

**ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)
FOR CONSTRUCTION OF FACILITIES FOR THE CASSAVA
PROCESSING HUB, RICE PROCESSING HUB AND WAREHOUSES
FOR MAIZE STORAGE**



NIGERIA FOR WOMEN PROJECT

THE OGUN STATE NIGERIA FOR WOMEN PROJECT (NFWP)

May 2024

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Acronyms and Abbreviations

EA	Exchangeable Acidity
EC	Electrical Conductivity
ECEC	Effective Cation Exchange Capacity

BOD	Biochemical Oxygen Demand
BOQ	Bill of Quantities
CAT	Convention against Torture
CBO	Community Based Organization
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
C-ESMP	Contractors Environmental and Social Management Plan
CSO	Civil Society Organisations
CO	Carbon Monoxide
CoC	Code of Conduct
CRA	Child Right Act
CRC	Convention on the Rights of the Child
CRPD	Convention on the Rights of Persons with Disabilities
ECEC	Effective cation exchange capacity
ESHS	Environmental and Social Health and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESSU	Environmental and Social Safeguard Unit
FGD	Focus Group Discussion
FMEnv	Federal Ministry of Environment
FMF	Federal Ministry of Finance
FMWASD	Federal Ministry of Women Affairs and Social Development
FPMU	Federal Project Management Unit
GBV	Gender Based Violence
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HSE	Health Safety and Environment
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ITCPT	Improved Traditional Cassava Processing Technology
LGAs	Local Government Areas
NFWP	Nigeria for Women Project
NO ₂	Nitrogen dioxide
NDHS-	Nigeria Demographic and Health Survey
NESREA	National Environmental Standards and Regulations Enforcement Agency
NGO	Non-Governmental Organization
OHS	Occupational Health and Safety
PCU	Project Coordinating Unit
PDO	Project Development Objective
PH	Potential of Hydrogen
PIU	Project Implementation Unit
PPE	Personal Protection Equipment
PPM	Parts per Million
SEA	Sexual Exploitation and Abuse
SPC	State Project Coordinator
SPCU	State project coordinating Unit
SPM	Suspended Particulate Matter

VAPP	Violence against Persons Prohibition
VOC	Volatile Organic Compounds
WAG	Women Affinity Groups
WB	World Bank

1.0 EXECUTIVE SUMMARY

The Government of Nigeria has requested the World Bank to support the design of a national program on “Nigeria for Women Project” with an objective to support women’s improved livelihood opportunities in targeted communities of Nigeria.

The NFWP is a Federal Project which is being implemented, in its first phase, in six (6) States namely, Abia, Akwa Ibom, Taraba, Ogun, Niger and Kebbi.

Nigeria has experienced poverty reduction in recent years, but this varies considerably across geographic areas and demographic groups due to entrenched inequalities. Poverty remains a major challenge in the rural areas where 50 percent of the population is currently living below the poverty line. Significant rural-urban differences in income distribution impact women, particularly the 54million of Nigeria's 80.2 million women that live and work in rural areas and provide 60-79 percent of the rural labor force. Therefore, increased rural poverty has translated into increased female poverty. Gender gaps in economic activities across Nigeria are largely explained by four main institutional and market failures, namely: (i) Unfavorable social norms; and (ii) discriminatory formal and informal institutions; (iii), information and knowledge asymmetries, and (iv) non-competitive markets. The NFWP responds to a number of these priorities;

- (i) Re-orienting culture and sensitization to change gender perceptions and stereotypes;
- (ii) Improving women's access to critical resources such as education, capital, labor, entrepreneurial skills and control over use of their time;
- (iii) Promoting the empowerment of women and integrating gender within key sectors; and
- (iv) Institutionalizing women's empowerment through gender sensitive budgeting, gender benchmarking and gender impact assessment especially of public financial systems and building strategic partnerships.

Nigeria for Women Project demonstrates the impact of a multi-dimensional and a medium to long-term approach to overcome the main institutional and market failures limiting women's economic outcomes in Nigeria. The project intends to achieve this by implementing, across multiple local contexts across Nigeria, approaches that have proven to contribute to women's economic empowerment.

World Bank projects are guided by Environmental and Social Safeguards Guidelines and Operational Policies. This enables the integration of environmental and social

considerations into the development, planning and execution of projects. These were used as a guide to support the environmental and social (E&S) risk management of this proposed intervention. Among all the World Bank environmental and social safeguard policies, four **Operational Policies and Bank Procedures (BPs) were triggered** under the Nigeria for Women Project, namely:

- **OP 4.01 Environmental Assessment** which covers impacts on the environment (air, water and land), human health and safety, physical cultural resources, and global transboundary and environmental issues.
OP 4.11 Cultural Physical Resources which provides cultural heritage guidelines to avoid or mitigate adverse impacts of development projects.
- **Pest management (OP 4.09)**. Agricultural activities that form a part of the livelihood opportunities have pest management risks.
- **Involuntary resettlement (OP 4.12)**. Interventions could lead to restriction of access to sources of livelihoods. There could be encroachment to farmlands.

Scope of the Work

The scope of work is to prepare an Environmental and Social Management Plan (ESMP) for the Construction of Facilities for The Cassava Processing Hub, Rice Processing Hub and cassava warehouses for Maize Storage for the Ogun State Nigeria for Women Project (Ogun-NFWP) in line with the guidelines of the World Bank/IDA. This ESMP comprises the potential environmental and social issues that will accompany the intervention and also proposes actions aimed at eliminating, offsetting, or reducing the adverse impacts to acceptable levels. The ESMP also includes the appropriate mitigation measures, monitoring, and institutional actions to be taken before, during and after implementation of the proposed intervention. It also includes the measures required to implement these actions, costings, and responsibilities, and measures for addressing the adequacy of the monitoring and institutional arrangements in the intervention sites.

The Proposed Intervention

The proposed intervention by the Ogun NFWP is for the construction and operation of 51 facilities; 6-cassava production hubs, 38-cassava processing hubs, 2-maize production and finally the construction of 5-maize warehouses. All these sub-projects are proposed to be constructed in Yewa, Odeda and Ijebu east LGAs of Ogun State and the World Bank is the main financier of the project. The main stakeholders of the project are:

- The Nigeria For Women Project: The client;
- The women affinity groups & collectives of Odeda, Yewa & Ijebu North LGAs;
- A contractor who will be selected through a national competitive tender.

The construction works will include site clearance, excavation of the earth for the building foundation, disposal of excavated materials from the site, filling to level up foundation, laying of foundation blocks and concrete and reinforcement works for the foundation. The Structural Framework will also entail blockwork, concrete works, roof carpentry and covering. Finishing works will involve joinery works, glazing works, wall, floor and ceiling finishes, and plumbing and electrical fixtures. The external works will include minor horticulture & landscaping works and waste disposal.

Objectives of The Environmental and Social Management Plan (ESMP)

The objective of this Environmental and Social Management Plan (ESMP) is to anticipate the possible environmental & social changes to the immediate environment that may arise as a consequence of a proposed development project. The ESMP examines how the proposed project could affect the people, their biophysical environment and their livelihoods. Consequently, keen attention has been paid towards ensuring that methodology for the baseline data gathering process has been carefully implemented to provide accurate information of the existing site conditions so as to ensure that changes that are likely to occur from the effects of the new developments are distinguished from changes through random natural processes or by natural succession.

Thus, the ultimate goal of this ESMP is to avoid or, when avoidance is not possible, to minimize and mitigate adverse project impacts on the environment and affected people, and to help strengthen safeguard systems and develop the capacity to manage environmental risks.

The plan will outline the possible environmental and social risks and the impacts (positive or negative) associated with a development intervention. During project implementation, the plan will help to define measures and processes to effectively manage risks and enhance positive impacts. The specific objectives of the ESMP include the following:

- Identification of possible direct and indirect significant adverse impacts associated with the proposed building construction.
- Assessment and evaluation of potential impacts of the proposed project on the human and physical environment.
- Provision of practical, socially acceptable, economical, and technically feasible environmentally sustainable measures to address the potential adverse impacts.
- To ensure that construction complies with all Environmental regulations that constitutes construction in Nigeria.

Benefits of the ESMP

The relevance of the ESMP reveals how vital it is to both the proponent and the users.

From this perspective, the benefits of this study include:

- This ESMP serves as a meeting point for all stakeholders for dialogue to address the problems, impact and mitigation measures of the proposed road reconstruction project through consultation processes. It would serve as a planning and decision-making tool that makes for proper accounting and inclusion of socio-economic, health and environmental issues and concerns into project designs and implementation.

- It is a cost saving approach or efforts through the achievement of long-term management objectives and elimination of financial liabilities and environmental risks that are associated with the building project.

Approach and Methodology for ESMP

The approach and methodology adopted for the ESMP include:

- Bibliographic research / literature review
- Site inspection
- Data collection
- Stakeholder Consultation.
- Reporting.

Relevant Policies, Legal and Administrative Frameworks

Sustainable Development rather than mere development has been the emphasis of every nation, especially since after the Rio declaration in 1992. Thus, all over the world there has been growing awareness on environmental protection, resources conservation and sustainability. Against the foregoing background, various regulatory bodies locally and internationally have made legislations, regulations and guidelines that would enhance environmental protection and sustainability. The Federal and States Ministries of Environment have regulations hinging on environmental protection, restoration and conservation.

Statutory regulations exist which require that a development permit for any new project and those that require the proponent of a major/mandatory project to carry out an ESMP prior to the execution of the project. This ESMP is carried out within the framework of both local and national environmental guidelines and regulations. The relevant national policies to guide the implementation of the proposed building complex include the following:

Legal Framework

Federal Ministry of Environment operates the EIA Act No. 86 (1992) to ensure that environmental issues are given adequate consideration by any organizations or persons embarking on new projects. To assist proponents in attaining the high demand of FMENV for good Environmental Management and Social Management Plan (ESMP), FMENV has published a number of guidelines and regulations. Some of the relevant national laws, legislation and policies aimed at protecting the environment and particularly to guide the preparation of the ESMP for the proposed project include the following:

For the Environment:

- National Interim Guidelines and Standard for Industrial Effluents, Gaseous Emissions and Hazardous Waste Management in Nigeria (FEPA, 1991).
- National Regulations (S.1 15) for the management of solid and hazardous waste (1991).
- National Environmental Protection (Effluent limitation) Regulation (S.1. 8, 1991)
- National Environmental protection (Pollution Abatement in Industries and facilities generating waste) regulation (S.1.9, 1991)
- Harmful waste (Special criminal provision, etc.) decree No. 42, 1988
- Environmental Impact Assessment Decree No. 86,1992
- Federal Environmental Protection Agency Decree No. 58, 1988
- Environmental Impact Assessment procedural guidelines (1995)
- Environmental Impact Assessment sectorial guidelines for the oil industry (1995).

These

documents have been consulted and used appropriately in the preparation of this Experiment.

- Forestry act 1958 controls indiscriminate deforestation
- Land use decree/Act 1978/79 have provisions guiding land acquisition
- World Bank Safeguards policy.

For Social:

- The National Action Plan for the Implementation of United Nations Security Council Resolution 1325 (2009)
- The National Gender Policy (2010)
- The Child Rights Act (CRA, 2003), and the Violence Against Persons Prohibition Act (VAPP, 2015).
- The VAPP law was also domesticated by Ogun State as the Ogun VAPP law in 2017, which was subsequently gazetted on October 18, 2018.

Institutional Framework

The protection of the environment is a major priority for the Government of Nigeria, which has led to the establishment of institutions and legal policies to regulate and monitor developments in a sustainable way. Intervention project will therefore comply with all the legal and regulatory frameworks for environmental management, including the National Policy Framework, Institutional Framework and the World Bank's Environmental and Social Safeguard Policy.

- The National Policy Framework: these are the policies that provide guidelines for the implementation of projects. Such policies include: The Federal Ministry of Environment decree 86 (1992) to ensure that environmental issues are given adequate consideration by any organizations or persons embarking on new projects. The Federal Environmental Protection Agency Act of 1988, with the aim to maintain and develop a pleasant, safe, and clean physical environment for all human settlements.
- The World Bank's Environmental and Social Safeguard Policy: This enables the integration of environmental and social considerations into the development, planning and execution of projects. The project has triggered two of the operational policies, i.e. OP

4.0.1 Environmental Assessment and OP 4.11 Cultural Physical Resources.

- The Institutional Framework: these consists of regulatory institutions that streamline the activities of construction projects. Institutions such as The Ogun State Ministry of Works will help in guiding the successful completion of the project.

Overview of environmental & social baseline

An environmental baseline study was carried out to establish a benchmark of existing environmental conditions in the proposed project site prior to the commencement of the project against which potential impacts of the planned project on the site could be assessed. The, the results of analysis of one-season environmental media samples and in order to ensure that the sampling is representative 10 top soil and 10 sub soil samples were collected from a total of 16 sites in Ijebu North-East LGA, in Odeda LGA, 20 top soils and 20 sub soils were collected from 22 sites and in Yewa north LGA, 20 top soil and 20 sub soil were collected from 23 sites, thereafter tested to determine air, soil & water quality comprising results of analysis of air, soil and water samples taken. Analysis of samples were undertaken at the laboratory of the Lagos State Environmental Protection Agency (LASEPA). The outcome of the air quality tests showed that sites in Yewa, Odeda and Ijebu North east reported values that were below the FMEnv limits for all the parameters considered.

Noise level was measured using the decibel meter. As presented in Table 6, an average noise pollution level (Lnp) of 35.25 dB (A) was obtained for the area. However, the noise level of the project area is expected to rise mainly during the site-clearing and construction phases to be occasioned by heavy-duty vehicles as well as other machines that will be engaged during these phases.

The textural class of the soil of the sites around the Yewa, Odeda & Ijebu east LGAs are all similar in composition and are majorly sandy loam, and slightly acidic in nature as revealed by the soil PH in water.

All the ground water within the sites are safe with respect to the determined microorganism, however, the surface water had concentrations of *E. coli sp.*, *Salmonella sp.* and *Shigella sp.*

Socioeconomics

Questionnaire administration was carried out by purposive sampling. Using a population size of 1m for a finite population (Krejcie and Morgan (1970), recommend a sample of 384 respondents to represent 1m persons). For this study, a total of 588 questionnaires were administered in the three LGAs; to enable robust data and information gathering, 147 respondents were interviewed in Iworo, Atan Odosenlu, Ogbogbo, Idagunre, Odo Sebor, Erigo, Isonyin, Erunwon, Imuroko, Iyaw, & Ilese communities of Ijebu East LGA.

From the findings, 90% of the respondents are married. This shows communities with high dependency ratio, suggesting that the proposed sub-projects intervention will essentially help in poverty reduction and livelihood improvement among members of the communities. 54.74% of persons interviewed have primary school education, while 24.57% have O/Level and 0.86% have tertiary education. 18.97% have no formal education and only 1% have attended Islamic school. This information will help in future engagements, project sensitization and communication plans. The survey revealed that majority of the persons interviewed were farmers (15%), while fifteen percent (15%) were traders and twenty-four and a half percent (24.5%) of the remaining respondents have their own single proprietorship businesses. The communities have market which run every five days giving trade opportunities to many of the women who are involved in petty trading. There also exist good numbers of public schools which gives opportunities for employment of persons from the community as teachers and school staff from the project communities. The main source of water for drinking and domestic use, among many residents here were private or individual boreholes, where majority obtain their water for household uses. Some of the residents stated that they drink water from the boreholes most of the time. Several others receive their domestic water from rainwater catchment, nearby streams or rivers. Some other residents stated that they prefer to buy and drink sachet water. The transport available around the project sites are mainly vehicular types that connect the rural areas to the major towns such as

the LGA headquarters, while tricycles and motorcycles were the preferred transportation mode for intra-community transportation. Details are presented in Chapter three of this report.

Description of Environmental and Social Impacts

The construction and operation of the cassava production & processing hubs, rice production and processing hubs and maize storage warehouses have potential negative effects to the physical environment and social wellbeing of the communities as well as natural habitats. The potential negative impacts from building construction projects could include: environmental pollution from construction activities, risk to health and safety of the residents and employees, increased demand of construction materials such as water, wood, gravel and hard stones; increased run off, socio-cultural changes, changes of domestic and wild animals access to water point, demolition of structures, interference with natural habitats and ecosystems, increased traffic, increased ambient air pollution, increased potential for road accidents, increased surface run off and associated disasters among other impacts. Other anticipated impacts from the construction intervention will be disruption of breeding sites and habitats, degradation of land, vegetation, introduction of exotic species and possible interference with natural ecological balance, especially within the project area.

In view of the above observation, this ESMP will situate environmental concerns in the rightful place of being an integral part of the planning and development process for this intervention as it facilitates the proponent to foresee potential project impacts that can be optimized or mitigated. This can be achieved through the proper implementation of the environmental and social management Plan and continuous monitoring. The study enables the environmental experts evaluate the current environmental status, opinion of the locals; and establish the potential social and economic benefits of the project. Appropriate remedy is then integrated in the project design and implementation and the effectiveness of the remedy is managed and monitored with the guidance of the Environmental and Social Management Plan.

This is however in line with the National Environmental Impact Assessment (EIA) Decree 86 of 1992 and other Federal and Ogun State Ministry of Environments' regulations and standards, activities of potential environmental and social impact identified with the proposed project are outlined under four (4) main phases of project activities; these are the Pre-Construction, Construction and Operation & Maintenance and Decommissioning phases.

Pre-Construction phase impacts

During the pre-construction phase, there is a risk of the likelihood of neglect of the environmental and social aspects and/or the preparation of unsatisfactory environmental studies, and the low consideration for environmental & social issues during the implementation of the findings and recommendations in this technical study. Furthermore, site selection could include some potential environmental and social concerns and impacts.

Key mitigation measures for these risks will be:

- Undertaking of necessary E&S studies
- Public and stakeholder consultation during site selection and preparation and validation of studies.
- Quality control and implementation of validation procedures for environmental studies and their dissemination.
- Occupational Health and Safety Issues
- Public Safety Issues.

Construction phase impacts

Risks and impacts at the construction phase will be site specific and could be a source of inconvenience for workers and all those living or working on the sites. Of these impacts, the most notable are:

Positives impacts

- Increased and improved economic activities around the project sites in the different of Yewa, Ijebu east and Odeda LGAs.
- Temporary employment opportunity, business opportunity.

Negatives impacts

- Loss of vegetation and impacts on fauna
- effects on the local microclimate
- Soil pollution, disturbance, and erosion.
- Air quality deterioration.
- Vibration and noise nuisance.
- Generation and disposal of solid waste.
- Water and sanitation
- Hygiene, health and safety of workers
- Occupational health and safety.
- Community Safety issues
- Risk of grievance and land resource conflict

Some of the key mitigation measures are:

- Clearing of only weeds and leaving shrubs that are not within the main construction design.
- Contractor required to suspend work activities and conduct of environmental audit for the construction projects that are in progress.
- Adopt sensitization programmes that will discourage community and contractor staff from adopting bush burning practices.
- Sensitize on use water to wet active areas for dust suppression and address air pollution issues.
- Ensure proper scheduling of use of machines for period when disruption of activities in community will be minimal to prevent noise pollution.
- Ensure that pollution sources are properly identified (e.g. oil leaks from vehicles etc.) before construction commences during JHA (Job Hazard Analysis) and containment measures provided.

- Use of Personal Protective Equipment (PPE) & developing and implementing a project specific Occupational Health and Safety Plan (OHSP).
- Cordoning or fencing off of project site & Positioning of safety warning signs to promote community safety.
- Undertake community sensitization meetings and stakeholder engagements to create cordial relationship with hosts community, obtain feedback and provide updates on grievance uptake channels.

Operation & Maintenance phase

During this phase, the intervention project activities, potential negative impacts might generally be due to:

Positive impacts

- Strengthening of value chain for cassava, rice & maize from the cassava production, processing and storage hubs.

Negatives impacts

- Waste management and disposal
- Emission of bad odors
- Traffic disruptions and accidents
- Occupational health and safety
- gender-based violence and sexual harassment
- Risk of spread of infectious diseases, respiratory and skin infections

The mitigation measures that will address these issues are:

- Have in place a periodic disposal management system for waste and follow the waste management plan included in annex.
- Provide and enforce the use of appropriate personal protective equipment (PPE) such as safety boots, reflective jackets, hard hats, nose masks, ear plugs etc.
- Comply with all site rules and regulations.
- Use of caution signs in the operation of vehicles and equipment

- Regulation of speed for construction equipment on site and transportation trucks to site.

Environmental and Social Monitoring Plan and Reporting

Environmental monitoring is an essential component to ensure the successful implementation of the ESMP. The environmental and social monitoring plan proposed for the implementation of the ESMP for these intervention sub-projects is outlined in this report to track the implementation of the mitigation measures for the identified impacts.

Grievance Redress Mechanisms

A Grievance Redress Mechanism already exists at FPCU and SPCU levels and this will provide the mechanisms through which proper resolutions of complaints will be carried out. The social safeguards team is already in place to ensure that complaints from affected persons are promptly addressed in a manner that is fair and acceptable to all parties in an amicable way to avoid or minimize litigation.

Estimated cost of the project

The environmental and social management actions is estimated at Fifty-Three Million, Two Hundred and Seventy-Three Thousand Naira Only (₦53,273,000.00), with its Dollar equivalent of Forty-One Thousand Seven Hundred and Seventeen Dollars Only (\$41,717) for the 51-collectives.

CHAPTER TWO: INTRODUCTION

2.0 Project Brief

The Government of Nigeria has requested the World Bank to support the design of a national program on “Nigeria for Women Project” with an objective to support women’s improved livelihood opportunities in targeted communities of Nigeria.

The NFWP is a Federal Project which is being implemented, in its first phase, in six (6) States namely, Abia, Akwa Ibom, Taraba, Ogun, Niger and Kebbi.

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- (v) Re-orienting culture and sensitization to change gender perceptions and stereotypes;
- (vi) Improving women’s access to critical resources such as education, capital, labor, entrepreneurial skills and control over use of their time;

- (vii) Promoting the empowerment of women and integrating gender within key sectors; and
- (viii) Institutionalizing women’s empowerment through gender sensitive budgeting, gender benchmarking and gender impact assessment especially of public financial systems and building strategic partnerships.

Nigeria for Women Project demonstrates the impact of a multi-dimensional and a medium to long-term approach to overcome the main institutional and market failures limiting women’s economic outcomes in Nigeria. The project intends to achieve this by implementing, across multiple local contexts across Nigeria, approaches that have proven to contribute to women’s economic empowerment.

This proposed intervention by the Ogun NFWP is for the construction and operation of the cassava production & processing hubs, rice production and processing hubs and maize storage warehouse facilities in Yewa, Odeda and Ijebu-east LGA that would be established as a hub for strengthening the cassava value chain to support the enterprise production in the different collectives, which is currently not available in Ogun State. Land for the intervention was leased for a minimum period of three years and where this was done, it followed due process. The World Bank is the main financier of the project. The main stakeholders of the project are:

- The Nigeria For Women Project: The client
- The women groups & collectives of Odeda, Yewa & Ijebu North LGAs.
- A contractor who will be selected through a national competitive tender.

Activities of the construction works will be carried out in these three LGAs, Odeda LGA, Yewa LGA and Ijebu East LGA.

Odeda LGA occupies an area of 1,560km² and has a population of 109,499 during the 2006 census. The LGA has its headquarters at Odeda and it is bordered by the Ibarapa to the North, Iddo LGA of Oyo State to the East, Obafemi LGA to the South and Owode LGA to the West. The people in Odeda are predominantly Egbas, while a few non-Yorubas are from the Fulani, Yoruba, Igedes from Benue State and Ito. The interventions planned for this LGA are construction of storage warehouse for the Ifesowapo maize storage and the construction of production facilities for Collectives in Ifesowapo in Olugbo, Irewolede and Irepolodun in Itesi, Itesiwaju and Tioluwalase in Olodo, Ifesowapo and Agbeloba in Alagbada, Egedola and Agbedola in Orileilugun, Ifesowapo in Osiele and Agbegbemi in Opeji.

Yewa LGA is located in the West of Ogun State and has its headquarters in Aiyetoro town. The LGA occupies a land area of 2,087km². The population during the 2006 census stood at 140,848 and the LGA is bordered to the north by Imeko/Afon LGA, to the South by Yewa South LGA, West by the Republic of Benin and East, partly by Abeokuta North and Ewekoro LGAs. The interventions planned for this LGA are the construction of warehouse for Ifelodun maize storage & construction of facility for Ola-oluwa maize storage, and the Arise & Shine maize storage.

Ijebu Northeast covers an area of 118km² with a population of 67,634 and is headquartered in the town of Atan. It is bordered by Ijebu-North to the North, Ijebu Ode to the South and Ijebu East to the East. The LGA has communities such as Iworo, Ibadan-Ijebu, Ipari-Nla, Egunsen, Odo-Kalaba, Odole, Okemeji Odogbolu, Rasonwa, Isade, Idona and Iken. Data collection for this ESMP study

commenced with a formal forum with the various stake holders likely to be impacted by the proposed project. The interventions planned for this LGA include preparation of the cassava production site for Temidire Cassava Collective, Igede and construction of Cassava Collectives in Ifeparapo Atan, Kebimapalu, Asejere in Sembola, Irewolede Odosenlu, Ifesowapo in Odonselu and Iworo, Emmanuel in Isoyin, Itesiwaju and Agbeloba in Eruwon.

These activities shall be undertaken according to the four main phases presented in Table 1.

Table 1: Construction Activities

s/n	Description of work	Task/Project Activity
1.	Pre-construction phase	<ul style="list-style-type: none"> • Environmental & Social Studies • Obtain relevant permits prior to commencement of construction work. • Preparation of environmental and social screening reports; • Preconstruction phase activities include among others: <ul style="list-style-type: none"> ○ Mobilization of workforce ○ Site preparation
2.	Construction Phase	<ul style="list-style-type: none"> • Earthworks, Setting out, excavation & groundworks. Structural Framework <ul style="list-style-type: none"> • Substructure works. this includes clearing of the project site, excavation of the earth for the building foundation, disposal of excavated materials from the site, filling to make up levels, laying of foundation blocks and concrete and reinforcement works for the foundation. • Blockwork: laying of blocks for the building frame • Concrete works: this includes all reinforcement works for columns, beams and walls, formwork to cast columns, beams and wall concrete, and pouring of concrete in columns, walls and beams.

s/n	Description of work	Task/Project Activity
		<p>Finishing Works</p> <ul style="list-style-type: none"> • Roof Carpentry and Covering: this includes timber members to be used for carpentry and installation of roofing sheets. • Joinery works and this includes installation of doors and other partition works • Glazing works: this includes installation of glazed windows and frames. • Wall finishes: this includes plastering, wall tiling, and painting works. • Floor finishes: this includes floor tiling works. • Ceiling finishes: this includes installation of ceiling. • Furniture and equipment: this include the installation of laboratory benches, office workstations and furniture etc. • Plumbing and Electrical fixtures: this includes all pipe works for electrical and plumbing works, electrical wiring, installation of sanitary appliances and installation of electrical fittings. <p>External works:</p> <ul style="list-style-type: none"> • Waste Disposal: this includes the construction of soak-aways and the disposal of soil and liquid waste, provision of dedicated bins for refuse disposal.
3	Operations & Maintenance Phase	<ul style="list-style-type: none"> • Operations and maintenance phase activities include: • Housekeeping; • Waste management (collection and disposal); • Maintenance and repair works; and • Materials management and storage (including personal protective equipment, etc.) • Operation of cassava production hubs.
4	Decommissioning phase	<ul style="list-style-type: none"> • Removal of construction equipment; • Disposal of construction/cultivation spoil and waste in general; • Dismantling of temporary work camp of the contractor; and; • Waste management.

The cassava production hubs that would be constructed will comprise integrated facilities with wet areas for milling, grinding and processing and dry mill areas for sieving and frying of milled cassava. It would also have semi wet areas for peeling, washing and soaking with loading docks for inspection and sorting, while the cassava processing facility that would be constructed will comprise integrated facilities with wet areas for milling, grinding and processing and dry mill areas for sieving and frying of milled cassava. It would also have semi wet areas for peeling, washing and soaking with loading docks for inspection and sorting. On the other hand, the maize storage warehouses that would be

constructed will comprise of integrated facilities with wet areas for milling, grinding and processing and dry mill areas for sieving and frying of milled cassava. It would also have semi wet areas for peeling, washing and soaking with loading docks for inspection and sorting. Consequently, this environmental management plan will be implemented throughout the pre-construction, construction, operational and decommissioning phases of the intervention and these will include the following:

- Identify and evaluate the environmental and social impacts (positive and negative) of the project on the components of the biophysical, socio-economic and human environment.
- Identify and characterize all the environmental, socio-economic and human issues that characterize the project's area influence.
- General Occupational Health, Safety, Environment and Social Issues which would require measures to adhere to the various Occupational Health, Safety, Environment and Social standards in Nigeria to prevent accidents and incidents from workers engaged in construction, handling of tools and equipment, transportation of materials and protection of occupancy during operational stages.
- Determine the pollution prevention approach for identifying of waste types and streams and thereafter monitoring of waste Management (Solid and Liquid), water supply, sewage, and oil spillage will be checked critically.
- Developing of monitoring plans. This would include measures to identify future environmental impact will be implemented during the Pre-Construction, Construction and Occupation Phase. Activities to be monitored include Vegetation clearing, air pollution, noise, traffic, occupational health and safety.

2.2 Rationale for ESMP

The World Bank Safeguards operational policies and the Nigerian Environmental laws require developmental projects to be adequately planned, executed, managed and monitored in a manner that cause minimal adverse environmental and social impacts. The NFWP has been classified as “Category II,” or, under the World Bank’s Operational Policy on Environmental Assessment (OP/BP4.01), as “Category B”, on the basis of the environmental and social impacts associated with the identified sub-projects.

The proposed investments and activities under the NFWP are likely to trigger some of these World Bank’s E&S Standards and may require EIA under Nigeria’s EIA Act 86 of 1992 (EIA Act Cap E12 LFN 2004). These ESMPs, therefore, will provide technical guidance to the NFWP on the environmental, social assessment and management approaches required to comply with the World Banks Safeguard Policy requirements and the Nigeria’s EIA legislation.

2.3 Scope of the ESMP

The scope of this Assignment is to prepare an Environmental and Social Management Plan (ESMP) for the construction and operation of the cassava production & processing hubs, rice production and processing hubs and maize storage warehouses for Women Project (Ogun-NFWP) in line with the guidelines of the World Bank/IDA. This ESMP comprises the potential environmental and social issues that will accompany this intervention and also proposes actions aimed at eliminating, offsetting, or reducing the adverse impacts to acceptable levels. The ESMP also includes the appropriate mitigation measures, monitoring, and institutional actions to be taken before, during and after implementation of the proposed intervention. It also includes the measures

required to implement these actions, costings, and responsibilities, and measures for addressing the adequacy of the monitoring and institutional arrangements in the intervention sites.

2.4 Objectives of the ESMP

The specific objective of this ESMP is to assess the potential environmental and social impacts associated with the construction and operation of the proposed intervention and to identify the positive impacts and adverse impacts of the intervention. Thereafter, it provides measures to address the adverse impacts, recommend institutional arrangements for the responsibilities and also monitor E&S compliance.

2.5 Approach and Methodology

The approach and methodology adopted for the ESMP include:

- Bibliographic research / literature review
- Site inspection
- Data collection
- Stakeholder Consultations.
- Reporting.

2.6 Bibliographic research / literature review

The following project related document was reviewed for the drafting of the ESMP:

- Environmental & Social Management Framework (ESMF) for the Nigeria for Women Project (NFWP), 2018.

2.7 Site inspections

The objectives of the site inspections included:

- The observation of the physical characteristics of the proposed construction sites and their immediate environs.
- Identification of potential affected people and land use.

The location of the 51-sites (annex 2) comprising 6-cassava production & 38-cassava processing collectives, 2-maize production collectives as well as the construction of the 5-cassava warehouses is as presented in Figure 3.

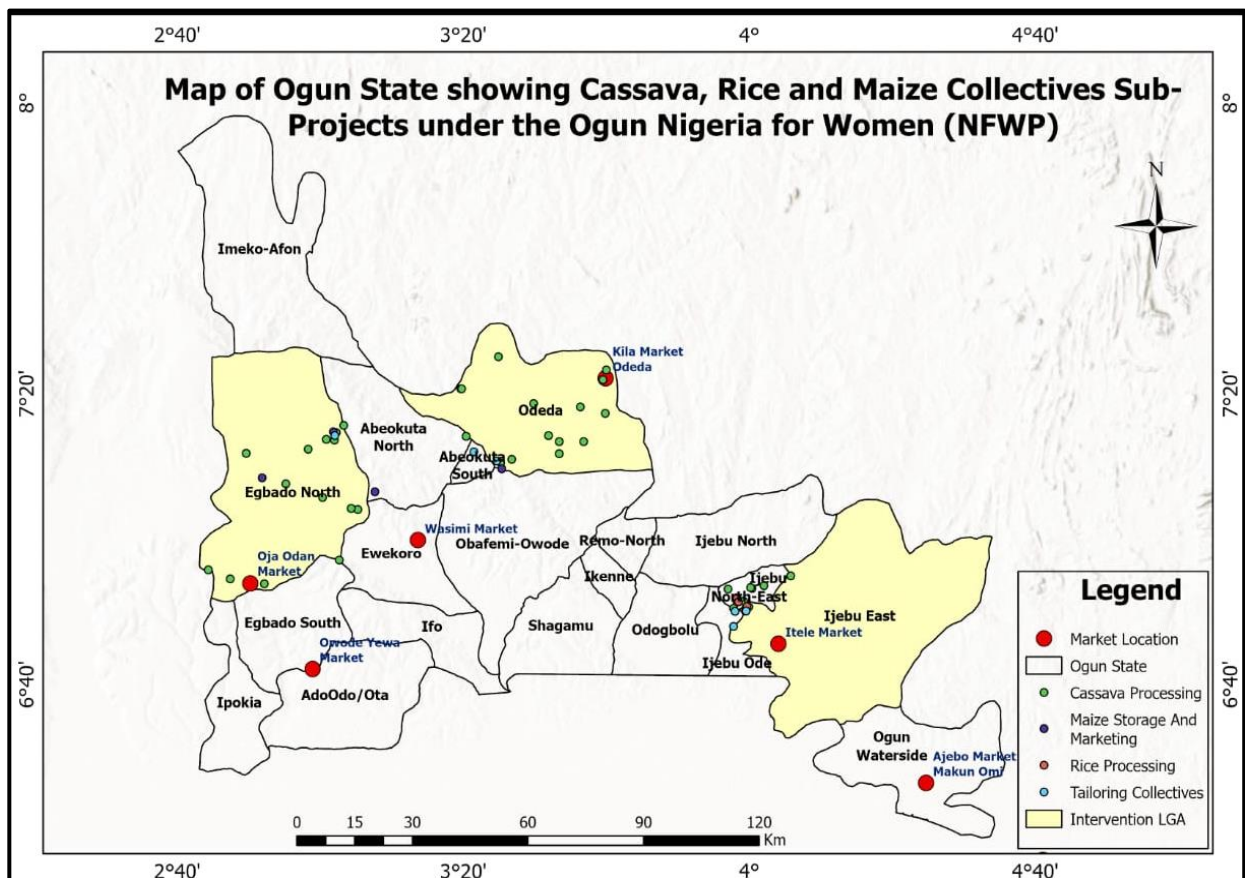


Figure 3: Map of Ogun State showing locations of collectives sub-projects proposed under the Ogun NFWP

2.8 Stakeholder Consultations

Stakeholder consultations were carried out with key stakeholders to obtain their comments and concerns on the proposed project with respect to the potential environmental and socio-economic issues and impacts. The Ogun NFWP defined and adopted comprehensive and balanced approach to social mobilization and stakeholder engagement. A plan was developed to involve the active participation of all stakeholders in decision-making processes, to foster dialogue and reduce tensions. The key project stakeholders were identified for consultations, and these included the Ogun State NFWP Project Coordination Unit of the Federal Ministry of Women Affairs, the Federal Ministry of Environment(FMEnv), Ogun State Ministry of Environment, Ogun State Ministry of Agriculture, officials from the Ogun State Local Government Agencies of Yewa, Odeda and Ijebu Northeast, village heads, local community leaders and women groups in communities. The stakeholder consultation meeting was held between 6th – 28th February 2024, which involved a team inspection to the project site project and a meeting with community stakeholders to address all issues that may be of concern to the main stakeholders. The Environmental and Social Safeguards Officer chaired the meeting and explained that the goal was to develop and maintain open and constructive relationships with all stakeholders, to facilitate the management of the project and its stakeholders, including their environmental and social effects and risks.

2.9 Summary of Concerns Raised by Stakeholders and proposed Mitigations at the meeting

During the stakeholder consultation meeting, the following concerns were raised by stakeholders and mitigation measures were proposed to address their concerns. The summary of issues raised are:

- The eagerness of the community to see the project kicked off. It was explained that this delay is to ensure due diligence is carried out such as the preparation of the environmental and social management plan (ESMP) being prepared.
- Information was shared about a date in July (Agemo Festival) when women must not go out and this would require that there is adequate sensitization of contractor staff in addition to community engagements be held within the community to encourage awareness of this festival and compliance with the cultural requirements.
- The women and youths would wish to be considered for opportunities to work. It was established that the part of the contractor's local content recruitment approach is to ensure that unskilled labourers will be sourced from host community. Pictures of consultation meetings held are shown in Figure 6.



Figure 4: Stakeholders Engagement

CHAPTER THREE: ENVIRONMENTAL INSTITUTIONAL, LEGAL FRAMEWORK FOR MANAGEMENT

3.0 Introduction

A number of national and international environmental guidelines are applicable to the operations of the NFWP. This ESMP is prepared in alignment with relevant Ogun State and Federal Government policies, laws, regulations, guidelines, and applicable World Bank Operational Policies. These are presented in this chapter. These are presented in this chapter.

3.1 World Bank Safeguard Policies Triggered by Project.

World Bank Safeguard Policies OP 4.01 on Environmental Assessment is triggered on this project due to anticipated civil works under the construction of the cassava production hub. Other safeguard policies triggered are presented in Table 2.

Table 2: Potential Safeguard Policies Triggered by NFWP

Policy	Yes	No	Applicability due to	How this Project Addresses Policy Requirements
<u>Environmental Assessment (OP 4.01)</u>	X		Activities of components 2.2 may trigger site-specific environmental impacts.	This ESMP is prepared to address site specific E&S issues.
Physical Cultural Resources (OP/BP 4.11)	X		The selected States are rich in cultural diversity and some agricultural activities may be located in the area of influence of some sites.	To mitigate this risk, specific procedures (such as chance find procedures) shall be included in the ESMP.
Pest management (OP 4.09)	X		Agricultural activities that form a part of the livelihood opportunities have pest management risks.	A standalone IPMP has been designed as an annex to ESMF.
Involuntary Resettlement (OP 4.12)	X		Interventions could lead to restriction of access to sources of livelihoods. There could be encroachment to farmlands	A standalone RPF has been prepared to address involuntary resettlement.

The Environmental & Social Management Framework (ESMF) provides a review of the applicable local laws, regulations, policies and procedures on addressing the site-specific E&S issues that are likely to be triggered by the intervention. Essentially, here, the Nigeria EIA Act Cap E12 LFN 2004 on any construction that would have significant impact on the environment has guided the preparation of this ESMP. With regards to identification and categorization of the different types of impacts, the gaps between Nigerian law and OP 4.01 will be bridged by the measures already identified in the ESMF for the NFWP.

Generally, with regards to environmental and social management issues, legislation is in a continuing process of development in Nigeria. Nevertheless, in the event of divergence between the two, the World Bank safeguard policy shall take precedence over Nigeria EA laws, guidelines for these intervention projects.

3.2 Applicable Laws and International Regulatory Framework

The relevant Federal and State policy and regulatory instruments are summarized in the Table 3.

Table 3: Relevant Federal/State Policies, Legislations, Regulations & Guidelines

S/N	Policy Instrument	Year	Provisions
1	National Policy on the Environment	1989 revised 1991	Describes the conceptual framework and strategies for achieving the overall goal of sustainable development in Nigeria.
Legal/Regulatory Instrument			
2.	Environmental Impact Assessment (EIA) Act No. 86	1992	Provide guidelines for activities of developmental projects for which EIA is mandatory in Nigeria. The act also stipulates the minimum content of an EIA as well as a schedule of projects, which require mandatory EIAs.

S/N	Policy Instrument	Year	Provisions
3.	Land Use Act	1978	The act vests all land comprised in the territory of each state in the Federation in the Governor of the state and requires that such land shall be held in trust and administered for the use and common benefit of all Nigerians in accordance with the provisions of the act.
4.	Forestry Act	1994	Provides for the preservation of forests and the setting up of forest reserves.
5.	Endangered Species Act	1985	Provides for the conservation and management of Nigeria's wildlife and the protection of some of her endangered species in danger of extinction as a result of over-exploitation
6.	FEPA/FMEnv EIA Procedural Guidelines	1995	The Procedural Guidelines indicate the steps to be followed in the EIA process from project conception to commissioning in order to ensure that the project is implemented with maximum consideration for the environment.
7.	National Guideline and Standard for Environmental Pollution Control	1991	Provide guidelines for management of pollution control measures
8.	S.I.15 National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations	1991	Regulates the legal framework for the effective control of the disposal of toxic and hazardous waste into any environment within the confines of Nigeria.
9.	Urban and Regional Planning Decree No. 88	1993	Planned development of urban areas (to include and manage waste sites).
10.	Workmen Compensation Act	1987 reviewed 2010	Occupational Health and Safety
11.	Child Rights Act	Act No. 26 of 2003	Best interests of a child are to be paramount in all actions and clearly states the rights of the child.
12.	After the repealing of the Federal Environmental Protection Act of 1988, the NESREA Act, 2007 became the major statutory regulation or instrument guiding environmental matters in Nigeria.	The National Environmental Standards and Regulations Enforcement Agency Act 2007 (NESREA Act)	It specially makes provision for solid waste management and its administration and prescribes sanction for offences or acts, which run contrary to proper and adequate waste disposal procedures and practices

3.2.1 Other regulations enforced through NESREA

The other regulations that would be enforced through NESREA are presented in Table 4.

Table 4: Environmental Regulations

Regulation	Description
National Environmental (Ozone Layer Protection) Regulations, S.I. No. 32, 2009.	These provisions seek to prohibit the import, manufacture, sale and the use of ozone-depleting substances.
National Environmental (Sanitation & Waste Control) Regulations, S.I. No. 28, 2009.	The purpose of this Regulation is to provides the legal framework for the adoption of sustainable and environment friendly practices in environmental sanitation and waste management to minimize pollution.
National Environmental (Wetlands, Riverbanks and Lake Shores) Regulations, S.I.No.26, 2009	This Regulation provides for the conservation & wise use of wetlands & their resources in Nigeria and ensure sustainable use of wetlands for ecological and tourism purposes and to protect wetland habitats for species of fauna and flora.
National Environmental (Flood Erosion and Control) Regulation, S.I. No. 12, 2011.	The overall objective of these Regulations is to check all earth-disturbing activities, practices or developments for non-agricultural, commercial, industrial and residential purposes
National Environmental (Desertification Control and Drought Mitigation) Regulations S.I, No. 13, 2011.	This Regulation seeks to provide an effective and pragmatic regulatory framework for the sustainable use of all areas already affected by desertification and the protection of vulnerable lands.
National Environmental (Control of Bush/Forest Fire & Open Burning) Regulations S.I, No. 15, 2011.	The principal thrust of these Regulations is to prevent and minimize the destruction of ecosystem through fire outbreak and burning of any material that may affect the health of the ecosystem through the emission of hazardous air pollutants
National Environmental (Construction Sector) Regulations, S.I. No. 19, 2011	The purpose of these Regulations is to prevent and minimize pollution from Construction, Decommissioning and Demolition Activities to the Nigerian Environment.
National Environmental (Hazardous Chemicals & Pesticides) Regulations, S.I. No 65, 2014.	The objective of these Regulations is to protect human health and the environment from the harmful effects of hazardous chemicals and pesticides, and other agro chemicals. It also contributes to the sustainable development of agriculture and the conservation of the environment.
National Environmental (Quarrying & Blasting) Regulations, S.I. No. 33, 2013.	The objective of these Regulations is to control the effects of quarrying and blasting operations on the environment and human health as well as encourage the wise use and exploitation of natural resources and the protection of the ecosystem.
National Environmental (Air Quality Control) Regulations, S.I. No. 64, 2014.	The purpose of these Regulations is to provide for improved control of the nation’s air quality to such an extent that would enhance the protection of flora and fauna, human health and other resources affected by air quality deteriorations.

3.3 International Treaties and Conventions on Environment

Some of the international Treaties and Conventions on environment to which

Nigeria is a party are summarized in Table 5.

Table 5: International Treaties and Conventions on Environment to which Nigeria is a Party

S/N	Treaties and Conventions	Year	Agreement
1.	The United Nations Environmental Guidance Principles	1972	Provide guidelines for protecting the integrity of the global environment and the development system
2.	Montreal Protocol on Substances that deplete the Ozone Layer	1987	An international treaty to eliminate Ozone depleting chemical production and consumption.
3.	United Nations Convention on Biological Diversity	1992	Places general obligations on countries to observe sustainable use and equitably share the plants and animals of the earth
4.	United Nations Framework Convention on Climate Change	1994	It calls on developed countries and economies to limit her emissions of the greenhouse gases which cause global warming
5.	Convention on International Trade in Endangered Species of Wild Fauna and Flora	1973	Restricts the trade of fauna and flora species termed as endangered Species
6.	Convention on Conservation of Migratory species of Wild animals (Bonn Convention)	1979	Stipulates actions for the conservation and management of migratory species including habitat conservation
7.	Vienna Convention for the Protection of the Ozone Layer	1985	Places general obligation on countries to make appropriate measures to protect human health and the environment against adverse effects resulting from human activities, which tend to modify the ozone layer.

3.4 Gender-Based Violence

Nigeria has ratified or consented to the core international human rights treaties and is a party to the major regional human rights instrument which obliged States to respect, protect and fulfill human rights of all persons within the territory and subject to the jurisdiction of the State, without discrimination. Rape may violate several human rights obligations enshrined in the instruments ratified by Nigeria and is also a form of gender-based violence and a manifestation of violence against women. As a State party to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the Protocol to the African Charter on Human and Peoples’ Rights on the Rights of Women in Africa (the “Maputo Protocol”), Nigeria has made legally binding

commitments to exercise due diligence to combat gender-based violence and discrimination.

3.4.1 State Laws Relevant to GBV

Violence Against Persons (Prohibition) Act was signed into law in 2015. The aim of this Act is to eliminate violence in private and public life, prohibit all forms of violence against persons and to provide maximum protection and effective remedies for victims and punishment for offenders, and for related matters. Two key national laws address GBV, the Child Rights Act (CRA, 2003), and the Violence Against Persons Prohibition Act (VAPP, 2015). The Ogun States Child rights bill was signed into law on March 3, 2004, while the VAPP law was also domesticated by Ogun State as the Ogun VAPP law in 2017, which was subsequently gazetted on October 18, 2018.

3.4.2 Regional Treaties Relevant to GBV

- The African Charter on Human and Peoples’ Rights (ACHPR) (1982)
- The African Charter on the Rights and Welfare of the Child (ACRWC) (2007)
- The Protocol to the CHPR on the Rights of Women in Africa (the “Maputo Protocol”) (2007)

3.4.3 National Policies Relevant to GBV

- The National Action Plan for the Implementation of United Nations Security Council Resolution 1325 (2009)
- The National Gender Policy (2010)

3.5 International Treaties Relevant to GBV

The International Covenant on Civil and Political Rights (ICCPR) (2004)

- Recognizing the ideal of free human beings enjoying civil and political freedom from fear and want can only be achieved if conditions are created whereby

everyone may enjoy his civil and political rights, as well as his economic, social and cultural rights.

The International Covenant on Economic, Social and Cultural Rights (ICESCR) (2004) - Recognizing the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.

The Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) (1993) - Recognizing the right not to be deliberately or intentionally inflicted with severe pain or suffering, whether physical or mental, for such purposes as obtaining information or a confession.

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1984) - Recognizing the right not to have any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women.

The Convention on the Rights of the Child (CRC) (1990) - Recognizing the child's right to non-discrimination; a devotion to the best interests of the child, the right to life, survival and development and respect for the views of the child.

Convention on the Rights of Persons with Disabilities (CRPD) (2012) – This is the protection of the rights of persons with disabilities against interference or attacks and States. Parties shall protect the privacy of personal, health and rehabilitation information of persons with disabilities on an equal basis with others.

International Convention on the Elimination of All Forms of Racial Discrimination (1976) – to eliminate all **forms** of racial discrimination and to promote understanding amongst all races.

3.6 International Treaties Relevant to Social Protection

Some relevant international treaties on social protection include:

The International Covenant on Civil and Political Rights (ICCPR) (2004); which pursues the promotion of self-realization by upholding the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development. Also, all peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence.

The International Covenant on Economic, Social and Cultural Rights (ICESCR) (2004); which undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.

The Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) (1993) that promotes the protection of people from "torture", which means any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a

confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions.

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1984), discourages the discrimination against women by any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field.

The Convention on the Rights of Persons with Disabilities (CRPD) (2012); which adopts a broad categorization of persons with disabilities and reaffirms that all persons with all types of disabilities must enjoy all human rights and fundamental freedoms. It clarifies and qualifies how all categories of rights apply to persons with disabilities and identifies areas where adaptations have to be made for persons with disabilities to effectively exercise their rights and areas where their rights have been violated, and where protection of rights must be reinforced.

International Convention on the Elimination of All Forms of Racial Discrimination (1976), which discourages any distinction, exclusion, restriction or preference based on race, colour, descent, or national or ethnic origin which has the purpose or effect of nullifying or impairing the recognition,

enjoyment or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life.

Generally, with regards to environmental and social management issues, legislation is in a continuing process of development in Nigeria. Nevertheless, in the event of divergence between the two, the World Bank safeguard policy shall take precedence over Nigeria EA laws, guidelines for these intervention projects.

CHAPTER FOUR: DESCRIPTION AND ANALYSIS OF INITIAL STATE OF THE ENVIRONMENT

4.0 Introduction

This section of the report puts together the baseline environmental data/characteristics of the study and contains the results of analysis of one-season environmental media samples; 10 top soil and 10 sub soil samples were

collected from a total of 16 sites in Ijebu North-East LGA, in Odeda LGA, 20 top soils and 20 sub soils were collected from 22 sites and in Yewa north LGA, 20 top soil and 20 sub soil were collected from 23 sites, thereafter tested to determine air, soil & water quality comprising results of analysis of air, soil and water samples taken. Analysis of samples were undertaken at the laboratory of the Lagos State Environmental Protection Agency (LASEPA).

4.1 Air Quality

Air quality assessment was conducted using multiparameter MSA ALTAIR® 5x Multi Gas detector for measuring of CO, NO₂, PPM, VOC, while AQM-particle plus was used for measuring the SPM. Three locations were strategically selected for the air quality study to give a good representation and coverage to the project communities that will likely be impacted by the project. All values of major air quality parameters taken for the project area (SPM,) were within FME_{env} limits. The air quality values from samples taken at five locations each for the project sites visited in the project area were thereafter assessed (Table 6).

Table 6: Results for noise & air sampling around project sites

Sampling Point Names	Location coordinates	TSPM mg/m³	CO mg/m³	SO₂ mg/m³	H₂S mg/m³	NO₂ mg/m³	Noise level dB
Odeda LGA							
Iwajowa cassava farm mologede	7.345070,3.330340	0.04	0.641	ND	ND	ND	30.0
Agbelere cassava farm opeji	7.418158, 3.13592	0.02	0.790	ND	ND	ND	30.5
Agbegbemi casava plant mawuko	7.241194,3.336031	0.02	0.620	ND	ND	ND	35.8
Toluwalase cassava plnt Baagbon	7.265000, 3.570092	0.05	0.431	0.18	0.10	0.04	31.3
Agbedola cassava plant kila	7.365833,3.65974	0.03	0.508	0.03	ND	ND	34.0

Agbedola casava plnt owu-soetan	7.232558, 3.704360	0.04	0.550	0.02	ND	ND	42.7
Agbeloba casava plant abule osin	7.16204, 3.422763	0.06	1.847	0.05	0.02	ND	38.5
Mean		0.05	1.908	0.04	0.01	0.01	34.7
FMEEnv LMT		0.25	10	0.26	0.05	0.06	90
Yewa North							
Anuoluwapo cass. Plant Ayetoro	7.261878, 3.052041	0.08	2.07	ND	ND	ND	36.1
Ifedapo cassava. Plant, Igan okoto	7.140464,3.048149	0.12	6.90	0.13	0.01	0.01	50.4
Ibukunoluwa cass.plant, owode ketu	7,126894,2.919782	0.03	3.18	ND	ND	ND	31.8
Precious cassava, plant Ibese	6.952455, 3.043869	0.15	6.45	0.11	0.01	0.03	57.5
Asekunlowo cass. Plant, Igbogila	7.035233,2.997339	0.02	3.06	ND	ND	ND	33.6
Gbemisola cass, plant, Ohumbe	6.937584,2,736038	0.03	2.01	ND	ND	ND	41.9
Irrewolede cass. Plant, oja-Odan	6.903651, 2.868914	0.05	3.16	ND	ND	ND	30.7
Mean							
FMEEnv LMT		0.07	3.78	0.04	0.01	0.005	39.64
		0.25	10	0.26	0.05	0.06	90
Ijebu East LGA							
Ifesowapo cassava plant Iworo	6.857815, 3.970541	0.03	1.03	0.18	0.16	0.03	35.2
Ifesowapo cassava plant Atan	6.887099, 4.006491	0.05	2.51	0.03	0.02	0.02	36.5
Itesiwaju cassava plat Ogbogbo	6.853610, 3.954050	0.02	1.05	ND	ND	ND	34.9
Irewolede cassava plant Iyawee	6.859506, 3.984132	0.03	0.97	ND	ND	ND	32.8
Asejere cassava plant Odosenbora	6.902441, 4.014887	0.02	0.88	ND	ND	ND	30.6
Agbeloba cassava plant Erigo	6.841553, 3.963582	0.03	1.96	0.02	ND	ND	42.1
Temidire cassava farm, shiporu	6.916972,4.095776	0.02	0.50	ND	ND	ND	30.1
Mean		0.03	1.19	0.03	0.02	0.01	34.6
FME LMT		0.25	10	0.26	0.05	0.06	90

Source: Field study, February 2024.

The total suspended particulate matter and carbon II Oxide are the dominant pollutants around the Adulobirin/Ifedapo cassava site in Yewa LGA. In all the sites assessed, Ifedapo cassava collective at Igan Okoto recorded 0.12mg/m³. Ibese air quality is gradually being impacted by industrial activities while in Igan Okoto, close proximity of site to the telecommunication masts powered by diesel generating set is likely responsible for the measured value. The average TSPM recorded for the sites in the LGA is 0.07mg/m³. However, this is lower than FMEEnv maximum hourly allowable limit of 0.25mg/m³. The outcome of the air quality tests for other sites in Odeda and Ijebu North east LGAs where the values tested were below the FMEEnv limits for all the parameters considered.

4.2 Noise

The total suspended particulate matter and carbon II Oxide are the dominant pollutants around the Ifedapo cassava site in Yewa LGA. In all the sites assessed, precious cassava processing collective Igan Ibese recorded the highest TSPM concentration of 0.15 mg/m³, followed by Ifedapo cassava processing collective Igan Okoto which recorded 0.12mg/m³. Ibese air quality is gradually being impacted by industrial activities while in Igan Okoto, close proximity of site to the telecommunication masts powered by diesel generating set is likely responsible for the measured value. The average TSPM recorded for the sites in the LGA is 0.07mg/m³. However, this is lower than FMEEnv maximum hourly allowable limit of 0.25mg/m³. The outcome of the air quality tests for other sites in Odeda and Ijebu North east LGAs where the values were below the FMEEnv limits for all the parameters considered.

4.3 Soil Quality

The soil around the project sites are rich in minerals such as limestone, bitumen, laterite, kaolin, stones, gypsum, feldspar, clay, glass sand, quartz, tar sand, phosphate, bauxite, granite, crude oil and more. Much of the potential of the State with respect to solid minerals is yet to be fully exploited as only 16.4Mt was mined in 2016, being 37.65% of the total national output, led by limestone, laterite and granite.

Linear sampling method was employed for this hydro-geologic survey to localize the soil samples retrieved and to cover the whole site of investigation. Soil samples were retrieved for lithologic description and laboratory testing. Soil samples were collected at depths of 0-30cm (top-soil), and 30-60cm (sub-soil).

Generally, the soils on the surfaces of the road is sandy and silty. Results obtained showed that parameters were within FMEnv limits.

The soil profile in the area consists of reddish clay to approximately 2.0 m depth, followed by reddish brown clay. The subsequent strata include clayey units, sandy aquifers and greyish dark clay beneath these. The Ise Formation comprises of conglomerates and grits at the base and is in turn overlain by coarse to medium grained loose sands.

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4.3.1 Soil textural composition

Sand has the highest percentage particle size distribution in the soil of intervention sites within the Odeda LGA, having average percentage of 90.03% sand in topsoil and 88.96% in sub soil. This is followed by silt having average Percentage particle size distribution of 7.28% and 10.89% for topsoil and sub soil respectively. Clay have average percentage particle distribution size of 6.93 and 7.27% for topsoil and sub soil. The textural class of the soil Odeda LGA is majorly loamy sand and some few locations sandy around Alabata and Obantoko. The soil is also slightly acidic in nature as reveal by the soil PH in water. The average PH in water is 5.76 for topsoil and 5.69 for sub soil in NFWP sites within the LGA. The concentrations of the assessed heavy metal in the soil

revealed that they are still present at natural occurrence concentration and no contamination through anthropogenic activities.

In the sites within the Ijebu North East LGA, sand has the highest percentage particle size distribution in the soil within the LGA, having average percentage of 71.85% sand in topsoil and 66.80% in sub soil. Percentage silt and clay is 15.34 and 12.81 respectively for topsoil and 17.51 and 16.68 respectively for sub soil. The textural class of the soil is majorly sandy loam and slightly acidic in nature as reveal by the soil PH in water. Average concentrations of Iron is 10.78mg/kg in top soil while it is 12.40mg/kg in sub soil. Manganese has average concentration of 1.03 and 1.34 mg/kg in topsoil and sub soil respectively, while Lead is 5.43 and 6.64mg/kg for topsoil and sub soil respectively. These values suggest evidence of pollution free soil with respect to the determined heavy metals.

The textural class of the soil of the sites around the Yewa LGA is similar to the soil in the other LGAs and is majorly sandy loam and slightly acidic in nature as revealed by the soil PH in water. The average PH in water is 5.81 for topsoil and 5.78 for sub soil in NFWP sites within the LGA. Slightly acidic soil makes EB preferably available to plant while strongly acidic soil selectively makes EA available plant roots at toxic level. Manganese has average concentration of 1.03 and 1.34 mg/kg in topsoil and sub soil respectively, while Lead is 5.43 and 6.64mg/kg for topsoil and sub soil respectively. These values suggest evidence of pollution free soil with respect to the determined heavy metals. The soil microorganism flora also supports the chemical properties of the soil indicating that the soil is pollution free. Physical observation also shows that heathy plants are thriving in the environment.

4.4 Water Quality

For the intervention sites around within the Ijebu north east LGA, both ground water and surface water are both slightly acidic with average PH of 6.78. The water had electrical conductivity (EC) values less than 1000 μ S/cm. The average EC is 87.14 μ S/cm. Average concentrations of BOD₅ is 4.73mg/l suggesting that the water is pollution free. The higher BOD of Odosenbora river, which is close to the sites is 13.01mg/L and this is likely from plants leaves which are decaying after falling into the stream. In addition, it was also observed that the stream is not flowing as a result of the dry season. However, heavy metal concentration in the water are also lower than FME_{Env} limit except Odosenbora river surface water which has Lead concentrations higher than FME_{Env} limit at 0.36mg/l. All the ground water within the sites are free from microorganisms such as *Salmonella sp.* and *shigella sp.*, which are present in the surface water.

Water samples taken from the sites around Odeda LGA were slightly acidic with average PH of 6.70 and electrical conductivity (EC) which is less than 1000 μ S/cm. The average EC obtained is 56.15 μ S/cm while the average concentrations of BOD₅ in water within NFWP sites is 5.15mg/l suggesting that the water is pollution free. Heavy metal concentration in the water is also lower than FME limit. However, the surface water at orile ilugun was found to be contaminated with *E. coli sp.*, *Salmonella sp.* and *Shigella sp.* Equally, the ground water (shallow hand dug well in Osiele) was also found to be contaminated with Microbes.

In the sites located in Yewa North LGA, the nature of both ground water and surface water is also that of slight acidity with an average PH of 6.73. The electrical conductivity (EC) of water taken from the sites is less than 1000 μ S/cm with an average EC of 92.68 μ S/cm. Average concentrations of

BOD₅ in water within NFWP sites is 4.84mg/l suggesting that the water is free of organic pollutants. The high BOD of Ayetoro stream at 18.38mg/L suggests that effluent/ waste from a nearby abattoir is draining freely into the water body. It was also observed that there is also a market close the stream which is emptying waste into the stream. Heavy metal concentration in the water are also lower than FMEnv limit, Lead was below detection limit of instrument in all the water. All the ground water within the sites are safe with respect to the determined microorganism, however, the surface water had concentrations of *E. coli sp.*, *Salmonella sp.* and *Shigella sp.* Hence, the surface water from these sites should not be used for portable purposes without treatment and contractor staff should drink from the boreholes and hand dug well community sources.

4.4.1 Microbiology of Water

The surface water around the proposed sites in the different LGAs was found to contaminated with *E. coli sp.*, *salmonella sp.* and *shigella sp.* and to be contaminated with Microbes. In addition, the surface water around the Adulobirin cassava site (Odosenbora river) had Lead (Pb) concentrations higher than the FMEnv limit of at 0.36mg/l (FMEnv Limit is 0.1). This indicates surface water quality around the project area is not potable and therefore not suitable enough for drinking and would need to be boiled or treated before drinking.

4.5 Micro-meteorological Data

Meteorological information such as the wind speed and direction, temperature and rainfall characteristics become fundamental in determining the impact and possible mitigation measures. High temperatures, humidity and rainfall characterize the proposed project sites for most part of the year. The climate which is tropical humid, is characterized by wet and dry seasons. The dry

season starts around November and ends in February and March; the wet season on the other hand, occurs between March and November.

4.5.1 Rainfall

The mean annual rainfall over the project sites ranges from 500 mm to 2,000 mm. As presented in Figure 4, historical data from 1995 – 2022 revealed an average precipitation of 1504mm over the 27-year period. During the wet season, rainfall events can be as much as 140 mm per day. Along the coast, the mean annual rainfall ranges between approximately 920 mm and 1,500 mm with no visible dry spell.

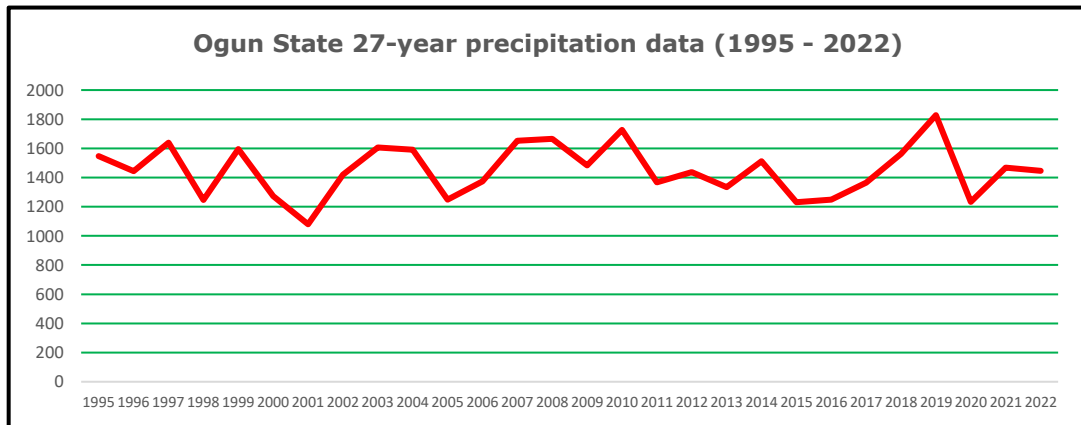


Figure 5. Chart showing precipitation in Ogun State from 1995 – 2022

Source: World Bank Climate Change Knowledge portal

4.5.2 Temperature

At near sea level in the equatorial zone, temperatures can be high and only vary by approximately 8°C throughout the year. Maximum temperatures are in the region of 32°C during the dry season (February and March) and at a minimum of around 22°C in August. Historical data presented in Figure 5 shows that average surface air temperature over a 23-year period (1999-2022) was 28.9°C.

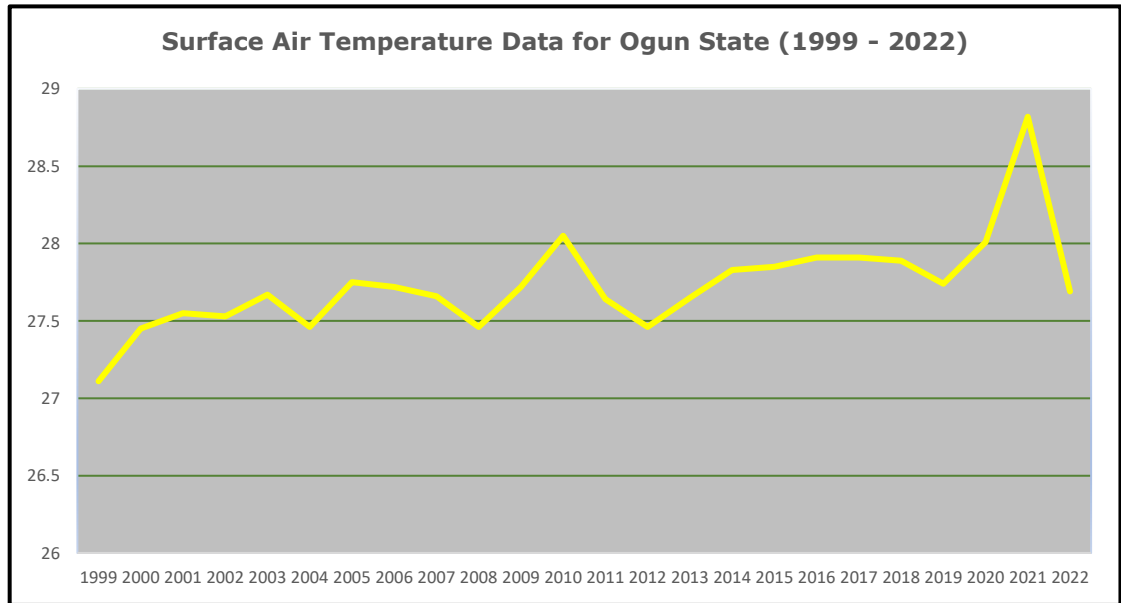


Figure 6. Chart showing air temperature in Ogun State from 1999 – 2022

Source: World Bank Climate Change Knowledge portal

4.5.3 Topography

The terrain in and around the sites in Yewa & Odeda LGAs is characterized by high lands to the north and sloping downwards to the south. The highest region is in the north-west and rises to just over 300 metres above sea level. The lowest level is to the south terminating in a long chain of lagoons. The only window to the Atlantic Ocean is to the south east of the State in Ogun Waterside LGA. With the general topography sloping from the north to the south, all the main rivers in the State flow from the north to the south.

4.5.4 Cloud Cover

The cloud cover over the sites is relatively clear and constant because of the presence of the evergreen tree canopies of the tropical rainforest.

4.5.5 Geology

The geology of around the sites comprises sedimentary and basement complex rocks. The rock is soft and brittle but, in some places, cemented by iron and

silicon containing materials. The basement complex is essentially non-porous, and water can only be contained in the crevices of the complex. This basement complex primarily underlies the sedimentary layers, which consist of Cretaceous, Tertiary and Quaternary sediments deposited in the coastal basin. The sedimentary rock of Ogun State consists of the Abeokuta formation, which lies directly above the basement complex and is in turn overlain by the Ewekoro, Oshosun and Ilaro formations. These formations are overlain by coastal plain sands (Benin formation).

4.5.6 Vegetation of project sites

The project sites are found in locations that are predominantly forest ecosystems with grasses and shrubs in abundance.

4.6 Socioeconomics

This section of the study/report entails a detailed study of the social and economic life of the people amidst the development in the area. Data collection methods involved questionnaire administration, observation of project site & focus group discussions (FGDs).

Questionnaire administration was carried out by purposive sampling. Using a population size of 1m for a finite population (Krejcie and Morgan (1970), recommend a sample of 384 respondents to represent 1m persons), and for this study, a total of 588 questionnaires were administered in the three LGAs; to enable robust data and information gathering, 134 respondents were interviewed in Iworo, Atan Odosenlu, Ogbogbo, Idagunre, Odo Sebor, Erigo, Isonyin, Erunwon, Imuroko, Iyaw, & Ilese communities of Ijebu East LGA; 235 respondents were interviewed in Ika, Baagbon, Alagbada, Kila, Orile Ilugun, Owu-Soetan, Olugbo, Itesi, Osiele, Abidoko, Molegede, Mawuko, Openji, Baagbon, Alabata, Obantoko and Bode Olude Communities of Odeda LGA; and

219 respondents were interviewed in Idofoi Ayetoro, Saala Orile, Igan Okoto, Sawonjo, Owode Ketu, Ibese, Igbogila, Igan Okoto, Owode Ojumo, Iboro, Iselu, Agbon Ojodu and Oja Odan communities of Yewa LGA.

From the findings, 90% of the respondents are married. This shows communities with high dependency ratio, suggesting that the proposed sub-projects intervention will essentially help in poverty reduction and livelihood improvement among members of the communities. 54.74% of persons interviewed have primary school education, while 24.57% have O/Level and 0.86% have tertiary education. 18.97% have no formal education and only 1% have attended Islamic school. This information will help in future engagements, project sensitization and communication plans. The survey revealed that majority of the persons interviewed were farmers (15%), while fifteen percent (15%) were traders and twenty-four and a half percent (24.5%) of the remaining respondents have their own single proprietorship businesses. The communities have market which run every five days giving trade opportunities to many of the women who are involved in petty trading. There also exist good numbers of public schools which gives opportunities for employment of persons from the community as teachers and school staff from the project communities.

4.6.1 Population

Ogun state has a population of 5.2 million people in 2017, projected at 3.04% growth rate from the 2006 population census of 3,751,140. The state population ratio is made up of 50.5% for females and 49.5% males. The Local governments where these sites are located have a combined population of 949,700; 186,300 for Odeda LGA, 286,300 for Yewa LGA and 477,100 for Ijebu North LGA. About 55% of the populations live in the rural areas while 45% are in the urban areas.

Rural – Urban migration in Nigeria, like in most other countries is fueled by the pursuit for increased economic/ livelihood opportunities. Presently, it is estimated that 47.8% or 90.1 million people live in the urban centers. About 68.8% or 40.3million of this urban population are considered to be low-income earners. This pressure has forced changes in urbanization patterns.

4.6.2 Land use patterns

Agriculture is the primary use of land in communities around the proposed sites. Ogun State has 1.6 million hectares of arable land, which is 74% of the State's total land area, but only 30% of this arable land (480,000 hectares) is under cultivation. Major crops grown or cultivated in the state include: Cassava, Cassava, Cassava, Oil Palm, Cashew, Citrus, Cocoa, Rubber, Kola-nut, Cotton, Soybean, Vegetables, Pineapple, Sugarcane, Cocoyam, Banana and tomato among others. Livestock and fish farming are also strong and viable agricultural options. Agricultural yield from the communities has been strained by the poor condition of feeder roads that enables agricultural activities especially connecting farms to markets and production hubs. There is also a significant challenge of post-harvest losses due to insufficient produce markets and production facilities.

4.6.3 Access to healthcare

A study¹ conducted among rural households in Ogun State revealed that of the 200 rural households sampled only fifty eight percent (58%) have access to healthcare services, while only forty-two and a half percent (42.5%) actually utilize these services. Of this total, most of the respondents (40.5%) travel a distance of 5-9km before accessing health care facilities. Consequently, the accessibility indices indicate unequal access to modern health facilities in and around these rural areas.

4.6.4 Access to markets

The project sites are in the rural communities of the LGAs in Ogun State. Generally, rural access is limited where the poor population is concentrated. There are local markets around the intervention sites that run every five days, which will complement access to this sub-project are Oja Odan (Yewa North LGA), Owede Yewa market (Yewa South LGA) and Agbejoda market (Ona Ara LGA). As a participating State under the RAAMP, some of these markets have been identified by the State for upgrade that would contribute to the overall network connectivity including connectivity to markets, agriculture or agri-business potential of the road corridor, and the road's potential in serving poor and isolated areas.

4.6.5 Settlement Patterns, Housing Structures and Characteristics

The settlement pattern observed in the communities revealed both a linear and nucleated pattern of settlement but with formal planning set up. Buildings in the communities are dominated by brick/vibrated block walls and corrugated

¹ Healthcare access and utilization among rural households in Nigeria. Journal of Development & Agricultural Economics, Omonana. B., Obisesan A., Aromolaran. O., 2015.

sheets roof and some storey buildings are also seen in the proposed project area, plastered with cement and in most cases have electricity and modern toilet facilities.

4.6.6 Access to water

The main source of water for drinking and domestic use, among many residents here were private or individual boreholes, where majority obtain their water for household uses. Some of the residents stated that they drink water from the boreholes most the time. Several others receive their domestic water from rainwater catchment, nearby streams or rivers. Some other residents stated that they prefer to buy and drink sachet water.

4.6.7 Community Governance Structure

The communities around the project sites are all headed by a village community head who is also known as the or Baalè and they report directly to the ward leader of the community or the Clan Chief. Above this level is the Chiefs council that work directly with the King responsible for the community or group of communities. Affairs of the different communities are superintended over by the Local Government Chairman.

4.6.8 Existing patterns of conflict resolution

There is an efficient conflict resolution process already existing in the project area. In the traditional way of resolving matters, the complaint is taken directly to the village/community heads or Baalès who can report the matter to the ward leader of the community. If unresolved at this level, the matter is escalated to the level of the Chief. In non-criminal cases such as domestic or family disputes, the district head invites the parties and conciliatory steps are taken to assuage them. However, in criminal cases, the matter is referred to

the police. Any matter that remains unsettled at this level is taken to the king or palace, where it will receive a fair mediation.

4.6.9 Transport

The transport available around the project sites are mainly vehicular types that connect the rural areas to the major towns such as the LGA headquarters, while tricycles and motorcycles were the preferred transportation mode for intra-community transportation.

4.6.10 Economy

The survey revealed that majority of the persons interviewed were farmers (70%), while (15.7%) of the remaining respondents have their own single proprietorship businesses. The communities have market which run every five days giving trade opportunities to many of the women who are involved in petty trading. There also exist good numbers of public schools which gives opportunities for employment of persons from the community as teachers and school staff from the project communities.

CHAPTER FIVE: DESCRIPTION OF ENVIRONMENTAL & SOCIAL IMPACTS OF THE PROJECT

5.0 Impacts Assessment Methodology

To ensure environmental and social performance of the entire sub-project, this impact assessment methodology focuses on the tools of impact identification, impact prediction and the mitigation of potential adverse impacts identified associated with the various phases of the project. Identified impacts that would be associated with this intervention have been classified to occur in four (4) phases for the lifespan of the works.

The phases include:

- Preconstruction phase
- Construction phase
- Operational and Maintenance phase
- Demobilization phase

5.1 Project Area of Influence

The area of influence of the buildings for the proposed cassava processing hub will be described with respect to the following:

- Physical Environmental Media Influence.
- Geographical Area of influence.
- Community influence and vulnerable persons in the institutions and
- Institutional Influence

5.1.1 Physical Environmental Media Influence

The proposed project's activities may have an impact on air quality, land (landscape), and surface and ground water. The proposed project site's landscape features include soil, flora, and fauna, and runoff water will be channeled to drains around the proposed site location.

5.1.2 Geographical Area of Influence

The immediate geographical area of influence for the proposed sub-project are located at between Latitudes 7° 13' 00N" to Longitude 3°31' 00" E for Odeda LGA, 7° 14' 00N" to 3° 02' 00"E for Yewa LGA and Latitude 6°53'59" and Longitude 4°00' 60" for Ijebu North LGA.

5.1.3 Community Influence & Vulnerable Persons

The proposed project's implementation could have an impact on the economic conditions of nearby communities. Construction projects provide opportunities for local food vendors to sell to construction workers in a secure environment.

Artisans and other construction workers will also be employed on a temporary basis as a result of the project. Vulnerable groups are those who are at risk of being disadvantaged and require special consideration in project design. Vulnerable individuals include, but are not limited to:

- Disabled members of the community
- Women
- Children.

5.1.4 Institutional Influence

The major institutions to be influenced or involved in the proposed project include:

- Odeda, Yewa & Ijebu east Local Government Councils
- Federal Ministry of Environment
- Federal Ministry of Women Affairs
- National Environmental Standards Regulatory Agency NESREA
- Ogun State Ministry of Women Affairs
- Ogun State Ministry of Environment
- Ogun State Ministry of Works

5.2 Screening of environmental & social impacts

The objective of screening is to determine the appropriate level of environmental and social impact for a proposed subproject. The Environmental and Social screening process characterizes sub-projects and activities that will require thorough environmental & social review to prevent/mitigate negative environmental & social impacts or those which will provide opportunities to enhance positive impacts.

All potential project sites under this phase of the Ogun NFWP intervention have been screened for Environmental and Social (E&S) impacts prior to approval by the SPCU. The screening process included a robust assessment of the project to determine:

1. The appropriate project categorization EA;
2. Applicable World Bank environmental and social safeguards;
3. Potential for environmental and social liability; and
4. Cultural or other sensitivities

5.3 Potential Impact of the proposed project activities

The construction of the cassava production hubs sub-project will have environmental and social impacts, which may be negative or positive. Some of the potential positive and negative impacts are discussed in the subsequent sections.

5.3.1 Potential Positive Environmental Impacts

The potential positive environmental and social impacts are as shown in Table 7.

Table 7: Potential Positive Environmental & Social Impacts

No.	Impact	Key receptor(s)	Evaluation
1	Enhanced capacity of agricultural farms and overall improved agricultural output for cassava value chain.	Communities	The proposed project when completed will deliver better access to cassava production hubs facilities in the communities; Increase in cassava value chain output from farms.
2.	Employment generation	Community members	The proposed construction sub-project activities will create employment opportunities for skilled and unskilled labour during the construction and operational phases. Also, there are indirect employment opportunities such as food vendors, petty traders and suppliers of raw materials for construction. During the operational phase, job opportunities will be created for maintenance workers and suppliers, waste management companies, etc.
3.	Improvement in local and national economy	Neighboring communities, LGA and national economy	The creation of direct and indirect job opportunities during the construction and operational phases of the project will boost the local and national economy
4.	Stakeholders' engagement	State Government, LGAs	Improvement of public goodwill and satisfaction towards governance in Ogun State.
5.	Improvement in management of resources	Neighboring communities, State Government, MDAs	Provision of a lead way to drive the State Government towards ensuring improved infrastructure
6.	Capacity building and strengthening of institutions	State Government, MDAs	Capacity building through: Strengthening of facility rehabilitation works and supervision systems of personnel involved in sub-project activities, including improvement in institutional responsibilities for construction and maintenance. Transfer of skills

5.2.2 Potential Negative Environmental and Social Impacts

Implementation of this sub-project would exert some negative impacts on the social and physical environment within the communities, in which they are implemented.

The potential adverse impacts are evaluated with respect to the Pre-construction phase, Construction phase and the Operation and Maintenance phase. Impacts are classified as Low, Moderate and Significant.

- **Major Impact:** An impact of high significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued resource. The impact is very strong and cannot easily be reduced.
- **Moderate Impact:** an impact is described as moderate when it is within the accepted limits and standards. The impact on the environment is substantial but can be reduced through specific mitigation measures.
- **Low Impact:** An impact is low when the magnitude is sufficiently small and well within accepted standards and receptor is of low sensitivity. The impact on the environment is significant but subdued and may or may not require the application of mitigation measures.

The potentially adverse impacts that would result from the project are expected to be site-specific, noncumulative, and relatively easy to mitigate to acceptable levels.

An evaluation of the potential adverse impacts is presented in Table 8.

Table 8: Evaluation of potential adverse Environmental & Social Impacts

s/n	Project Phase	Impact	Activities	Significance
1.	Pre-construction phase	Land Preparation	Setting out for preparation of construction site, positioning of materials and equipment. These may pose injury to workers and the public. The use of standard safety practices will be implemented.	Low
		Occupational Health & Safety and traffic/public Safety Issues	Weeding and clearing of entire project site. This will lead to the use of tools & equipment for clearing.	Low
		Involuntary resettlement	Displacement of Communities: Construction activities may lead to the displacement of communities residing in the project area, resulting in loss of homes, farmland, and livelihoods.	Low
		Loss of Livelihoods	Farmers and workers dependent on the land for cassava cultivation may experience disruptions to their livelihoods due to land acquisition or changes in land use.	Low
		Social Inequality	The influx of construction workers and investment may exacerbate existing social inequalities within the community, leading to issues such as housing shortages, increased cost of living, and unequal distribution of benefits.	Moderate

s/n	Project Phase	Impact	Activities	Significance
	Construction phase	Loss of vegetation and impacts on fauna	The construction of the proposed building project will require the clearance of vegetation for the footprint of the main layout. The vegetation to be lost are mainly grasses and shrubs. The vegetation is limited to the project site and of local extent and will therefore not result in the loss of any species of conservation and animal habitats.	Low
		Effects on the local microclimate	The construction of the proposed building project will require the clearance of some shrubs for the footprint of the main layout. The clearance will however be limited to the footprint of the main building and therefore will not affect temperature or precipitation.	Low
		Soil pollution, disturbance and erosion.	Excavation works, clearing of the topsoil, levelling and other ground works will expose and loosen soil making it susceptible to erosion. The impact is temporary during the construction and can be properly managed through good construction.	Moderate
		Air quality deterioration	Loading, haulage and dumping of construction aggregates as well as cement handling will generate dust that can affect the air quality. Dust particles can be blown from the site through winds. Dust levels will be temporary, local in extent and average in intensity depending upon the weather conditions.	Moderate
	Construction phase	Vibration and noise nuisance	The pumping of pre-mix concrete, operation of onsite concrete mixers, movement of delivery trucks, carpentry and welding works will generate noise and vibration. The impact from the construction related noise will be intermittent, temporary and of local extent.	Moderate
		Generation and disposal of solid waste	Excavated materials are likely to form the bulk of waste to be produced from the construction activities. Removal of vegetation as well as cement papers, food wrappers, used sachet water plastics and domestic refuse from food vendors who may be selling on the site will generate a lot of waste. This impact is local in extent and temporary, lasting throughout the construction phase.	Moderate
		Risk of pollution and deterioration of water quality	Use of equipment for Excavation works, clearing of the topsoil, levelling and other ground may	Moderate

s/n	Project Phase	Impact	Activities	Significance
	Construction phase		nearby expose water bodies to pollution from oil from P&E.	
		Risk of work accidents and occupational diseases	The use of heavy construction equipment, excavation works, working at height may cause injuries to artisans when proper safety inductions are not done.	Moderate
		Risk of spread of infectious diseases, respiratory and skin infections	Interaction of workers on site through work activities may create the avenue for the spread of diseases, respiratory and skin.	Low
		Traffic disruptions	Movement of trucks on routes leading to the site may hinder traffic movement of persons and institutional vehicles.	Moderate
		Occupational health and safety	Construction and excavation activities, movement of equipment, material handling and lifting, dust generation, open trenches pose a threat to workers and artisans on the project site. The extent of impact could be temporary or permanent.	Moderate
		Social Disruption	Construction activities can disrupt the social fabric of local communities, causing stress, tension, and conflicts among residents	Moderate
		Land and Resource Conflicts	Construction activities may escalate existing conflicts over land ownership, resource use, and access rights among different stakeholders.	Low
		Cultural Impact	The construction of the hub may have cultural impacts by altering traditional landscapes, heritage sites, and community identities.	Low
		Risk of grievance and conflict	Grievances and conflicts on sites may disrupt work activities that could ultimately lead to project delays.	Low
		Community divisions	Differences in opinion regarding the construction project can lead to divisions within the community, affecting social cohesion and community relations.	Low
3.		Waste management and disposal	Disposal of soil and waste from the building. The extent of impact is continuous and local.	Moderate
		Public health and safety	Irregular maintenance of horticultural works and surrounding fauna which may lead to the breeding grounds for mosquitoes and other reptiles like snakes.	Low
		Occupational health & safety	Internal and external cables that are not properly buried can lead to	Low

s/n	Project Phase	Impact	Activities	Significance
	Operation phase		electrocution. Construction debris that are still on site after project has been completed.	
		Emission of bad odours	Lack of proper ventilation of waste lines for W. C's and installation of sanitary accessories such as bottle traps for basins can lead to the emission of bad odours.	Low
		Fire hazards	Poor cabling works and lack fire furniture i.e., smoke detectors, fire extinguishers	Low
		Early degradation of the building due to misuse and lack of maintenance	Poor maintenance of building i.e., painting, replacement of damaged fittings etc. that will lead to fast deterioration of the building.	Moderate
		gender-based violence and sexual harassment	Gender-based sexual advances at the workplace that are unconsent in nature.	Major
		Risk of spread of COVID19, respiratory and skin infections	Interaction of workers on site through work activities may create the avenue for the spread of COVID19, respiratory and skin.	Moderate
4.	Decommissioning phase	Risk of work accidents and occupational health and safety issues	Removal of construction equipment from site, transporting of materials and equipment.	Moderate

CHAPTER FIVE: ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

5.1 Background

The project is envisaged to be of enormous benefit to the participating communities and the State at large. The scale of the sub-project is such that severe negative impacts are not anticipated. The negative environmental and social impacts will be localized in spatial extent, short in duration and can be reduced or minimized through compliance with the implementation of the appropriate mitigation measures contained in Table 9.

Table 9: Environmental and Social Management & Monitoring Plan

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
A	Pre-construction phase							
I	Environmental Impacts							
1	Land Preparation For the construction of facilities for the cassava & rice value chain production & processing & maize warehouses	<ul style="list-style-type: none"> Clearing of only weeds and leaving shrubs that are not affected by the main construction. The use of standard safety practices will be implemented. 	Contractor	No additional cost	Strategy for removal of weeds.	Compliance with standard safety practices in place.	Environmental & Social Safeguard Officers	No additional cost
2	Bush burning for land clearing	<ul style="list-style-type: none"> Adopt sensitisation programmes to discourage bush burning practices. 	Contractor	50,000	Sensitization programmes conducted.	General Compliance	Environmental & Social Safeguard Officers	25,000
3	Occupational Health & Safety and traffic/public Safety Issues	<ul style="list-style-type: none"> Cordoning or fencing off of project site Positioning of safety warning signs. Use of Personal Protective Equipment (PPE) Relocation of streetlights from current location in and around project site. Develop and implement a project specific Occupational Health and Safety Plan (OHSP). Provision of adequate first aid, first aiders, PPE, signage (English 	Contractor	50,000	OHSE Plan prepared and implemented. Employee use of PPE	Compliance with standard OHS safety practices in place.	Environmental & Social Safeguard Officers	25,000

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		and Yoruba languages).						
II	Social Impacts							
4	Involuntary resettlement	<ul style="list-style-type: none"> Conduct of appropriate involuntary resettlement studies to identify assets and persons affected. 	Contractor	No additional cost	Complaints in GRM register. Number of grievances reported.	Record of grievances or complaints resolved	Ogun NFWP social safeguards officer	No additional cost
5	Loss of Livelihoods			No additional cost	Complaints in GRM register. Number of grievances reported.	Record of grievances or complaints resolved	Ogun NFWP social safeguards officer	No additional cost
6	Social Inequality	<ul style="list-style-type: none"> Enforce the local content policy to ensure that opportunities are first offered to local communities Undertake community sensitization meetings and stakeholder engagements to create cordial relationship with hosts community, obtain feedback and provide updates on grievance uptake channels. Provision of alternate sanitary facilities for workforce to reduce pressure on community. 	Contractor	No additional cost	Complaints of social inequality obtained.	<ul style="list-style-type: none"> Sensitization meetings held with local community. Provision of alternate facilities for workers. 	Ogun NFWP social safeguards officer	No additional cost
B	Construction phase							
I	Environmental Impacts							

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
7	Loss of vegetation and impacts on fauna	<ul style="list-style-type: none"> Vegetation clearing is to be limited to only areas that are defined by the design for the cassava hub. Replace all affected trees by planting elsewhere. 	Contractor	No additional cost	Clearly defined boundaries of chance find areas Visual observation	Available number and diversity of plant species within baseline conditions	Ogun NFWP Env safeguards officer Ogun State Ministry of Environment	No additional cost
8	Effects on the local microclimate	<ul style="list-style-type: none"> Shrubs not affected by infrastructure should be left as part of horticulture. 	Contractor	No additional cost	Visual observation	Available number and diversity of plant species within baseline conditions	Ogun NFWP Env safeguards officer Ogun State Ministry of Environment	No additional cost
9	Soil pollution, disturbance and erosion.	<ul style="list-style-type: none"> Work on exposed trenches and earth materials will as much as possible be completed before new trenches are excavated. Excavated materials and soil which cannot be used will be disposed at appropriate designated sites. 	Contractor	No additional cost	Work schedule to provide timetable for trenching work	Compliance with timetable	Ogun NFWP environmental safeguards officer Ogun State Ministry of Environment	No additional cost
10	Air quality deterioration from vehicles and equipment	<ul style="list-style-type: none"> Sensitize on use water to wet active areas for dust suppression. Enforce appropriate speed limit to reduce vehicle noise levels. Restrict noise-generating activities strictly to normal 	Contractor	50,000	Air quality parameters (CO, NO ₂ , SO ₂ , CO ₂ , SPM) Maintenance records	FMEv permissible limit.	Ogun NFWP environmental safeguards officer Ogun State Ministry of Environment	30,000

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		working hours (i.e. 9am – 5pm).						
11	Vibration and noise nuisance	<ul style="list-style-type: none"> Provide and enforce the usage of hearing protection devices (ear plugs/muffs) for workers. Ensure proper scheduling of use of P&E to period when public facilities such as community schools are not in use 	Contractor	50,000	Noise level test (Not to exceed 80dB(A) for 8 hours working period.	FMEv permissible limit	Ogun NFWP environmental safeguards officer Ogun State Ministry of Environment	20,000
12	Generation and disposal of solid waste	<ul style="list-style-type: none"> Excavated materials are likely to form the bulk of waste to be produced from the construction activities. Removal of vegetation as well as cement papers, food wrappers, used sachet water plastics and domestic refuse from food vendors who may be selling on the site will generate a lot of waste. This impact is local extent and temporary, lasting throughout the construction phase. 	Contractor	No additional cost	Provision of a waste management plan	Non-compliance.	Ogun NFWP environmental safeguards officer Ogun State Ministry of Environment	No additional cost
13	Risk of pollution and deterioration of water quality	Consultation with relevant agencies to identify water service supply lines before excavations commence.	Contractor	No additional cost	Meeting with local agency.	Disruptions in water service line activities.	Ogun NFWP environmental safeguards officer	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
							Ogun State Ministry of Water resources	
14	Risk of work accidents and incidents	Prepare and enforce proper OHS work procedures and instructions	Contractor	100,000	OHSE Plan prepared and implemented	Site inspections and HSE walkabouts in project area.	Ogun NFWP environmental safeguards officer	30,000
15	Risk of spread of infectious diseases, respiratory and skin infections	Interaction of workers on site through work activities may create the avenue for the spread of diseases, respiratory and skin.	Contractor	No additional cost	OHSE Plan prepared and implemented	Non-compliance	Ogun NFWP environmental safeguards officer Ogun State Ministry of Environment	No additional cost
16	Occupational health and safety issues from use of tools	<ul style="list-style-type: none"> Workers should get a daily induction/toolbox talk or meeting on use of tools before going on the site. Provision of adequate first aid, first aiders, PPE, signage (English and Yoruba languages). 	Contractor	100,000	OHSE Plan prepared and implemented Employee use of PPE	Compliance with OHSE plan. Site inspections and HSE walkabouts in project area.	Environmental & Social Safeguard Officers	20,000
17	Traffic disruptions	<ul style="list-style-type: none"> Select and use vehicles/equipment with lower sound power levels. Use of traffic flagmen around public spaces such as schools, religious centers etc. 	Contractor	No additional cost	Traffic management plan of contractor	Non-compliance	Ogun NFWP environmental safeguards officer	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
18	Community safety	<ul style="list-style-type: none"> Enforce appropriate speed limit to prevent accidents. 	Contractor	No additional cost	Traffic management plan of contractor	Non-compliance	Ogun NFWP environmental safeguards officer	No additional cost
II	Social Impacts							
19	Social Disruption	<ul style="list-style-type: none"> Schedule and conduct regular stakeholder engagements with community to give them periodic updates and take feedback regarding construction activities. Maintain open communication channels with community leadership to ensure direct access regarding information exchange. 	Contractor	No additional cost	Timetable for periodic community engagement meetings Complaints of social disruptions	Records of engagement meetings held with community. Record of complaints	Ogun NFWP social safeguards officer	No additional cost
20	Land and Resource Conflicts	<ul style="list-style-type: none"> Conduct periodic stakeholder engagements on grievance uptake channels available for complaints. 	Contractor	No additional cost	Timetable for periodic community engagement meetings Complaints or conflicts	Records of engagement meetings held with community. Record of complaints or conflicts	Ogun NFWP social safeguards officer	No additional cost
21	Cultural Impact	<ul style="list-style-type: none"> Identify all areas of cultural sensitivity and ensure machinery avoid any areas that are close to project sites. 	Contractor	No additional cost	Compliance with cultural requirements in community	Record of complaints of non-compliance with cultural issues.	Ogun NFWP social safeguards officer	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		<ul style="list-style-type: none"> Proper sensitization to all personnel to prevent working during Community festival and cultural ceremonies 	Contractor	No additional cost	Compliance with cultural requirements in community	Record of complaints of non-compliance with cultural issues.	Local Community heads Ogun NFWP social safeguards officer Local Community heads	No additional cost
22	Risk of grievance and conflict from labour influx.	<ul style="list-style-type: none"> Ensure community have priority opportunity to employment for skilled and semi-skilled work Promote equal opportunities for employment for all (both male & female) Conduct sensitization of community through town hall meetings and stakeholder engagements on grievance uptake channels available for complaints. Encourage compliance with labour influx plan in annex 8. Promote equal opportunities for employment for all (both male & female) Develop an induction program including a 	Contractor	No additional cost	Workers manual, employment codes etc. Level of awareness of local culture by migrant workers. Grievance Redress System Ratio of migrant to local workers.	Visual observation and interviews. Community perception level and of satisfaction. Compliance with labour influx plans.	Ogun NFWP social safeguards officer Local Community heads	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		code of conduct for all workers.						
23	Child Labour	<ul style="list-style-type: none"> Ensure contractor staff are informed of legal consequences of child labour to discourage practice. Regular sensitization programmes to discourage this practice. 	Contractor	50,000	Workers manual, employment codes etc. Level of awareness of local culture by migrant workers.	Compliance with child labour laws and commitments in workers manual and employment codes.	Ogun NFWP social safeguards officer	50,000
24	Community divisions	<ul style="list-style-type: none"> Have in place a designated Community Liaison Officer (CLO) from the community, whose responsibility 	Contractor	No additional cost	Complaints and grievances.	Record of grievances and complaints	Environmental & Social Safeguard Officers	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		will be to promote social cohesion and community relations.				Community perception and level of satisfaction.		
C	Operations Phase							
I	Environmental Impacts							
25	Waste management and disposal	<ul style="list-style-type: none"> Disposal of soil and waste from the building. The extent of impact is continuous and local. 	Contractor	No additional cost	Availability of a Waste management plan.	Compliance with requirements of waste management plan.	Environmental safeguards officer	No additional cost
26	Public health and safety in use of generators or any other type of equipment for energy sources	<ul style="list-style-type: none"> Ensure generator or other equipment is operated by dedicated trained personnel Carry out regular servicing of generator to prevent CO build. 	Contractor	No additional cost	Equipment use, maintenance and operators' timetable	Records of compliance with timetable.	Environmental safeguards officer	No additional cost
27	Occupational health & safety	<p>Develop and implement a project specific Occupational Health and Safety Plan (OHSP). OHSP to include but not limited to:</p> <ul style="list-style-type: none"> Cordoning off project site to prevent intrusions from general public Prohibition of drug and alcohol use by workers while on the job. Use of personal protective equipment (PPE) 	Contractor	100,000	<p>Availability of an OHSE plan.</p> <p>Use of Personal Protective Equipment.</p>	<p>Compliance with use of OHSE</p> <p>Compliance with use of Personal Protective Equipment.</p>	Environmental safeguards officer	No additional cost
28	Emission of bad odours	<ul style="list-style-type: none"> Provide proper ventilation of waste lines for W.C's and installation of sanitary 	Contractor	No additional cost	Visual inspection of ventilation and provision of	Complaints on odours	Environmental safeguards officer	No additional cost

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		accessories such as bottle traps for basins to prevent the emission of bad odours. <ul style="list-style-type: none"> • Ensure daily disposal of bins and waste. 			bottle traps for basins.		Engineering unit of Ogun NFWP	
29	Fire hazards	<ul style="list-style-type: none"> • Use of smoke detectors, fire extinguishers. • Installation of fire extinguishers and have muster points for emergencies 	Contractor	No additional cost	Provision of firefighting equipment.	Compliance with fire safety requirements. Visual inspection of smoke detectors and fire extinguishers and muster points.	Environmental safeguards officer	No additional cost
30	Early degradation of the building due to misuse and lack of maintenance	<ul style="list-style-type: none"> • Undertake proper QA/AC checks of materials procured for use on the site • Prepare work procedures for maintenance of building • Conduct regular maintenance visits to ensure compliance. 	Contractor	No additional cost	Records of QA/QC assessment of materials.	Visual inspection of compliance with QA/QC standards. Inspection of building walls for cracks.	Environmental safeguards officer	No additional cost
II	Social Impacts							
31	gender-based violence and sexual harassment	<ul style="list-style-type: none"> • Regular training of staff to sensitize on Gender Based Violence and Sexual Harassment issues. • Promote staff and employee commitment / policy to cooperate with law enforcement agencies investigating 	Contractor	No additional cost	Records of training and awareness conducted and evidence of GBV track protocols	Visual inspection of records.	Social safeguards officer	30,000

s/n	Potential Impact	Mitigation measures	Responsible Party	Mitigation Cost (NGN)	Parameters to be measured	Performance Indicator	Monitoring responsibility	Monitoring Cost (NGN)
		perpetrators of gender-based violence; <ul style="list-style-type: none"> Provision of opportunities for workers to regularly return to their families; Provision of opportunities for workers to take advantage of entertainment opportunities away from rural host communities. Enforce the contractor sexual harassment policy. 						
D	Decommissioning Phase							
32	Risk of work accidents and occupational health and safety issues	<ul style="list-style-type: none"> Removal of construction site, positioning of materials and equipment The use of standard safety practices will be implemented. 	Contractor	No additional cost	Use of the OHSE plan containing the Health & Safety Standards.	Records of compliance with Health & Safety standards.	Environmental Safeguards Officer	No additional cost
	Sub Total Mitigation for 1-site			550,000.00	Sub Total Monitoring for 1-Site			230,000.00
	Mitigation for 51-sites			28,050,000.00				11,730,000.00

CHAPTER SEVEN: ENVIRONMENTAL & SOCIAL MANAGEMENT STRUCTURE

7.0 Environmental Management Structure

The overall goal of the Environmental and Social Management Plan is to progressively reduce the adverse impact of the project activity on the environment with the ultimate aim of eliminating them. The significant positive impacts on the other hand, will be enhanced to ensure sustainable development. This shall be accomplished by;

- a) Ensuring strict adherence to and compliance with stipulated legislation on environmental protection.
- b) Integrating environment into the project plan, development and operational philosophies.
- c) Ensuring compliance with mitigation measures in ESMP Plan.
- d) Providing standards for overall planning, operation, audit and review.
- e) Ensuring the application only of environmentally sound procedures during the life span of the project.
- f) Promoting the environmental management awareness among workers.

7.1 Implementation of the ESMP

The Environmental Social Management Plan is and shall remain a dynamic management tool. Periodic review and update of ESMP shall be carried out throughout the project's life span so as to incorporate new and better environmental technologies, regulations, management systems, guidelines and policies.

For a successful implementation of the ESMP, it is necessary to have a structure that will assign roles and responsibilities at every stage of the monitoring process. A report on the monitoring programme will provide the contractor and Ogun NFWP with relevant data and information to better understand the extent of implementation of the ESMP. All monthly progress reports will capture health, safety and environmental issues arising from the

implementation of the ESMP. The Ogun NFWP, and any institution participating in the implementation, will not issue a Request for Proposal (RFP) of any activity without the construction phase's Environmental and Social Management Plan (ESMP) inserted in, and will not authorize the works to commence before the contractor's ESMP (C-ESMP) has been approved and integrated into the overall planning of the works.

7.2 Implementation of the ESMP

An ESMP Project Implementation Unit within the Ogun State PIU shall be responsible for implementing this ESMP and this team will comprise; the State Project Coordinator, the Environmental Safeguards Officer & the Social Safeguards Coordinator & the Engineering unit. Their functions shall include:

- Ensuring project compliance with all pertinent environmentally friendly, health and safety regulations.
- Liaising with the National Office at Federal level.
- Liaising with all relevant regulatory bodies and organizations – FMEnv, Nigerian Fire Service, etc., to ensure compliance with all local government authority requirements.
- Formulating and reviewing environmental, health and safety policies and practices, as well as social matters associated with the project.
- Assisting in the education and training of project staff on environmental, social and safety awareness.
- Making budgetary provision for the environmental policies of the project.
- Undertaking environmental and social monitoring activities for the project.

- Monitoring of all environmental policies during pre-construction and construction phases of the project, including those related to bio-physical and socioeconomic/cultural components.
- Working closely with construction workers to ensure that all monitoring and mitigation guidelines recommended for the project are strictly adhered to during the various phases. This will include following all health and safety guidelines outlined.
- Coordinating investigations on all types of accidents.
- Conducting environmental audits in accordance with project monitoring guidelines.
- Preparation of relevant environmental reports covering the project.

7.3 Capacity assessment for Implementation of ESMP

The SPCU possesses capacity for ensuring that gender issues are properly addressed in this intervention. Thus, this strength would sufficiently address matters related to gender-based violence (GBV) and sexual exploitation & abuse (SEA). However, there is a need to close capacity gaps in the following areas:

- Identifying risks associated with the construction of proposed buildings for the production, processing of cassava & rice value chains and building of warehouse for storage of maize.
- Importance of understanding occupational and public health and safety (OHS) risks associated with the proposed interventions and being able to promote OHS compliance in the workplace.
- Effective project monitoring.

Consequently, to close these gaps, the capacity of the PCU for implementing this ESMP will require strengthening and this will be partly achieved through the organizing of a training Workshop. The other aspect of the capacity

development would be for the contractor to conduct daily toolbox talks with the contractor staff to sustain awareness about safe work practices and procedures to prevent accidents and incidents. The training workshop would center on training topics presented in Table 10.

Table 10: Capacity building plan for implementation of the ESMP

Training topics	Cost NGN
<ul style="list-style-type: none"> • Training Workshop on implementation of ESMP: • World Bank Safeguards Policy triggered and environmental management. • Construction works safeguard requirements. • Sensitization of workers on child sexual exploitation and HIV/AIDS, labour influx, Gender Based Violence, and their mitigation measures. • Induction on occupational and public health and safety (OHS) requirements of the works and environmental management • Training on Contractor’s, manager’s and Worker’s Code of Conduct understanding • Risk assessment on building construction for cassava production. • Conducting Health and Safety Assessments. <p>Developing and implementing mitigation measures</p>	150,000
Sub-Total (Capacity Building) for each site	150,000.00
Grand Total (Capacity Building) for 52-sites	7,800,000.00

7.4 Occupational Health & Safety Management

The overall goal of the Environmental, Social, Health and Safety provisions for the civil works is to ensure that all environmental and social concerns attributable to project activities are effectively addressed by the contractor. Some of the HSE risks associated with this sub-project include exposure of workers to noise from use of machines for construction activities, incidents such as fall from heights, accidents from the use or operation of these plant, equipment & tools such as cutlasses, hammers etc., trip hazards in the workplace from use of cables, stagnant water in excavated pits that may become a breeding ground for mosquitoes etc. Consequently, the ESMP matrix table provides guidelines to ensure that these requirements are effectively carried out in a manner that would guarantee implementation is

in compliance with local laws and international conventions as well as Environmental and Social Policies. The OHS plan & environmental, health, social and safety management plan is presented in Annex 5 of this report. In addition, the guidelines provided in the Section 47 of the Factory Act in line with the National Policy on Occupational Safety and Health developed in 2006, shall be strictly complied with in the Construction, Operation and Maintenance phases of the project. These regulations cover the major safety areas on this sub-project.

7.5 ESMP Cost & Analysis

Detailed environmental and social mitigation measures for pre-construction, construction and operational phases have been provided in Table 11. The construction work shall be carried out by different contractors for the sites and as such ESMP estimates show cost for each individual contractor and also presents the total estimate.

The environmental and social management actions is estimated at Fifty-Three Million, Two Hundred and Seventy-Three Thousand Naira Only (₦53,273,000.00), with its Dollar equivalent of Forty-One Thousand Seven Hundred and Seventeen Dollars Only (\$41,717).

Table 11: ESMP Budget

		Cost Estimate
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S/n	ESMP Implementation Areas	Responsibility	Naira (₦)	USD (\$)
1	Mitigation	Contractor/ Supervising Consultant/SPCU Safeguards Unit	550,000.00	431.00
2	Monitoring	SPCU M& E Unit/ Safeguards Unit	230,000.00	180.00
3	Capacity Building (including training on Code-of-conduct)	Lead Contractor/ Engineering Consultant/ HSE-OHS Consultant/SPCU Safeguards Unit	150,000.00	117.00
4A.	Sub-total for each Site	SPCU	930,000.00	728.00
4B.	Total mitigation & monitoring for 51-Sites	SPCU	47,430,000.00	37,141.00
5	Disclosure	SPCU/State MoEnv. /FMEnv/W-Bank	1,000,000.00	783.00
Sub-Total			48,430,000.00	37,925.00
8	Contingency (10% of Sub-total)		4,843,000.00	2,793.00
Grand Total			53,273,000	41,717.00

Currency Unit = Nigerian Naira
 US\$1 = ₦1277 (CBN rate of April 24, 2024)

7.6 Grievance Redress Mechanism

To ensure social accountability, inclusion, sustainability and transparency in the implementation activities, the Ogun State NFWP has established a mechanism to receive and act on complaints and grievances by beneficiaries, stakeholders or project affected persons (PAPS) against activities being conducted by the Project in the State. This grievance mechanism is important as it provides a channel for dispute resolution that avoids litigation and delays that accompany them. The potential areas of grievance will include:

- Disruption of traffic flow along the road leading to the intervention sites
- Noise generation around the community;
- Dust dispersal;
- Poor housekeeping at project site;
- Improper behavior by artisans towards members within the community.

7.7 Existing GRM in Project Area

There is an efficient community level grievance process already existing in the project area. In the traditional way of resolving matters, the complaint is taken directly to the village head or Baále of the community. If unresolved at this level, the matter is escalated to the level of the district head. In non-criminal cases such as domestic or family disputes, the district head invites the parties and conciliatory steps are taken to assuage them. However, in criminal cases, the matter is referred to the police. Any matter that remains unsettled at this level is taken to the palace of the Oba, where it will receive a fair mediation.

7.8 Grievance Redress Process

All the grievances will be channeled via the Grievance redress committee for each sub project at the sector level. There is no ideal model or one-size-fits-all approach to grievance resolution. The best solutions to conflicts are generally achieved through localized mechanisms that take account of the specific issues, cultural context, local customs and project conditions and scale. In its simplest form, grievance mechanisms can be broken down into the following primary components:

- I. Receive and register a complaint
- II. Acknowledgement
- III. Screen and assess the complaint
- IV. Formulate a response (within a specified time frame)
- V. Select a resolution approach
- VI. Implement the approach
- VII. Settle the issues
- VIII. Track and evaluate results
- IX. Appeals process

- X. Monitoring and reporting to project management to detect systemic problems;
- XI. Learn from the experience and communicate back to all parties involved.

7.9 GRM Communication Channels

According to the NFWP GRM Manual, the following can receive grievances from complainants under the NFWP GRM:

1. Grievance Volunteers and Ward Facilitators (at community level).
2. LGA Field Supervisors (LFS) and WAG Support Officers (at LGA level).
3. SPCU GRM Focal Points - specifically the Social Safeguards and Environmental Safeguards Anchors and Advisers (at State level).
4. FPCU GRM Focal Points – specifically the Social Safeguards and Environmental Safeguards Anchors and Advisers (at Federal level).

If a grievance cannot be resolved in these informal venues, the complainant may take recourse to the administrative and legal systems for satisfaction. GRM flowchart is shown in Figure 5.

Complaints can be logged verbally in writing, by sms or by phone call to the Social Safeguards Officer at the Ogun NFWP. The WAGSO & LFS can also receive complaints at the second level. The Ogun NFWP Social safeguards officer will inform the team leader of the grievance redress committee within 24 hours on any complaint lodged. The GRM flowchart is presented in Figure 6.

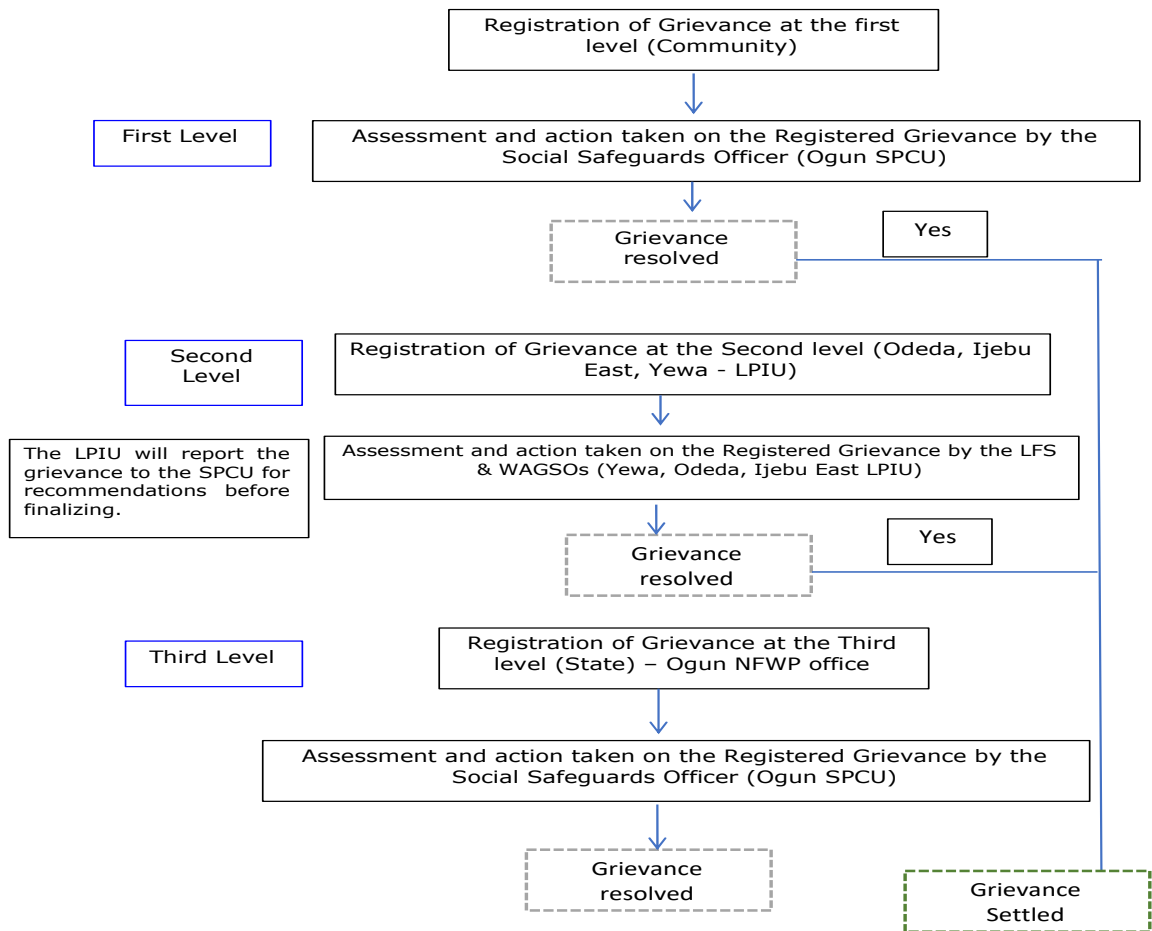


Figure 7: Flow Chart for GRM

CHAPTER EIGHT: DISCLOSURE OF ESMP

8.0 Introduction

The World Bank (WB) requires that the ESMP should be submitted for public disclosure purposes. The disclosure will take be carried out at the in-country level as well as disclosure at the infoshop of the World Bank.

8.1 In-Country Disclosure Process

The ESMP will be submitted to the World Bank for clearance. After clearance from the World Bank, the ESMP will be publicly displayed for disclosure during which it would be made available to the Local Government Authority Offices of Odeda, Yewa & Ijebueast. In addition, it shall also form part of the tender documents for contractors to bid in the tendering process which will be published in a national newspaper.

8.2 World Bank Info-shop

Copies of the final ESMP will be submitted in electronic form to the World Bank and the document will be disclosed at the Infoshop of the Bank.

CHAPTER NINE: CONCLUSION

9.2 Conclusion

The project implementation shall be committed to ensuring sustainable environmental management and safeguarding the health and safety of the construction workers and the public during the implementation of the proposed project. The project implementation team is aware of the national building regulation of Nigeria and will ensure that the project follows the guidelines and requirements. This ESMP has identified and assessed key environmental and social impacts and concerns that may arise from the implementation of the proposed project.

Consultations, field inspections and studies helped in the identification of the project's adverse environmental and social impacts. A monitoring programme to help detect changes arising from the predicted adverse impacts has also been presented in this ESMP as it has provided in detail the mitigation measures for identified potential adverse impacts associated with the various phases of the project, and a monitoring program to ensure compliance. In conclusion, with adequate application of these mitigation measures, the impacts will be avoided, reduced or mitigated, and in very few cases they may be offset.

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Annex 1: Participants List for Stakeholder Consultations

s/n	Name of Participant	Institution
1	Mrs. Bolanle Fadairo	State Project Coordinator, Ogun State Nigeria for Women Project
2	Mr Ajibade Rasheed	Head of Operations, Ogun NFWP
3	Adeosun Olusola	Livelihood Advisor, Ogun NFWP
4	Opeoluwa Asoro	Social Safeguards Advisor, Ogun NFWP
5	Akinola Oluwaranti	Environmental Safeguards Advisor, Ogun NFWP
6	Shobowale Omoyemi	Social Safeguards Anchor, Ogun NFWP
7	Mr. Musibau M.O	Project Secretary, Ogun NFWP
8	Mrs. Awobadejo Elizabeth	Deputy Director, Ministry of Local Government
9	Onasanya Modupe	Assistant Director, Ministry of Environment
10	Quadri Damilola	Deputy Director, Ministry of Local Government Affairs
11	Mr. Kehinde Ebenezer	Head of Post-Harvest Unit, Ministry of Agriculture
12	Olla Abiodun	Environmental Health Officer, Ministry of Environment
13	Mr. Femi Adelusi	Consultant
14	Mr. Omolayo Bello	Consultant
15	Mr. Yakubu Ikekhua	Consultant

Annex 2: List of sub-project sites

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GP S Coordinate
1	Odeda (4)	Preparation of production site for Agbelere Cassava Production Collective Alabata Odeda Cms	Alabata	Land clearing, site preparation, planting, use of herbicides, fertilizer application	Cassava Production	Lat. 7.311327 Long. 3.496819
2		Preparation of production site for Oluwatimileyin Cassava Production Collective Obete Odeda Cms	Okedi	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.345145 Long. 3.328142
3		Preparation of production site for Iwajowa Cassava Production & Marketing Collective Obete - Odeda Cms	Mologede	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.344607 Long. 3.329545
4		Preparation of production site for Agbelere Cassava Production & Marketing Collective Opeji - Odeda Cms	Araromi Obe	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.418002 Long. 3.415051
5	Ijebu Northeast (1)	Preparation of production site for Temidire Cassava Collective, Igede	Igede	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.91604 Long. 4.096048
6	Yewa North (1)	Preparation of production site for Construction of Facilities Adunlobirin Cassava Production	Iboro	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.067989 Long. 3.087414
7	Yewa North (15)	Construction of Amazing Grace Cassava Production hub	Aibo, Ayetoro	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari	Cassava Production	Lat. 7.22857 Long. 3.013883
8		Construction of production site for Ifedapo Cassava Production hub	Olowu, Ayetoro	Civil works for production hub, cassava peeling, washing,		Lat. 7.227088 Long. 3.033232

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GP S Coordinate
				grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		
9		Construction of production site for Aanuoluwapo Cassava Production	Idagba, Ayetoro	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.2442498 Long. 3.0368091
10		Construction of Temidire Cassava Production	Oke Ola, Ayetoro	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.261278 Long. 3.054802
11		Construction of Asekunlowo Cassava Production	Igbogila	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 6.952224 Long. 3.044038
12		Construction of Precious Cassava Production	Ibese	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 6.952224 Long. 3.044038
13		Construction of Ibukunoluwa Cassava Production	Owode Ketu	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving,		Lat. 7.126952 Long. 2.919598

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GPS Coordinate
				cooling, bagging of gari		
14		Construction of Iyanuoluwa Cassava Production	Ijale Ketu	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.197279 Long. 2.827112
15		Construction of Irewolede Cassava Production Hub	Oja Odan	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 6.8974116 Long. 2.8697126
16		Construction of Mojere Cassava Production Hub	Imasayi	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.071113 Long. 3.07166
17		Construction of Facilities Gbemisola Cassava Production Hub	Ohunbe	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 6.930004 Long. 2.739255
18		Construction of Ifesowapo Cassava Production Hub	Ologiri	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 6.909387 Long. 2.789951

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GP S Coordinate
19		Construction of Ifelodun Cassava Production hub	Saala Orile	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.20686 Long. 2.971164
20		Construction of Ifedapo Cassava Production hub	Igan Okoto	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.20686 Long. 2.971164
21		Construction of Ajosewakonibaje Cassava Production hub	Sawonjo	Civil works for production hub, cassava peeling, washing, grating, pressing, pulverizing, frying, sieving, cooling, bagging of gari		Lat. 7.095508 Long. 3.005105
22		Construction of Ifeparapo Atan Cassava Collective	Atan	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat.: 6.887188 Long.: 4.006852
23	Ijebu Northeast (10)	Preparation of production site for Kebimapalu Nfw Cassava Collective, Atan	Imuroko	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.888768 Long. 4.002657
24		Preparation of production site for Asejere Cassava Production Collective, Senbora	Senbora	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.893074 Long. 4.033854
25		Preparation of production site for Irewolede Odosenlu Cassava Collective	Iyawe	Land clearing, site preparation, planting, use of herbicides,		Lat. 6.857876 Long. 3.986419

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GPS Coordinate
				fertilizer application		
26		Preparation of production site for Ifesowapo Cassava Collective, Odosenlu	Odosenlu	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.845392 Long. 3.999026
27		Preparation of production site for Ifesowapo Iworo Cassava Collective	Iworo	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.85812 Long. 3.971458
28		Preparation of production site for Emmanuel Cassava Collective, Apuren/Isonyin	Isonyin	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.8358517 Long. 3.991035
29		Preparation of production site for Aseyori Cassava Collective	Oke Eri	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.885753 Long. 3.95047
30		Preparation of production site for Itesiwaju Cassava Collective	Ogbogbo	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.81499n Long. 3.91454e
31		Preparation of production site for Agbeloba Cassava Production Collective, Erunwon	Erigo	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 6.841678 Long. 3.963498
32	Odeda (13)	Preparation of production site for Cassava Production And Marketing Collective Odeda Cms	Emere Odeda	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.237915 Long. 3.532197
33		Preparation of production site for Ifesowapo Cassava Production And Marketing	Olugbo	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat.: 7.22391086 Long.: 3.61424770

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GP S Coordinate
		Collective Olugbo Odeda Cms				
34		Preparation of production site for Irewolede Cassava Production And Marketing Collective Itesi-Odeda Cms	Emulu	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.196063 Long. 3.556993
35		Preparation of production site Irepolodun Cassava Production And Marketing Collective Itesi Odeda Cms	Olori	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.223563 Long. 3.556645
36		Preparation of production site Itesiwaju Cassava Production And Marketing Collective Olodo Odeda Cms	Olodo	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.303284 Long. 3.60616
37		Preparation of production site Tioluwalase Cassava Production And Marketing Collective Olodo Odeda Cms	Baagbon	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat.: 7.175114 Long.: 3.420315
38		Preparation of production site Ifesowapo Cassava Production And Marketing Collective Alagbagba Odeda Cms	Babapupa	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.288228 Long. 3.664034
39		Preparation of production site Agbeloba Cassava Production And Marketing Collective Alagbagba Odeda Cms	Owu Soetan	Land clearing, site preparation, planting, use of herbicides, fertilizer application		
40		Preparation of production site Egedola Cassava Production And Marketing Collective Orileilugun Odeda Cms	Orileilugun	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat: 7.387993 Long: 3.666912

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GPS Coordinate
41		Preparation of production site Agbedola Cassava Production And Marketing Collective Orileilugun Odeda Cms	Kila	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat.: 7.365899 Long.: 3.659037
42		Preparation of production site Ifesowapo Cassava Production And Marketing Collective Osiele Odeda Cms	Osiele	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.182944 Long. 3.446289
43		Preparation of production site Agbeloba Cassava Production And Marketing Collective Obantoko Odeda Cms	Aregbe - Obantoko	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat.: 7.175114 Long.: 3.420315
44		Preparation of production site Agbegbemi Cassava Production And Marketing Collective Opeji Odeda Cms	Mawuko	Land clearing, site preparation, planting, use of herbicides, fertilizer application		Lat. 7.236078 Long. 3.339994
45		Construction of facility for Ifelodun Maize Storage And Marketing	Ijoun	Construction of warehouse for maize storage, shelling, threshing, winnowing, packaging, marketing of maize		Lat. 7.141062 Lat. 2.864724
46	Yewa North (3)	Construction of facility for OLA OLUWA MAIZE STORAGE AND MARKETING	OKE OLA, AYETORO	Construction of warehouse for maize storage, shelling, threshing, winnowing, packaging, marketing of maize		Lat. 7.24665 Long. 3.03024
47		Construction of facility for ARISE AND SHINE MAIZE STORAGE AND MARKETING	JOGA ORILE	Construction of warehouse for maize storage, shelling, threshing, winnowing, packaging, marketing of maize		Lat. 7.108738 Long. 3.127045

S/n	LGA	Name of Collectives/Sub-Projects	Community (ies)	Scope of Work	Enterprise	Location/GP S Coordinate
48	Odeda (2)	Construction of facility for Asejere Maize Production And Marketing Collective Obantoko Odeda Cms	Ilugun Obantoko	Civil Works, cassava production hub, parboiling of cassava, soaking of paddy cassava, drying, milling, destoning, polishing and packaging		Lat. 7.161198 Long. 3.42274
49		Construction of facility for IFESOWAPO MAIZE STORAGING AND MARKETING COLLECTIVE ALABATA ODEDA CMS	ALABATA	Construction of warehouse for maize storage, shelling, threshing, winnowing, packaging, marketing of maize		
50	Ijebu Northeast (2)	Construction of facility for Ifesowapo Cassava Production Collective	Iworo	construction of structures involving earthworks, concrete, block, roofing, carpentry, finishing and Landscaping		Lat. 6.865878 Long. 3.970795 Lat. 6.856038 Long. 3.974289
51		Construction of facility IFESOWAPO CASSAVA PRODUCTION COLLECTIVE	ODODEYO	construction of structures involving earthworks, concrete, block, roofing, carpentry, finishing and Landscaping		Lat. 6.845627 Long. 3.994082

Annex 3: Waste Management Plan

1.0 Objectives/Purpose of the Waste Management Plan

The overall objective of this exercise is to support the ESMP to identify the types of general waste generated, characterize the waste streams under the project and to prepare a Waste Management Plan for the construction and operation of the cassava production & processing hubs, rice production and processing hubs and maize storage warehouses, which will identify impacts of the waste that shall be generated over the life cycle of this sub-project and proffer mitigation measures. These measures are presented in the waste management approach.

Table A1: Waste Management approach

Type of Waste		Waste management				
		Reduce	Reuse	recycle	Disposal	Waste to wealth
Construction waste (vegetation, concrete, iron bars etc.)		Rubble and concrete waste comprising concrete and rebars will be further broken down into hardcore	Hardcore generated can be re-used as building material, while re-bars can be used in formwork.	Vegetation waste (shrubs, trees and grass) will be shredded into smaller bits and used as mulching material which will be applied to plants.	Any remaining waste that cannot be recycled or re-used is sent to landfill	NA
Domestic waste	Effluent/ wastewater	Introduce practise of 'use of water only when necessary' approach to reducing water use.	Provide on-site water treatment plant	Use for watering of plants, vegetable or rice paddy around the project site.	Treat with chlorine to remove contaminants before discharge	Conversion of peels and wastewater that have a potential for valorisation into products such as biofuels, bioethanol and starch.
	(Food, vegetables etc.)	NA	Waste segregation will encourage collection of bottles and plastics which can be returned to owner bottling companies for reuse/refilling.	Compostable waste (food etc.) should be taken to the designated compost site to create manure which can be applied to trees/plants on campus.	Non compostable waste should be taken to an incinerator in collaboration with Ogun Waste Management Agency.	
	Sanitary waste (from workers camps)	NA	NA	NA	NA	NA
Cassava waste		Cassava peels waste can be used as animal feed.	Biodegradation of Agric waste into compost.	Waste can be utilised in waste to power plant through the process of		Cassava waste can be converted to biofuel such as ethanol, methanol and

Type of Waste	Waste management				
	Reduce	Reuse	recycle	Disposal	Waste to wealth
			thermochemical recycling into biochar.		biogas through biochemical processes.
Rice mill waste (straw, husk, ash, bran)	Allow the rapid decomposing of rice husks by introducing earthworms to reduce quantities by speeding up decomposition process.	<p>Silica in rice husk can be used as energy source.</p> <p>Biodegradation of Agric waste into compost</p> <p>Rice straw and rice husk can also be used for biofuels.</p>	Waste can be utilized in waste to power plant. The on-site power plant that would generate electricity through gasification and pyrolysis using the rice husk as fuel.		<p>Rice husk can be collected and gathered into briquettes.</p> <p>Straw from rice can be gathered in bales and stored for feeding of livestock</p>

Annex 4: Occupational Health & Safety Plan

The Occupational Health & Safety Approach will be guided by the plan presented in table below:

Table A2: Occupational Health & Safety Plan

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation	Cost (NGN)
Pre-Construction Phase				
Movement of materials to site	Community safety Incidents and accidents or injuries	<ul style="list-style-type: none"> Ensure community representatives are well informed ahead of time by the LFS (Local Field Supervisors) of days when materials will be transported to site Ensure vehicles are fitted with proper horns and reversal alarms to control proximity of community persons during conveyance of goods Use of flagmen to encourage pedestrians obeying traffic guidelines around the vehicles during conveyance of materials. Provide adequate safety signage around the construction sites to alert community/drivers/pedestrians. 	Contractor	To be included in bill of contractor
Use of tools for site clearing and land preparation	Incidents and accidents or injuries	<ul style="list-style-type: none"> Ensure the right PPE is provided on site for workers Provide adequate first aid, first aiders, PPE, signage (English and Yoruba languages). Toolbox meetings for adequate assessment of job hazards and risks before commencing work task for the day. Visual aid around the work site to remind personnel of compliance with safety requirements. 	Contractor	To be included in bill of contractor
Mobilization of Machinery, Plant & Equipment For construction work	Incidents and accidents or injuries	<ul style="list-style-type: none"> Ensure that staging areas for contractor equipment are adequately delineated and cordoned off with reflective tapes and barriers. Lighting and/or reflective tapes and signage integrated in all worksites for safety at night 	Contractor	To be included in bill of contractor
Site clearing for staging area	Occupational accidents and injuries to workers and risk to community health and safety	<ul style="list-style-type: none"> Develop and implement a project specific Occupational Health and Safety Plan (OHSP). OHSP to include but not limited to: Cordon off project site to prevent intrusions from general public 	Contractor	To be included in bill of contractor

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation	Cost (NGN)
Use of tools – saws, hammers, cutting discs, blades etc.		<ul style="list-style-type: none"> • Prohibition of drug and alcohol use by workers while on the job. • Develop and implement a traffic management plan (TMP) by: • Providing traffic flag men • Provision of adequate first aid, first aiders, PPE, signage (English and Yoruba languages). • Restriction of unauthorized access to all areas of high-risk activities • Provision of specific personnel training on worksite OHS management • Provide minimum goggles & gloves as minimum PPE for operators of equipment works • Any uncovered work pit should have appropriate signage and protection around them • Workers should get a daily induction/toolbox before going on the site and a refresher of what happened on site a day before • Adequate safety signage on construction sites should be installed to alert community/drivers/pedestrians 		
Sourcing of materials	Use of bad quality materials on site causes defective building outcomes	<ul style="list-style-type: none"> • Ensure QA/QC control is established on inspection of materials, which are to be of best quality to prevent defective outcomes on construction sites 	Engineers/Ministry of Works Environmental Safeguards Specialist	To be included in bill of contractor

Annex 5: Labour Influx Plan

This plan identifies labour requirements and sets out the procedures for addressing labour conditions and risks associated with the proposed project, which is aimed at helping Ogun NFWP to determine the resources necessary to address project labor issues.

SUB-CATEGORY	WORKER IMPACTS\RISKS	PROJECT IMPACTS\RISKS	MITIGATION MEASURES	MONITORING	MONITORING FREQUENCY	RESPONSIBILITY
Employment	Influx of many non-indigenes into project community	Competition on livelihood and job opportunity with locals	60% of unskilled labour shall be from the project community. Where possible qualified skilled workers on contract shall also be sourced within the community	Verify	Onset of Project and bi-weekly	Environmental Safeguards Officer (ESO); Social Safeguards Officer (SSO)
Housekeeping.	The general appearance of the camp deteriorates making camp life unpleasant.	The overall camp experience is compromised which in turn leaves workers demoralized and unproductive.	Ensure that campgrounds and common areas are routinely cleaned and organized with appropriate signage in place, and that grounds are maintained (e.g., grassed areas are regularly mown). Establish easily accessible, designated smoking areas which are clearly highlighted and regularly cleaned.	Verify	Monthly	ESO; SSO
Recreation.	Workers spend most of their time in the camps and could become disenchanted and bored. They may want to leave the camps and go into the local towns and villages in search of recreation.	Tensions arise from the local communities as workers impact their activities in search of recreation. An increase in alcohol consumption and prostitution could result due to the influx of workers into local communities.	Provide appropriate recreational facilities and activities. These should be discussed with the camp residents committee.	Assessment	Quarterly	ESO; SSO
Spiritual /Religion.	Workers will want access to places of worship for their chosen religion. They may leave the camps and go into the local towns and villages in search of an	Tensions arise from the local communities as workers impact their activities.	Provide appropriate places of worship where residents express a need for this in accordance with cultural sensitivities and assess transport arrangements on	Assessment	Quarterly	ESO; SSO

SUB-CATEGORY	WORKER IMPACTS\RISKS	PROJECT IMPACTS\RISKS	MITIGATION MEASURES	MONITORING	MONITORING FREQUENCY	RESPONSIBILITY
	appropriate place of worship.		<p>a case-by-case basis.</p> <p>Ensure that equipment and facilities are kept clean and well maintained.</p>			
Security.	Inconsistent and aggressive behaviour of security personnel towards workers can result in tensions and conflict in the workplace and a perception of human rights abuses.	Insufficient training and control of security personnel can lead to the inappropriate use of force, while protecting Project workers and assets, or inappropriate behaviour towards local populations, resulting in human rights claims.	<p>Ensure that camp security personnel meet at least the following requirements:</p> <ul style="list-style-type: none"> • Have not been implicated in past abuses • Are trained in appropriate conduct towards workers and community members including: <ul style="list-style-type: none"> o Exercising constraint and caution and understand how force may be used o Respecting human rights o Behaving consistently o Knowing and abiding by applicable laws o Fostering good community relations through their interaction and behaviour towards the workforce and communities 	Assessment	Quarterly	ESO; SSO
Community relations.	Communities are negatively impacted by camp activities: noise, waste, traffic, lighting and so forth. This may result in negative actions towards camp operations such as road closures and the prevention of workers or suppliers from entering the worksite.	Workers are stopped from going to work, which affects productivity.	<p>Implement control measures to avoid and minimize the impacts of camp and living conditions on communities.</p> <p>Limit foreign worker interaction with communities and provide cultural sensitivity awareness training to facilitate appropriate interaction with communities.</p>	Assessment	Quarterly	ESO; SSO

SUB-CATEGORY	WORKER IMPACTS\RISKS	PROJECT IMPACTS\RISKS	MITIGATION MEASURES	MONITORING	MONITORING FREQUENCY	RESPONSIBILITY

Annex 6: Laboratory Certificate



Ref: Seda-Afritech / NPWP01

Date: 07/03/24

CLIENT: SEDA-AFRITECH INTERNATIONAL.

SUBMISSION OF LABORATORY ANALYSIS RESULT

I hereby submit the results of THIRTY (30) soil samples and FIFTEEN (15) water samples in total, TEN soil and FIVE water samples per Local Government Area, for the following named LGAs: Ijebu Norh-east, Odeda and Yewa North of Ogun state Nigeria, submitted to the laboratory in batches between 19th February – 1st March, 2024 for analysis.

Attached are the copies of the laboratory results.

Thank you for your patronage.

Yours faithfully,

Adeyemi Lewis (Mr.)

Senior Analyst



