM)

- The Complaints process is for people seeking satisfactory resolution of their concerns and/or complaints on the environmental and social performance of the Lanyana Farmers' Cooperative Society Ltd. in potato storage and marketing project funded by World bank through KCSAP
- This Process is consistent with the Project's Environmental and Social Management Plan (ESMP) and projects Grievance Redress Mechanism (GRM).
- The mechanism will ensure the following:

    - Basic rights and interests of every person affected by the project's environmental performance or social management of the project are protected; and

    - Their individual concerns arising from the performance of the project's environmental and social performance during the project phases of design, construction and operation activities are effectively and timely addressed.

7.2 How to get in Touch with the Project

Anyone can ask for information on the project, express a concern, make a complaint (grievance) or get in touch with the project for any reason. Complaints/concerns from farmers can be relayed to the management directly or through farmer representatives of the various zones.

7.3 Representative Contacts

Farmers in each of the zones that Lanyana Farmers' Cooperative Society Ltd will collect potatoes from have elected farmers' representatives. These representatives are the ones who would be airing any grievances availed to them by the farmers that they represent to the management. The GRM team consist of the following memebers:

A: CONTACTS OF FARMER REPRESENTATIVES PER ZONE

S/NO	ZONE	NAME OF FARMER REP	PHONE NUMBER
1	Maili Kumi	Wachira Nduhiu	0727 768 032
2	Muruai	Jane Wanjiku Kigathi	0725 712 625
3	Iriaini	Martin Njau Kariuki	0721 673 840
4	Kiriita	Joseph Gichohi Waweru	0756 534 571

5	Kanyagia	David Gikandi	0751 102 601
6	Ndaragwa	Samuel Wa ng'ondu Kingori	0712 986 705
7	Subuku	Peter Nderitu Wairia	0721 936 878

B: GRM SUB- COMMITTEE

S/NO.	NAME	PHONE NUMBER
1	Simon Kamau Gatitu	0722 998 402
2	Cyrus Mwangi Mwaniki	0722 68P 776
3	Mary Wanjiku Kagondu	0713 915 738

Chairman.
Peter Ndirangu Mbutu
OPERATI
SOCIETY
P.O. BOX 98-N
Sign.

7.4 Sub-Committee Contacts

The Cooperative Society has established a GRM sub-committee that would be handling all grievances from farmers as presented to them by the farmer representatives of the various zones. Contacts of the GRM sub-committee members are as indicated in this GRM.

Channels through which grievances can reach the GRM desk of the Cooperative Society are:

1. Text messages, or by calling using mobile phone
2. Post Office Box: Lanyana Farmers' coop. society Ltd. P. O. Box 98 Ndaragwa.
3. Suggestion box: Letters can be dropped in a suggestion box that would be located at the proposed potato storage facility at Kanyagia shopping center.
4. Face-to-face: An aggrieved person(s) can book an appointment with the management sub-committee that handles grievances and present their issues directly.

7.5 Roles and Responsibilities

The following are persons involved in the complaints process and their supporting roles and responsibilities.

- ✓Person who will answer simple queries and manage simple complaints: Assistant Manager
- ✓Person who will manage difficult complaints or grievances: Manager.
- ✓Person who will prepare reports and keep GRM register: Project manager and PIC chairperson
- ✓Grievance Redress Sub-Committee will be meeting on need basis to handle complex or significant grievances. This sub-committee will be made up of appropriate senior officials.

7.6 The Complaints Process

- ✓All complaints or grievances will be entered into an assigned database that tracks progress of each complaint/grievance. Complaints records (letter, email, record of conversation etc.) are stored both electronically and in hard copy. Each record has a unique number reflecting year and sequence of received complaint.

- ✓Each complaint/grievance is assigned a specific person responsible for its management and close out.
- ✓Each complaint or grievance will have a plan for addressing and closing out:
    - If the complaint/grievance relates to a contractor activity, the project will ensure the Contractor remedies any damage, pays compensation for damage or loss, etc.
    - Use of community leaders and customary methods of conflict resolution is encouraged and utilized if and when appropriate – on a case-by-case basis.
    - If an issue/complaint cannot be resolved on site, it is elevated to the Manager for resolution (with support from the Safeguards Specialist). If the Manager and Safeguards Specialist cannot resolve the issue, it is referred to the Grievance Sub-Committee.
    - If a resolution cannot be found through the Grievance Sub-Committee, the next course of action is the courts or an independent mediator.
- ✓All simple complaints and grievances must aim to be closed out within 1 month.
- ✓ Complex complaints should aim to be closed out within 3 months or deferred to the Grievance Committee.
- ✓The Project team will make adjustments to consultations, the GRM, community engagement, project implementation and other aspects as necessary to avoid future complaints and grievances if and when required.

7.7 Reporting and Evaluation

- ✓ Complaints shall be reported in the regular project reporting to the World Bank. It should contain:
    - Total number of complaints/grievances received.
    - Total number resolved.
    - Total number under investigation/not yet resolved.
    - Total number not yet resolved and also exceeds the recommended close out time of 1 month or 3 months.
- ✓ Short paragraph on any significant grievances currently not yet resolved and any risks to project implementation.
    - If there are more than 30 complaints/grievances recorded, the Project Manager may decide to investigate any patterns or repetition of issues that need addressing. The Project Manager may decide to get an independent consultant to review and provide advice.

CHAPTER EIGHT

CONCLUSIONS AND RECOMMENDATIONS

8.0 Overview

This chapter outlines the findings of the report. It also states the experts' recommendation in regard to the proposed project.

8.1 Conclusions

The SPR findings outline both positive and negative environmental and social impacts. The primary objective of the proposed project is to provide the beneficiary community with an Irish potato storage facility that will enhance their potato preservation means, relieving them the pressure to sell their produce immediately upon harvesting when the prices are low due to glut. The proposed storage facility will help increase the shelf life of potato, giving farmers a chance to sell their produce when the supply is low in the market, thus guaranteeing them maximum profit.

The project is an environmentally medium risk project and thus poses no significant threat to the environmental aspects within the proposed project area. The positive impacts that will arise as a result of the implementation of this project will include availability of reliable supply to processors, increased income to the farmer, increased employment opportunities, increased area growth and development and increased growth of the potato industry at large.

The positive impacts out do the anticipated negative impacts. Mitigation measures for the negative environmental and social impacts have been proposed. The proponent is advised to ensure implementation of the mitigation measures in all the phases of the development. An environmental management plan that fulfils the requirements of EMCA has also been presented. The proponent will have to comply with the recommendations of the management plan for sustained safety within/ around the project site.

Approval of this project will result to huge socio-economic impacts which are in line with the current development policies; including the Kenya Vision 2030, thus making it worthwhile investing in it.

8.2 Recommendations

The recommendation of this assessment is that the proposed project be allowed to proceed on strict condition that the environmental and social management & monitoring plan is implemented and follow-up is made to ensure compliance as may be further directed by NEMA.
The proponent and contractor should ensure that the construction is as per approved architectural drawings. Any alterations to the design should be approved by the relevant County Government departments. The proponent and contractor should ensure that the proposed mitigation measures to the potential negative impacts are instituted. This will help avoid/ minimise potential adverse impacts emanating from the project development. This should be done by clearly adhering to the ESM & MP. As a result, the foreseen threats will be minimised, thus enhancing safety.

It is the experts' recommendation that this project be approved, subject to the outlined mitigation measures being adhered to. The key goal should be towards avoiding/ minimizing the occurrence of environmentally and socially unsound impacts. This will be achieved through the proponents' close monitoring of the development progress, while adopting the ESM & MP in every development phase.

PHOTO GALLERY


Cooperative chairman addressing the public during public participation meeting


The Area assistance chief addressing the public during the public participation meeting


A cooperative member giving his views

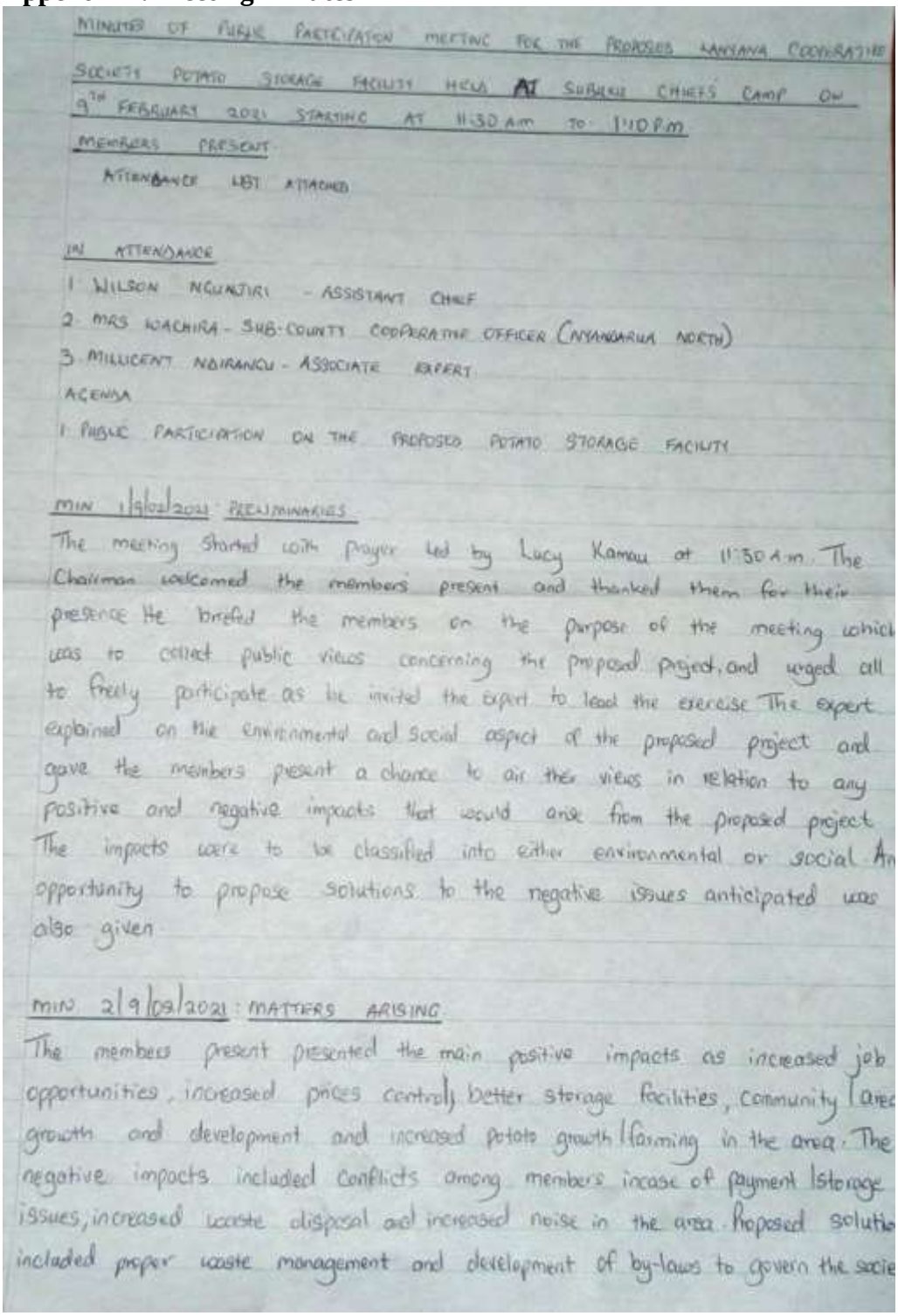
Members filling questionnaires in smaller groups

REFERENCES

1. Government of Kenya, 2000; Building Code, Laws of Kenya
2. Government of Kenya, 2015; Environmental Management and Co-ordination Act (CAP 387), Laws of Kenya
3. Government of Kenya, 1999; Environmental Management and Coordination Act No 8, Laws of Kenya.
4. Government of Kenya, 2019; The Environmental (Impact Assessment and Audit) (Amendment) Regulations, Laws of Kenya.
5. Government of Kenya, 2003; The Environmental (Impact Assessment and Audit) Regulations, Laws of Kenya.
6. Government of Kenya, 2007; The Occupation Health and Safety Act, Laws of Kenya.
7. Government of Kenya, 2006; The Waste Management guidelines, Kenya Gazette supplement 69
8. Government of Kenya, 2007; The Work Injury Benefits Act, Laws of Kenya.
9. Government of Kenya, 2008; Vision 2030, PDF version, Government printer, Nairobi
10. Nyandarua County, 2017; Integrated Development Plan 2018-2022, Nyandarua County documents

APPENDICES

Appendix 1: Meeting minutes



MINUTES OF PUBLIC PARTICIPATION MEETING FOR THE PROPOSED LANYANA COOPERATIVE SOCIETY POTATO STORAGE FACILITY HELD AT SUBLOCATION CHIEFS CAMP ON 9TH FEBRUARY 2021 STARTING AT 11:30 A.M TO 1:10 P.M

MEMBERS PRESENT

ATTENDANCE LIST ATTACHED

IN ATTENDANCE

1. WILSON NGUNJIRI - ASSISTANT CHIEF
2. MRS WACHIRA - SUB-COUNTY COOPERATIVE OFFICER (NYANDARUA NORTH)
3. MILLICENT NDIRANGU - ASSOCIATE EXPERT

AGENDA

1. PUBLIC PARTICIPATION ON THE PROPOSED POTATO STORAGE FACILITY

MIN 1/9/02/2021 PRELIMINARIES

The meeting started with prayer led by Lucy Kamau at 11:30 A.m. The Chairman welcomed the members present and thanked them for their presence He briefed the members on the purpose of the meeting which was to collect public views concerning the proposed project, and urged all to freely participate as he invited the expert to lead the exercise The expert explained on the environmental and social aspect of the proposed project and gave the members present a chance to air their views in relation to any positive and negative impacts that would arise from the proposed project The impacts were to be classified into either environmental or social An opportunity to propose solutions to the negative issues anticipated was also given

MIN 2/9/09/2021: MATTERS ARISING

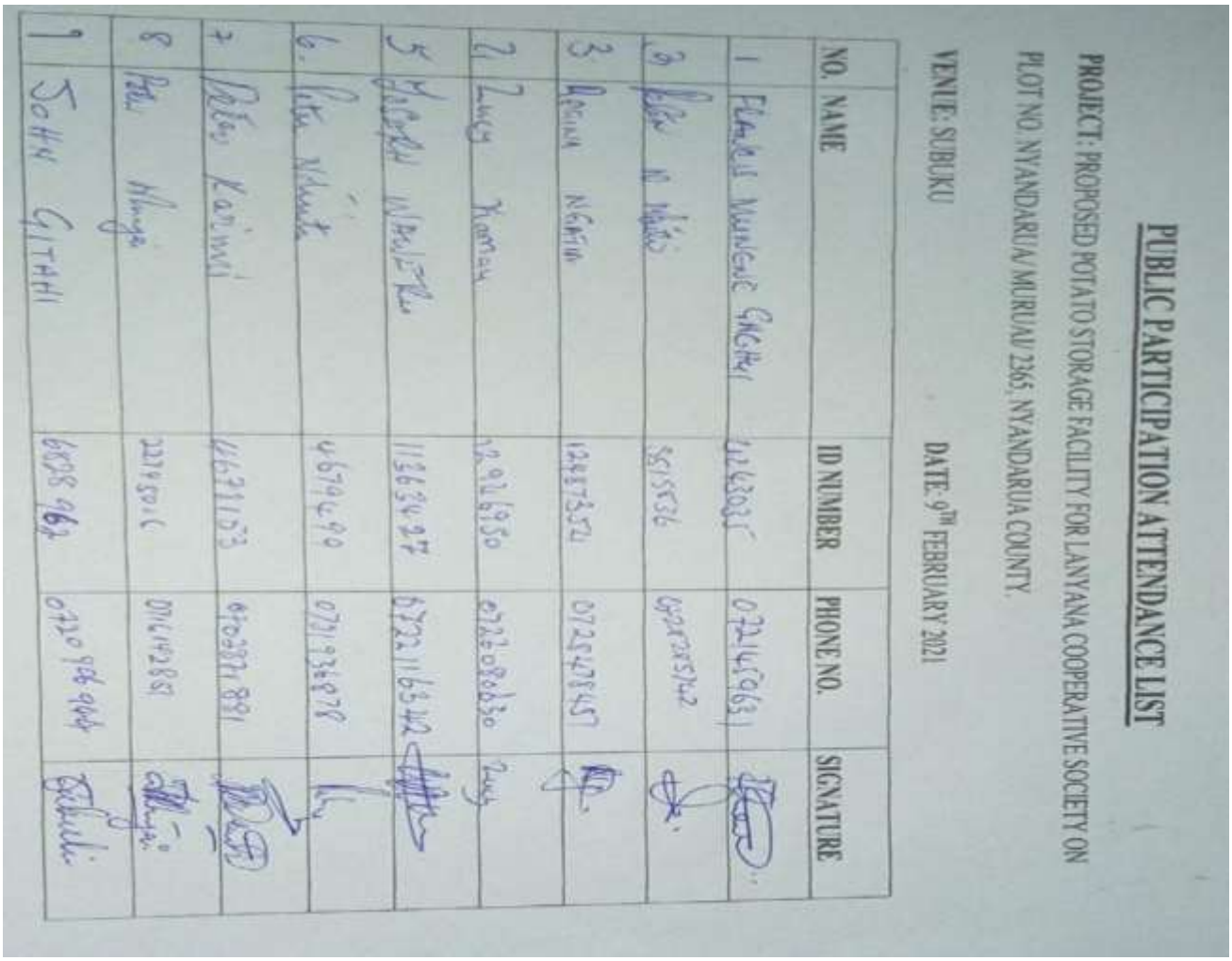
The members present presented the main positive impacts as increased job opportunities, increased prices control, better storage facilities, community / area growth and development and increased potato growth / farming in the area. The negative impacts included conflicts among members incase of payment /storage issues, increased waste disposal and increased noise in the area. Proposed solutio included proper waste management and development of by-laws to govern the socie

min 3/09/02/2021. ADJOURNMENT

There being no other business, the meeting ended at 1:10 P.m with prayer by Jane Mwenda. The Chairman thanked the members for their cooperation and dispersed them.

	NAME	POSITION	SIGNATURE	DATE
1.	MILLICENT NDIRANGU	ASSOCIATE EXPERT		9-02-2021
2.	Peter Mbiriyo	CHAIRMAN		09-02-2021
3.	FRANCIS MUNENE	SECRETARY		09-02-2021

Appendix 2: Meeting Attendance lists



PUBLIC PARTICIPATION ATTENDANCE LIST

PROJECT: PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY.

VENUE: SUBUKU DATE: 9TH FEBRUARY 2021

NO.	NAME	ID NUMBER	PHONE NO.	SIGNATURE
1	[illegible]	[illegible]	[illegible]	
2	[illegible]	[illegible]	[illegible]	
3	[illegible]	[illegible]	[illegible]	
4	[illegible]	[illegible]	[illegible]	
5	[illegible]	[illegible]	[illegible]	
6	[illegible]	[illegible]	[illegible]	
7	[illegible]	[illegible]	[illegible]	
8	[illegible]	[illegible]	[illegible]	
9	[illegible]	[illegible]	[illegible]	

PUBLIC PARTICIPATION ATTENDANCE LIST

PROJECT: PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY.

VENUE: SUBUKU DATE: 9TH FEBRUARY 2021

NO.	NAME	ID NUMBER	PHONE NO.	SIGNATURE
1	JOHN WAN'AU	3347906	0724837841	
2	JANE M. KARIUKI	6862418	0701497244	
3	SAMWEL GICHUKA	1903936	0722985815	
4	TIROS KIRAGU	29516207	0701156071	
5	GEOFFREY MUTANGI	5750916	0769621736	
6	TITUS GITONGA	13251185	0740721236	
7	JANE M. MAOSO	8678740	0727085341	
8	MARY KAGUNDU	9569113	0713910738	
9	Beth Wairimu	1456952	0729932866	

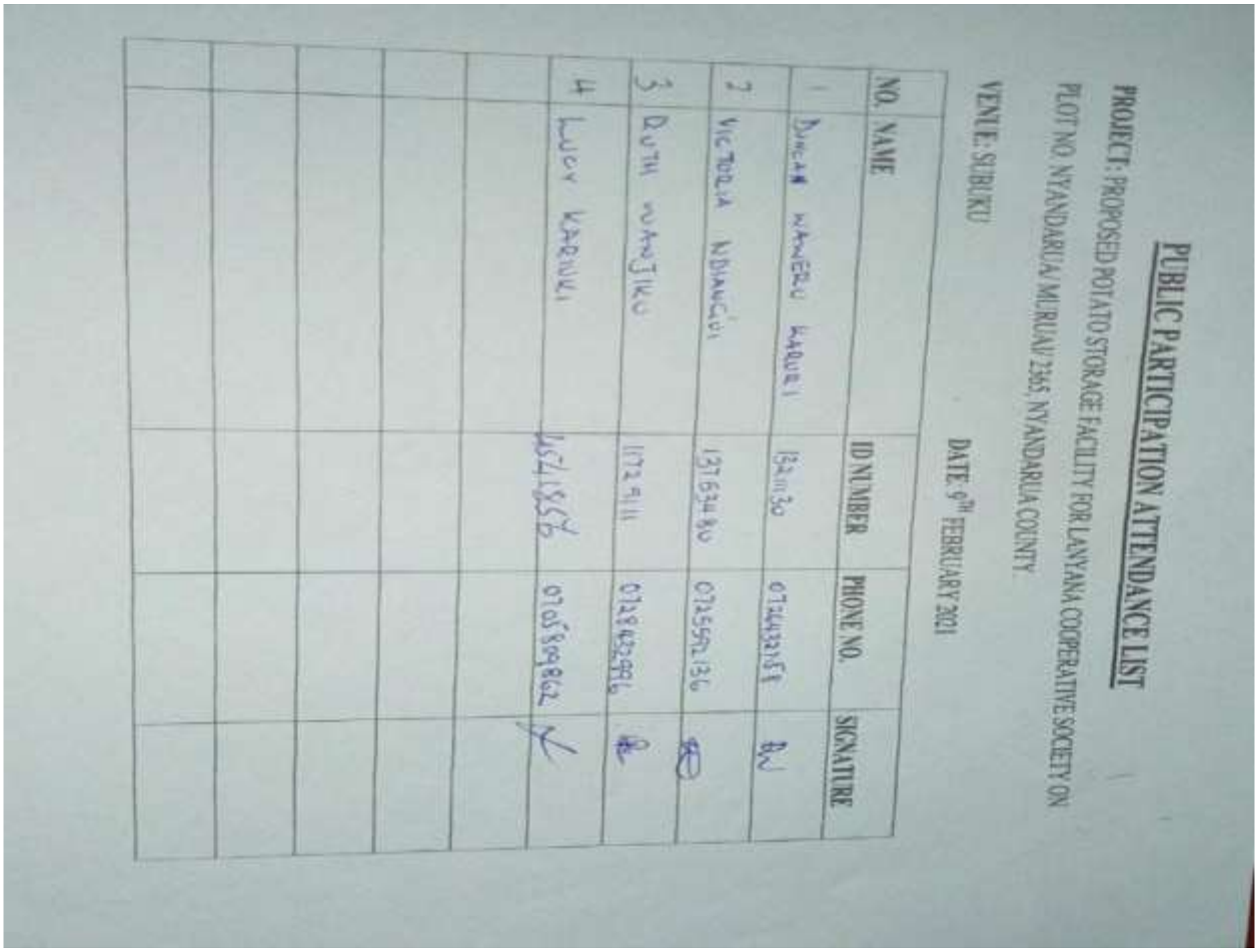
PUBLIC PARTICIPATION ATTENDANCE LIST

PROJECT: PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY.

VENUE: SUBUKU

DATE: 9TH FEBRUARY 2021

NO.	NAME	ID NUMBER	PHONE NO.	SIGNATURE
1.	[illegible]	[illegible]	[illegible]	
2.	[illegible]	[illegible]	[illegible]	
3.	[illegible]	[illegible]	[illegible]	
4.	[illegible]	[illegible]	[illegible]	
5.	[illegible]	[illegible]	[illegible]	
6.	[illegible]	[illegible]	[illegible]	
7.	[illegible]	[illegible]	[illegible]	
8.	[illegible]	[illegible]	[illegible]	
9.	[illegible]	[illegible]	[illegible]	



PUBLIC PARTICIPATION ATTENDANCE LIST

PROJECT: PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY

VENUE: SUBUKU DATE: 9TH FEBRUARY 2021

NO.	NAME	ID NUMBER	PHONE NO.	SIGNATURE
1	DUNCAN WAWERU KAGUEI	13211130	0724433159	BW
2	VICTORIA NDIANG'UI	13763480	0725552136	[signature]
3	RUTH WANJIKU	11729111	0728432986	[signature]
4	LUCY KARUKI	26541856	0705898862	[signature]

Appendix 3: Public participation questionnaires.

GROUP 1

PUBLIC VIEWS QUESTIONNAIRE

The Department of Agriculture, Livestock and Fisheries Nyandarua County, through the Kenya Climate Smart Agriculture Project (KCSAP) has contracted an Environmental Impact Assessment (EIA) expert to carry out an Environmental and Social Impact Assessment (ESIA) report for the PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY. Public participation is a requirement according to Regulation 17 (1) of the EIA/ Audit Regulations of 2003.

The objective of public participation is to ensure that all people who are likely to be affected by a proposed project, either positively or negatively are fully informed, and given an opportunity to raise their concerns.

The contracted expert kindly seeks the views and opinions of the community likely to be affected by the proposed potato storage facility project. You are requested to fill in this form, thus providing information helpful in decision making in regard to the proposed project. Your views will be handled with confidentiality. Your cooperation is highly appreciated.

1. **Are there BENEFITS (positive impacts) you think will arise from the establishment of the proposed development?**

(a) Yes [✓] (b) No [ ]

If YES, please name them:

- Selling potato in kilograms
- No brokers
- Farmers will be able to wait for a better price.
- Better storage

2. **Are there ENVIRONMENTAL PROBLEMS (negative impacts) you think will arise from the establishment of the proposed development?**

(a) Yes [✓] (b) No [ ]

1

GROUP 1

If YES, please name them:

- Rotting of potatoes
- Air pollution
-

3. **Are there SOCIAL RELATED PROBLEMS you think will arise from the establishment of the proposed development?**

(a) Yes [✓] (b) No [ ]

If YES, please name them:

- If some potatoes are rotten after Sorting
- Rate of payment (ie) How will ~~be~~ ~~the~~ the farmer be paid
- Delay of money

4. **Suggest ways in which the negative problems identified in 2 and 3 above can be addressed**

- Paying in advance or cash.
- Member should be shown the rotten potatoes if rotten
- Digging of septic tank.

2

GROUP 1

.....

.....

.....

5. In your opinion, should the proposed project be implemented?

(a)Yes [✓] (b) No [ ]

If NO, please explain:

.....

.....

.....

CONTACT DETAILS

No	NAME	GENDER		PHONE NO.	SIGNATURE	DATE
		Male	Female			
1	Duncan Wawery	✓		0726437758	DW	9/02/2021
2	Victoria Ndungiri		✓	0725592136		11
3	Ruth Nduniku		✓	0728432496		11
4	Mercy Kariuki		✓	0705809862		11
5	Mary Kagondu		✓	0713915738		11
6	Beth Wairimu		✓	0729932866		11
7	Alice Wangari		✓	0724140754		11
8	Charles K. Muraya	✓		0726254580		11

THANK YOU FOR YOUR COOPERATION.

3

Group 2

PUBLIC VIEWS QUESTIONNAIRE

The Department of Agriculture, Livestock and Fisheries Nyandarua County, through the Kenya Climate Smart Agriculture Project (KCSAP) has contracted an Environmental Impact Assessment (EIA) expert to carry out an Environmental and Social Impact Assessment (ESIA) report for the PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY. Public participation is a requirement according to Regulation 17 (1) of the EIA/ Audit Regulations of 2003.

The objective of public participation is to ensure that all people who are likely to be affected by a proposed project, either positively or negatively are fully informed, and given an opportunity to raise their concerns.

The contracted expert kindly seeks the views and opinions of the community likely to be affected by the proposed potato storage facility project. You are requested to fill in this form, thus providing information helpful in decision making, in regard to the proposed project. Your views will be handled with confidentiality. Your cooperation is highly appreciated.

1. **Are there BENEFITS (positive impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☑ (b) No ☐

If YES, please name them:

1. SELLING USING WEIGHING PROGRAME (50 kg)
2. WAITING FOR PRICE TO APPRECIATE
3. JOB CREATION :- TRANSPORT & OTHERS
4. COMMUNITY WILL BENEFIT

2. **Are there ENVIRONMENTAL PROBLEMS (negative impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☑ (b) No ☐

1

GROUP 2

If YES, please name them:

1. Rotting - can cause bad smell (pollution)
2. Insect disturbances - flies. (House flies)
3. Water pollution - erroution

3. Are there SOCIAL RELATED PROBLEMS you think will arise from the establishment of the proposed development?

(a) Yes ☑ (b) No ☐

If YES, please name them:

1. Lack of space - due to more yields
2. Complaints - forwarded 50kg - 10 got rotten but payment at agreed rate.
3. Fighting for space

4. Suggest ways in which the negative problems identified in 2 and 3 above can be addressed

1. Proper grading
2. If possible - a big store
3. Utilizing rotten potatoes ie. selling for feeding pigs

2

GROUP 2

5. In your opinion, should the proposed project be implemented?

(a)Yes ✓ (b) No

If NO, please explain: N/A

CONTACT DETAILS

No	NAME	GENDER		PHONE NO.	SIGNATURE	DATE
		Male	Female			
1.	PATRICK WAMIORO	✓		0722451445		9/02/2021
2	JOHN GITAI	✓		0720906914		9/02/2021
3	Peter Mungai	✓		0716N2851		9/2/21
4.	Peter Nduta	✓		0721936878		9/2/21
5	Peter Karimi	✓		0702871881		9/2/21
6	Joseph Wawcru	✓		0722116342		9/2/2021
7.	REGINA NGATIA	✓	✓	0728[illegible]		9/2/021
8	Lucy Kamau		✓	0726080630	Lucy	9/2/021

THANK YOU FOR YOUR COOPERATION.

3

GROUP 3

PUBLIC VIEWS QUESTIONNAIRE

The Department of Agriculture, Livestock and Fisheries Nyandarua County, through the Kenya Climate Smart Agriculture Project (KCSAP) has contracted an Environmental Impact Assessment (EIA) expert to carry out an Environmental and Social Impact Assessment (ESIA) report for the **PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY**. Public participation is a requirement according to Regulation 17 (1) of the EIA/ Audit Regulations of 2003.

The objective of public participation is to ensure that all people who are likely to be affected by a proposed project, either positively or negatively are fully informed, and given an opportunity to raise their concerns.

The contracted expert kindly seeks the views and opinions of the community likely to be affected by the proposed potato storage facility project. You are requested to fill in this form, thus providing information helpful in decision making, in regard to the proposed project. Your views will be handled with confidentiality. **Your cooperation is highly appreciated.**

1. **Are there BENEFITS (positive impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☑ (b) No ☐

If YES, please name them:

JOB CREATION
Bargaining power
Non members will also benefit
Community Growth eg better roads, skills and KTW
Expect more people from other parts to learn about potato

2. **Are there ENVIRONMENTAL PROBLEMS (negative impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☐ (b) No ☑

1

GROUP 3

If YES, please name them:

.....

.....

.....

.....

.....

.....

.....

3. Are there SOCIAL RELATED PROBLEMS you think will arise from the establishment of the proposed development?

(a) Yes [✓] (b) No [ ]

If YES, please name them:

.....

Mixing potatoes from different farmers

.....

.....

.....

.....

.....

4. Suggest ways in which the negative problems identified in 2 and 3 above can be addressed

.....

each farmer to have his/her own preserving boxes

.....

.....

2

GROUP 3

.....

.....

.....

5. In your opinion, should the proposed project be implemented?

(a)Yes [✓] (b) No [ ]

If NO, please explain:

.....

.....

.....

CONTACT DETAILS

No	NAME	GENDER		PHONE NO.	SIGNATURE	DATE
		Male	Female			
1	Titus Kiragu	✓		0701156074		09/02/21
2	Samwel Gichuka	✓		0722995815		9/2/21
3	Jane M. Kariuki	✓		0701987244		"
4	John Wanjau Kagiri	✓		0724837841		9/2/21
5	Titus Gitonga	✓		0740221236		"
6	Geoffrey Muiruri	✓		0769621736		"
7	Jane Mbogo		✓	0727085391		9/2/2021

THANK YOU FOR YOUR COOPERATION.

3

GROUP 4

PUBLIC VIEWS QUESTIONNAIRE

The Department of Agriculture, Livestock and Fisheries Nyandarua County, through the Kenya Climate Smart Agriculture Project (KCSAP) has contracted an Environmental Impact Assessment (EIA) expert to carry out an Environmental and Social Impact Assessment (ESIA) report for the PROPOSED POTATO STORAGE FACILITY FOR LANYANA COOPERATIVE SOCIETY ON PLOT NO. NYANDARUA/ MURUAI/ 2365, NYANDARUA COUNTY. Public participation is a requirement according to Regulation 17 (1) of the EIA/ Audit Regulations of 2003.

The objective of public participation is to ensure that all people who are likely to be affected by a proposed project, either positively or negatively are fully informed, and given an opportunity to raise their concerns.

The contracted expert kindly seeks the views and opinions of the community likely to be affected by the proposed potato storage facility project. You are requested to fill in this form, thus providing information helpful in decision making, in regard to the proposed project. Your views will be handled with confidentiality. Your cooperation is highly appreciated.

1. **Are there BENEFITS (positive impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☑ (b) No ☐

If YES, please name them:

- Price will be controlled.
- Employement.
- Development in Society
-
-
-

2. **Are there ENVIRONMENTAL PROBLEMS (negative impacts) you think will arise from the establishment of the proposed development?**

(a) Yes ☐ (b) No ☑

1

GROUP 4

If YES, please name them:

- Recover the damaged ~~Sites~~ Sites
- Burial the waste products
-

3. Are there SOCIAL RELATED PROBLEMS you think will arise from the establishment of the proposed development?

(a) Yes ☑ (b) No ☑

If YES, please name them:

- if all society are not included
- if ~~all~~ farmers are not educated in the processing ways.
- payments procedure if not agreed.

4. Suggest ways in which the negative problems identified in 2 and 3 above can be addressed

- No problems because it is agreed in Society and in public participation.

2

GROUP 4

.....

.....

.....

5. **In your opinion, should the proposed project be implemented?**

(a)Yes ☑ (b) No ☐

If NO, please explain:

.....

.....

.....

CONTACT DETAILS

No	NAME	GENDER		PHONE NO.	SIGNATURE	DATE
		Male	Female			
1	Zakaria M. Kathoni	✓		0706219837		9/02/2021
2	LINCOLN GACHOKI	M		0710613195		9/2/202
3	David Githaandi	M		0704456286		9/2/2021
4	TERESIAH WAMBUI MWANGI		✓	0728207270		9/2/2021
5.	Philip N. WANJARA	M		0723 464893		9/02/21
6.	Jane w. Muikamba		F	0721891308		9/02/21
7	FRANCIS MUENGE	M		0724459631		9/02/21

THANK YOU FOR YOUR COOPERATION.

3

Appendix 4: Expert practising licenses

nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

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

M/S Dr. Peter Kingori Gakai
(individual or firm) of address

P.O. Box 6871-00200, Nairobi

capacity of a (Lead Expert/Associate Expert/Firm of Experts) Lead Expert

registration number 2147

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

Issued Date: 4/23/2021

Expiry Date: 12/31/2021

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified

THIS LICENSE WAS SUBMITTED AS PART OF SPR FOR LANYANA COOPERATIVE SOCIETY FOR POTATO STORAGE FACILITY PROPOSED IN NYANDARUA COUNTY MAY 2021

FORM 7 (r.15(2))

nema

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/12079

Application Reference No: NEMA/EIA/EL/16185

M/S **MILLICENT WANJIKU NDIRANGU**
(individual or firm) of address

P.O. Box 2189-20300, NYAHURURU

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Associate Expert**
registration number **8955**

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

Issued Date: **2/25/2020** Expiry Date: **12/31/2020**

Signature…..

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2008 Certified

Appendix 5: Land ownership documents

a) Title deed

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

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

THE REGISTERED LAND ACT

(*Chapter* 300) (REPEALED)

Title Deed

MLS/TD/02/A2/02 No. 3521505

GPK (SP) 7331—1m—05/2019

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

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

THE REGISTERED LAND ACT

(*Chapter* 300) (REPEALED)

Title Deed

Title Number NYANDARUA/MURUAI/2573

Approximate Area 0.405 Ha.

Registry Map Sheet No. 6

This is to certify that LANYANA FARMERS COOPERATIVE LIMITED REG. NO. CS/25597

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

GIVEN under my hand and the seal of the ...NYANDARUA.....District Land Registry this.....30th.....day of .....JULY....., 20 21

W. N. Muguro 22U

.....

Land Registrar

(To be completed only when the applicant has paid the fee of Sh. 125)

At the date stated on the front hereof, the following entries appeared in the register relating to the land:

EDITION: 1
OPENED: 27.7.21

PART A—PROPERTY SECTION

REGISTRATION SECTION	EASEMENTS, ETC.	NATURE OF TITLE
NYANDARUA/MURUAI		
PARCEL NUMBER		
2573		
APPROXIMATE AREA		
0.405 Ha.		ABSOLUTE
REGISTRY MAP SHEET No.		
6		

SUBDIVISION OF 2365

PART B—PROPRIETORSHIP SECTION

ENTRY No.	DATE	NAME OF REGISTERED PROPRIETOR	ADDRESS AND DESCRIPTION OF REGISTERED PROPRIETOR	CONSIDERATION AND REMARKS	SIGNATURE OF REGISTRAR
2.	27.7.21	LANYAN FARMERS COOPERATIVE LIMITED REG NO.		CS/25597	
3.	30.7.21	TITLE DEED		ISSUED	

PART C—ENCUMBRANCES SECTION

Entry No.	Date	Nature of Encumbrance	Further Particulars	Signature of Registrar

W. N. Muguro 220

Land Registrar

b) Official land search certificate

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

REPUBLIC OF KENYA

THE LAND REGISTRATION ACT

THE LAND REGISTRATION (GENERAL) REGULATIONS, 2017

CERTIFICATE OF OFFICIAL SEARCH

TITLE NO. N'DA/ MURUAI /2573

SEARCH NO. 1680/8/21

On the 24th day of AUGUST 20 21 the following were the subsisting entries on the register of the above-mentioned title:

Part A — Property Section (easements, etc.)

Nature of title ABSOLUTE

Approximate area 0.405 (ZERO DEC FOUR ZERO FIVE) HA

Part B — Proprietorship Section 2. 27-7-21 LANYANA FARMERS COOPERATIVE LIMITED

Name and address of proprietor 3. 30-7-21 TITLE DEED ISSUED

Inhibitions, cautions and restrictions

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

Nil

The following applications are pending:

(a)

(b)

(c) Nil

(d)

The following certified copies are attached as requested:

(a)

(b) Nil

(c)

(d)

Date 31st day AUGUST 2021

Signed by the Registrar Seal

Name: W. N. Muguro LRO

Signature:

GPK (L)012—400m—7/18

Appendix 6: Lanyana Farmers' Cooperative Society Registration Certificate

REPUBLIC OF KENYA

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

Certificate of Registration

REGISTRATION No. CS/25597

I hereby certify that the society under the name of

LANYANA FARMERS CO-OPERATIVE SOCIETY LIMITED

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

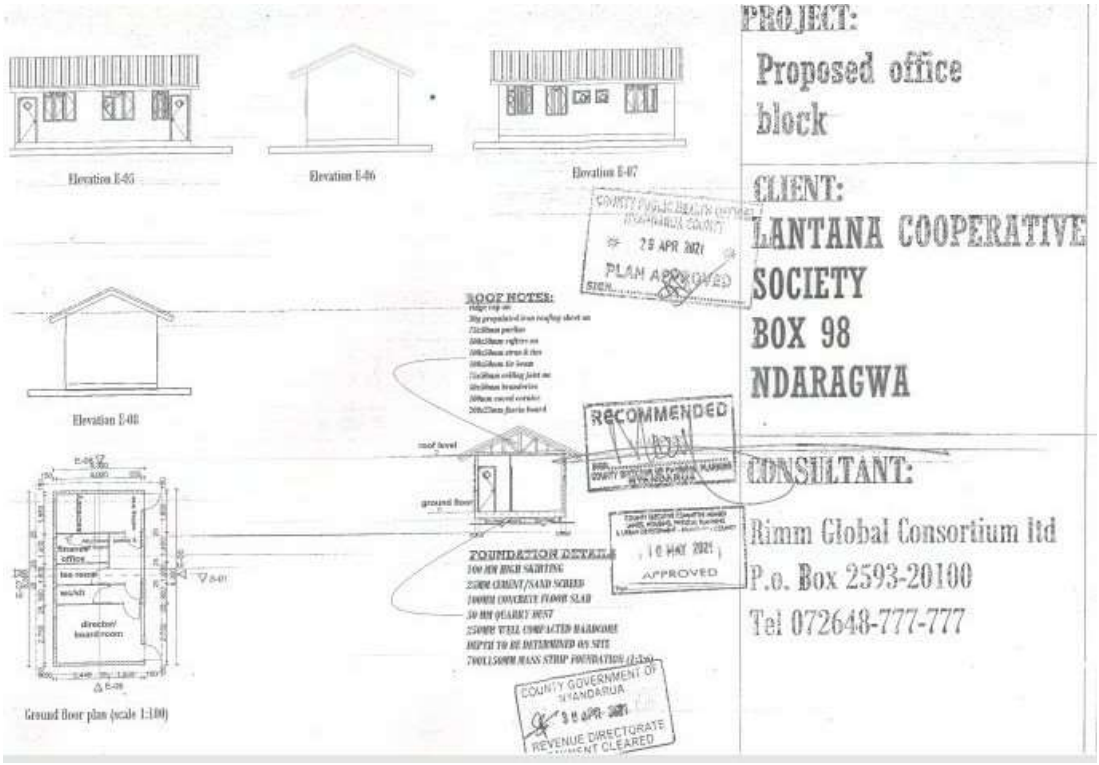
Given under my hand at Nairobi

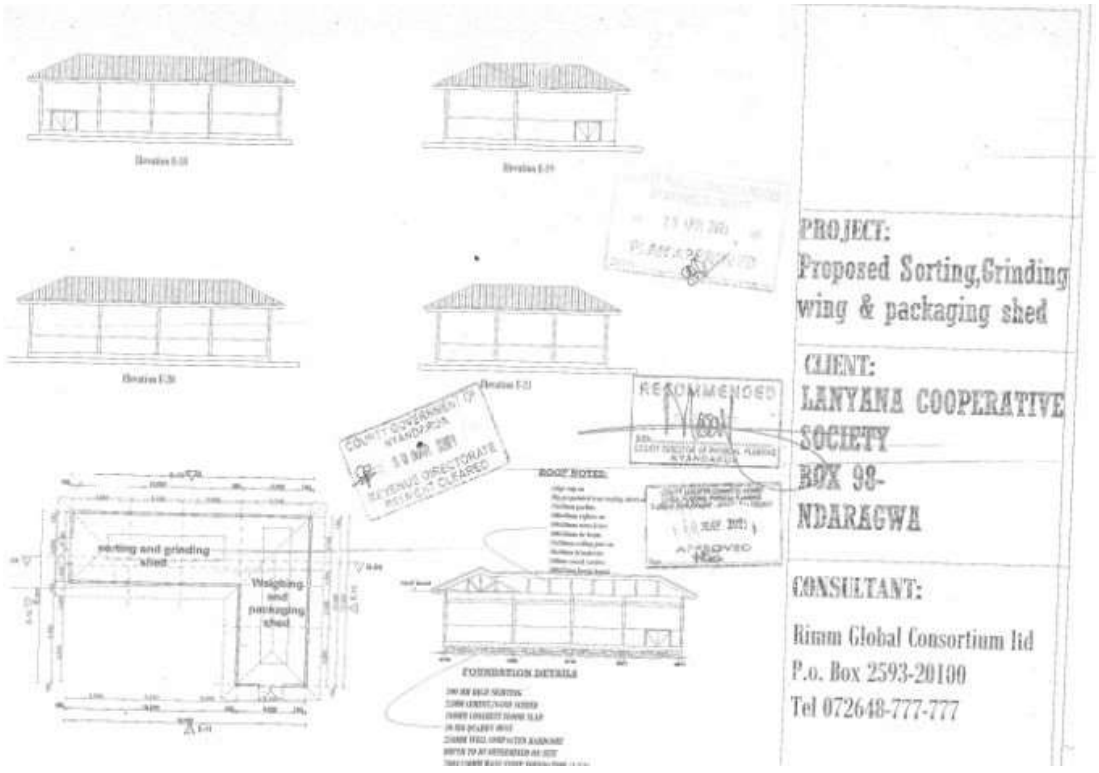
this...9TH... day of....DECEMBER....., 20..20.....

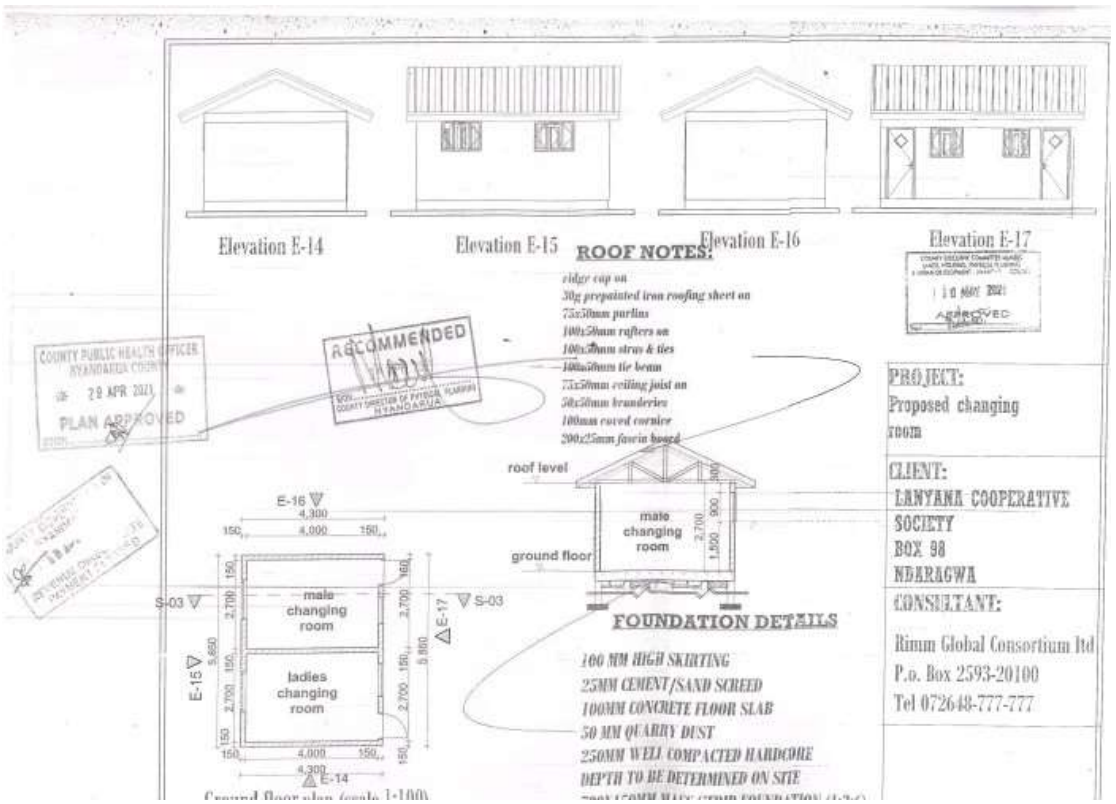
GEOFFREY N. NJANG'OMBE
Ag. *Commissioner for Co-operative Development*

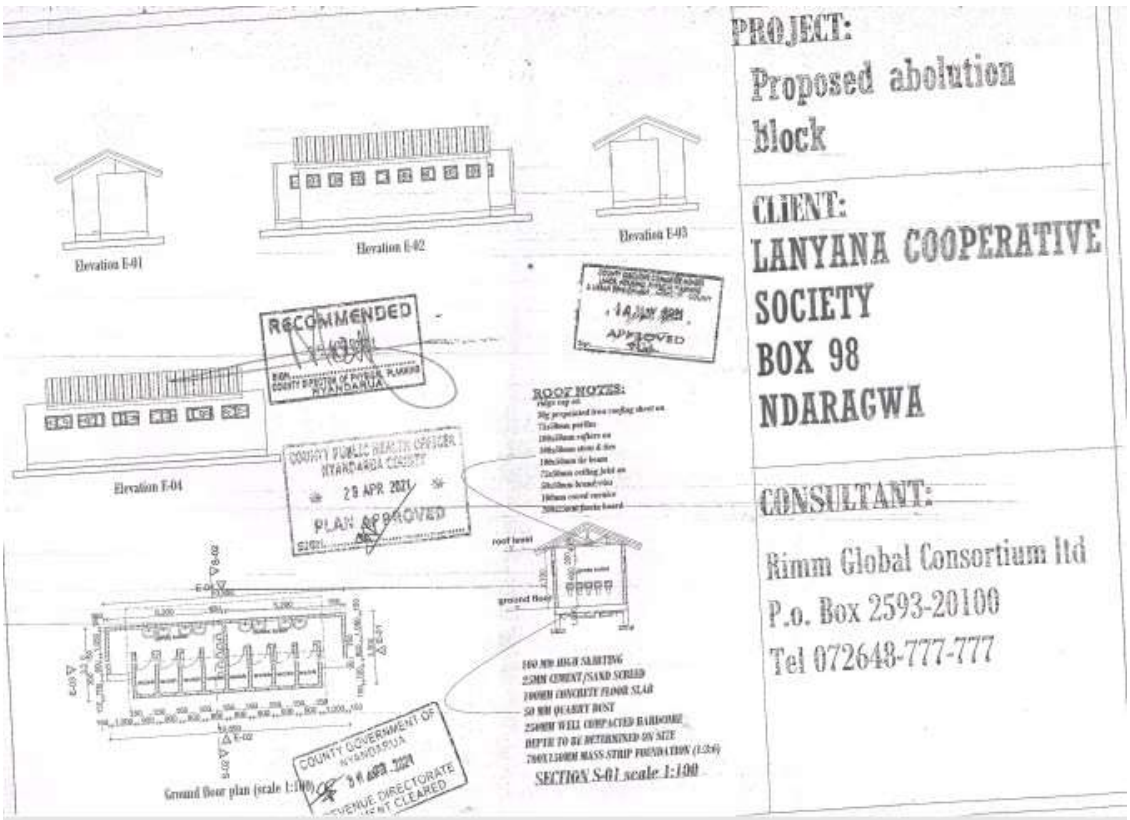
K (L) 0425—7m—11/19

Appendix 7: Architectural Drawings






Elevation E-14
Elevation E-15
Elevation E-16
Elevation E-17
ROOF NOTES:
ridge cap on
50g prepainted iron roofing sheet on
75x50mm purlins
100x50mm rafters on
100x50mm straw & ties
100x50mm tie beam
75x50mm ceiling joist on
50x50mm brunderies
100mm coved cornice
200x25mm fascia board
RECOMMENDED
COUNTY PUBLIC HEALTH OFFICER
NYANDARUA COUNTY
29 APR 2021
PLAN APPROVED
roof level
ground floor
male changing room
ladies changing room
E-16
E-15
E-14
E-17
S-03
FOUNDATION DETAILS
100 MM HIGH SKIRTING
25MM CEMENT/SAND SCREED
100MM CONCRETE FLOOR SLAB
50 MM QUARRY DUST
250MM WELL COMPACTED HARDCORE
DEPTH TO BE DETERMINED ON SITE
PROJECT:
Proposed changing room
CLIENT:
LANYANA COOPERATIVE SOCIETY
BOX 98
NDARAGWA
CONSULTANT:
Rimm Global Consortium ltd
P.o. Box 2593-20100
Tel 072648-777-777


Elevation E-01
Elevation E-02
Elevation E-03
Elevation E-04
RECOMMENDED
COUNTY PUBLIC HEALTH OFFICER
NYANDARUA COUNTY
29 APR 2021
PLAN APPROVED
ROOF NOTES:
roof level
ground floor
160 MM HIGH SKIRTING
25MM CEMENT/SAND SCREED
100MM CONCRETE FLOOR SLAB
50 MM QUARRY DUST
250MM WELL COMPACTED HARDCORE
DEPTH TO BE DETERMINED ON SITE
700X350MM MASS STRIP FOUNDATION (1:2:4)
SECTION S-01 scale 1:100
Ground floor plan (scale 1:100)
COUNTY GOVERNMENT OF NYANDARUA
REVENUE DIRECTORATE
PROJECT:
Proposed abolution block
CLIENT:
LANYANA COOPERATIVE SOCIETY
BOX 98
NDARAGWA
CONSULTANT:
Rimm Global Consortium ltd
P.o. Box 2593-20100
Tel 072648-777-777

Appendix 8: Summarized Bq

LANYANA COOPERATIVE SOCIETY LTD SUMMARISED BQ

	ITEM	AMOUNT
1.	COLD STORE	8,220,690
2.	GRADING SHED	704,300
3.	OFFICE AND SANITARY FACILITIES	7,065,515
4.	FENCING	683,200
	TOTALS	**16,673,705**