ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) FOR SMALLHOLDER AGRICULTURE DEVELOPMENT FOR FOOD AND NUTRITION SECURITY IN LIBERIA (SADFONS)

Prepared by:

GODWIN K. SENAGAH, M.Sc. – Licensed & Certified EPA Environmental Professional Evaluator of Liberia

Contact Information

+231886844536/+231776623483

Email: godsen87@gmail.com/godsen87@yahoo.com

NOVEMBER, 2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

AfDB	African Development Bank
AP	Affected Person's
AREP	Adaptation Review and Evaluation Procedures
CAAS	Comprehensive Assessment of Agriculture Sector of Liberia
CAC	Counties Agricultural Coordinators
CARI	Central Agricultural Research Institute
CBD	Convention on Biological Diversity
CBO	Community-Based Organization
CCD	Convention to Combat Desertification
CLO	Community Liaison Officer
CNDRA	Center for National Documents and Records Agency
CO	Country Officer
CO_2	Carbon dioxide
COVID-19	Coronavirus Disease-2019
CPIA	Country Policy and Institutional Assessment
CSA	Climate-Smart Agriculture
CSS	Climate Screening System
CSS	Climate Safeguards System
DDT	DDT (Dichloro-Diphenyl-Trichloroethane)
DHS	Demographic and Health Survey
DLSC	Department of Lands, Surveys, and Cartography
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPAL	Environmental Protection Agency of Liberia
EPML	Environmental Protection and Management Law of Liberia
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Framework
ESS	Environmental Safeguard Specialist

FAO	Food and Agricultural Organization
FAPS	Food and Agriculture Policies and Strategies
FBO	Forestry Based Organization
FDA	Forestry Development Authority
FFS	Farmers Field School
FPIC	Free, Prior, and Informed Consent
FY	Fiscal Year
GAFSP	Global Agriculture Food and Security Program
GBO	Gender Protection Officer
GBV	Gender-Based Violence
GoL	Government of Liberia
GRC	Grievance Resolution Committee
GRM	Grievance Redress Mechanism
HSE	Health, Safety, and Environment
IPM	Integrated Pest Management
ISS	Integrated Safeguards System
ITCZ	Inter-Tropical Convergence Zone
JARSCO	Jawordee Swamp Cooperative
LACRA	Liberia Agriculture Commodity Regulating Agency
LARO	Liberia Agriculture and Relief Organization
LASIP	Liberia Agricultural Sector Investment Program
LISGIS	Liberia Agriculture Commodity Regulating Agency
LLA	Liberia Land Authority
M&ES	Monitoring and Evaluation Specialist
MGCSP	Ministry of Gender, Children, and Social Protection
MoA	Ministry of Agriculture
MPW	Ministry of Public Works
NEA	National Environmental Agency
NGOs	Non-Governmental Organizations
NOx	Nitrous Oxide
NTFP	Non-Timber Forest Products
OP-CEDAW)	Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women
OS	Operational Safeguard

PGRFA	Plant Genetic Resources for Food and Agriculture
PMU	Project Management Unit
PRC	Peoples' Redemption Council
SADFONS	Smallholder Agriculture Development for Food and Nutrition Security in Liberia
SAPEC	Smallholder Agriculture Productivity, Enhancement and Commercialization Project
SEP	Stakeholder Engagement Plan
SOx	Sulfur Oxide
TA	Traditional Authorities
UN	United Nations
UNCEDAW	United Nations Convention on the Elimination of all Forms of Discrimination Against Women
UNDP	United Nations Development Programs
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar
USGS	United States Geological Services
WAPP	West Africa Power Pool
WARDA	West African Rice Development Association
WB	World Bank
WFP	World Food Program
WHO	World Health Organization

EXECUTIVE SUMMARY

ES1: INTRODUCTION

This report is the Environmental and Social Management Framework (ESMF) for the Smallholder Agriculture Development for Food and Nutrition Security in Liberia "herein refer to as SADFONS" in fulfillment of the requirement of the African Development Bank's (AfDB's) Integrated Safeguards System (ISS), which requires that all Bank-funded Projects either avoid completely negative impacts or minimize such impacts.

ES2: PROJECT BACKGROUND

The Government of Liberia has secured conditional approval of funding from the Global Agriculture Food and Security Program (GAFSP) Steering Committee and the African Development Bank to support the development of Agriculture in the country. The project development objective is to improve food and nutrition security and reduce poverty of the targeted rural population in Liberia. This will be achieved through the following:

I. Increased agricultural productivity and production of smallholder farmers (with a focus on food crops such as rice, cassava, and vegetables);
II. Improved smallholders' value addition, market access, and income; and
III. Strengthening the capacity of government institutions, farmers, and producer organizations.

The project objectives are fully aligned with and support the Liberia Agricultural Sector Investment Program (LASIP) II development priorities which consist of the following pillars:

Program I - Food and Nutrition Security;

Program II - Competitive Value Chains and Market Linkages;

Program III - Institutional Development; and

Program IV - Land and Water Resources Development.

ES3: PROJECT BENEFICIARIES

The proposed project will be implemented in six (6) counties, namely; Grand Gedeh, River Gee, Bomi, Montserrado, Grand Bassa, and Maryland. The selection criteria for the project counties were based on the high incidences of poverty and malnutrition rates but also where the GAFSP funded processing facilities have been built and that require sustained and increased supply of raw material production (rice and cassava).

Targeted assistance will be provided to farmer communities in the lowland areas of the South East (Maryland, River Gee, and Grand Gedeh Counties), the poorest and marginalized region. Considerable agriculture potential exists in this region, but it remains underutilized due to the lack of the necessary infrastructure, poor access to markets and agricultural inputs, and insufficient agricultural advisory services. The target project participants are smallholder farmers (with the plot size in the range of 0.8- 2 ha). Specific communities or groups anticipated to benefit

from the project are discussed below. The estimated total number of project beneficiaries is 41,740, which includes direct beneficiaries of farming and nutrition activities including 30,000 children of school age. Of these, 11,740 participants are among smallholder farmers with a plot size in the range of 0.8-2 ha that will be targeted. During the field mission, a number of farmer groups were already identified. During implementation, additional groups will be identified and added to reach the target of 11,740 farming households.

ES4: PURPOSE AND OBJECTIVE OF THE ESMF

According to the African Development Bank Integrated Safeguard System (ISS), it is required that an Environmental and Social Management Framework (ESMF) is prepared for the project. The objective of the ESMF is to provide a unified process to address all environmental and social safeguard issues for subprojects at the respective project sites, from preparation, through appraisal and approval, to implementation. It thereby ensures compliance with the Bank's safeguards policies. The objective of this ESMF is also to ensure that the implementation of the project is carried out in an environmentally and socially sustainable manner and to comply with all relevant national and international environmental requirements in order to meet legal obligations as well as ensuring sustainable project planning and implementation. The obligations include the following:

- Compliance with EIA requirements to meet Liberia Environmental Protection Agency Act and the Environmental Assessment Regulations; and
- Conduct of ESMF to meet AfDB Environmental Assessment Guidelines and relevant Bank Safeguard policies and procedures

ES5: METHODOLOGY AND CONSULTATION

This ESMF was prepared in accordance with standard procedures for environmental and social assessment, including the applicable African Development Bank Integrated Safeguard Policies and Liberia Environmental and Social Impact Assessment Procedural Guidelines, 2017.

For a better understanding of the potential impacts of the Project, visits to potential project sites was considered as a key requirement for developing this framework. Field Visits were made to four of the project beneficiary Counties (Grand Gedeh, Bomi, Montserrado, and Grand Bassa) as a representative sample of the development of the Environmental and Social Management Framework. The field visits were used as an opportunity to conduct public consultation with the potential beneficiary communities.

ES6: PROJECT COMPONENTS AND ACTIVITIES

The proposed project targets the promotion of smallholder agriculture commercialization and improving access to markets through facilitating linkages with Community Based Organizations in selected commodity value chains of Liberia. Efforts at the commercialization of agriculture in

Liberia have been constrained by lack of organizational capacity of the producers, inadequate access to productive assets, and modern technology and market access issues. The proposed project will consist of three components:

1. Support for enhancing smallholder agricultural productivity and market access;
2. Institutional Strengthening and Capacity building; and
3. Project management and coordination

Component I: Support to enhancing smallholder agricultural productivity and market access: The project activities will be implemented in both upland and lowland areas. Increasing the productivity of uplands areas will be dedicated to cassava, rice and vegetables production. The project will support land development and land preparation for rice cultivation in lowland areas of about 208 ha. This will include the rehabilitation of community-owned land and improve water availability for cropping in the rice-producing counties of lowland areas. The total area of land expected to be cultivated is estimated at 7000 ha. The project will support interventions for the development and strengthening of smallholder market access and value chain linkages.

Component 2: Institutional Strengthening and Capacity Building: This component will support institutional strengthening at the level of government institutions as well as strengthening the capacity of FBOs. This component will also address the strengthening of the enabling environment, policy, regulations, and administrative procedures for selected government ministries, departments, and agencies. The project will support the implementation of an extension model based on the participatory, farmer-centered knowledge transfer approach. This approach will utilize the experience of the farmer field schools (FFS) extensively tested in the last 30 years around the world and, specifically, in many African countries, with the help of FAO as Supervising Entity of Technical Assistance, given its strengths in the FFS approach.

Component 3: Project management and coordination: The component will focus on the effective coordination and management of the project. Activities will include procurement of services for the design, supervision, and construction of civil works, and purchasing of goods and services, including agro-processing and office equipment, training for multiple clients, following procurement guidelines of the African Development Bank as a Supervising Entity for this project.

ES7: RELEVANT LEGAL AND INSTITUTIONAL FRAMEWORK

This section of the ESMF report describes key national policies and international treaties (to which Liberia is a signatory), national laws, regulations that apply to the environmental, health, safety, human rights, and social aspects of the proposed project. The reviews have been made against the African Development Bank safeguards policies' requirements as well as Liberian applicable laws/policies.

Relevant Environmental Laws include:

- Environment Protection and Management Law (2003);
- Act Adopting the Environmental Protection and Management Law of Liberia;

- Land Rights law (2018); and
- Draft Law on Sanitary and Phytosanitary Regulations, 2015

International Agreements triggered by the Project:

- United Nations Convention on Biological Diversity (CBD) (ratified 2000);
- Convention to Combat Desertification (CCD) (Signed 1998);
- United Nations Framework Convention on Climate Change (UNFCCC) (ratified 2002);
- Ramsar Convention on Wetlands of International Importance (ratified 2003);
- United Nations Convention on the Rights of the Child (UNICEF 1989);
- African Convention on the Conservation of Nature and Natural Resources (ratified 1978);
- International Covenant on Economic, Social and Cultural Rights (ratified 2004);
- Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (ratified 2007);
- African Charter on Human and Peoples' Right (not ratified yet, but signed 1998);
- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (ratified 1981); and
- UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (ratified 2002)

Institutional Framework include:

- Ministry of Agriculture
- Environmental Protection Agency of Liberia (EPA)
- Traditional Management Practices
- Central Agricultural Research Institute (CARI)
- Liberia Land Authority
- Ministry of Commerce & Industrial
- Ministry of Labor
- Ministry of Gender, Children, and Social Protection (MGCSP)
- Forestry Development Authority (FDA)
- Ministry of Public Works
- Food and Agriculture Organization (FAO)
- African Development Bank (AfDB)

Categorization and Operational Safeguard triggered by the project

Attentions to these safeguard policies will ensure that environmental and social issues are evaluated in the decision making, help reduce and manage the risks associated with the Proposed Project and Provide a mechanism for consultation and disclosure of information[1]. Project has

[1] AfDB Policy on the Environment, 2004

been classified on category 2 according to the ISS (Integrated Safeguard System) of AfDB. Policies that have been triggered by the proposed project are:

OS 1: Environmental and Social Assessment: Preliminary evaluation (literature reviews, etc.) has identified potential negative environmental and social impacts. There is therefore need for an environmental assessment to ensure appropriate mitigation measures are put in place during all stages of the project

OS-3: Biodiversity, renewable resources, and ecosystem services: Project activities are implemented in areas of sensitive environmental habitats that might result in land conversion, natural habitat loss, deforestation, etc.

OS-4: Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials, and Resource Efficiency: Project implementation will result in the generation of various forms and types of waste and other gaseous and liquid pollution. Activities such as agricultural production (e.g., land preparation and use of agrochemicals); post-harvest processes (e.g. milling operations, and vegetables); road construction and rehabilitation works, etc. that will be carried out during Project implementation

OS 5: Labor Conditions, Health, and Safety: The Project hiring and management of its labor force should adhere to this framework.

Climate Safeguards System (CSS): The Proposed Project is classified as Category II, indicating that it will be affected by climate change impacts.

FAO Environmental and Social Standards

FAO Environmental and Social Standard Triggered by the project are as follows:

- ESS 1: Natural Resource Management
- ESS 2: Biodiversity, Ecosystems and Natural Habitats
- ESS 3: Plant Genetic Resources for Food and Agriculture
- ESS 5: Pest and Pesticide Management
- ESS 7: Decent Work
- ESS 8: Gender Equality
- ESS 9: Indigenous Peoples and Cultural Heritage

ES8: GENERAL ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

Chapter Four of this report gives detail description of the environmental and social baseline conditions of the proposed project areas from a general perspective.

Agriculture is an important economic sector in all of the project beneficiary counties, with typical crop production of rice, cassava, and vegetable. The road network from beneficiary communities to market centers are highly deteriorated, causing major bottlenecks to the transport of

agricultural outputs to markets or crop processing areas. Rehabilitation or construction works from the proposed sub-projects are expected to have a significant impact in the targeted areas.

Furthermore, Liberia has a number of proposed and protected areas making up 4.05% of terrestrial land cover and 0.1% of total marine cover. Of the 19 reserves, 10 are national parks, 2 nature reserves and 1 national forest park, and multiple sustainable use is reserved respectively. In addition, 5 of these are Ramsar sites; wetlands of international importance.

It is worth mentioning that findings from the study for the development of this ESMF, revealed that the proposed project areas do not fall in proximity to any proposed protected sites or wetlands of national and international significance.

Conclusively, major environmental concern in the proposed project beneficiary zones are land degradation and loss of forest covers as a result of intense farming activities.

ES9: MAJOR ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS DURING PROJECT IMPLEMENTATION

Overall, the major environmental risks of the Project will include temporary air and surface water pollution and vegetation clearing with indirect impact on dependent wildlife, land degradation causing erosion, and invasion of environmentally sensitive areas that could impact biodiversity. Potential social risks will include public and occupational health and safety risks, such risks from imported contagious diseases.

Food crop production, including rice, cassava, and vegetable farm irrigation; Activities could result in:

- Interruption or disruption of surface and groundwater flows due to construction, excavation, and land clearance, and reduced flows during operation;
- Lowering of the water table due to excessive abstraction results in salinization;
- Non-point source pollution caused by runoff of nutrients from fertilizers, and pesticides
- Accidental spills and leaks of hazardous materials during construction and maintenance leading to the soil, surface, or groundwater contamination;
- Dust and emissions from construction and maintenance activities could affect human health, vegetation, and wildlife;
- Noise and vibration from construction and maintenance equipment, traffic and activities, may disturb sensitive noise receptors (human, fauna);
- Construction of infrastructure and facilities (storage tanks, canals, etc.) cause loss, degradation, or fragmentation of protected or ecologically sensitive areas (e.g., wetlands, migration routes)
- Impacts on habitats and species from habitat alteration and degradation (e.g., from the reduction in water supply, changes in water flow and drainage, soil erosion, pollution of water, soils, or air, the introduction of invasive species)

1. **Use of agrochemicals (inorganic fertilizers and pesticides) could result in:**
    - Deterioration of both ground and surface water through leaching and runoff
    - High concentrations of nitrates and phosphates can lead to eutrophication in water bodies
    - High levels of nitrogen and phosphorus cause the depletion of oxygen in lakes and reservoirs through excessive algal and bacterial growth (eutrophication), eventually reducing aquatic life
    - Improper application of pesticides, overuse, and neglect of safety periods between application and harvest often result in high residues in harvested crops and processed food
    - Agrochemical residues persist in contaminated clothing
    - Pesticides may move off target and poison fish, cattle, beneficial insects, pollinators, and soil organisms
    - Misuse of pesticides can cause elimination or suppression of the natural enemies that keep insect pest populations under control;
    - Suppression leads to outbreaks of secondary pests previously not considered important
    - Misuse of pesticides can lead to the build-up of resistance in insect pests, pathogens, and weeds.
    - Pesticides can kill bees and other beneficial insects that are essential for the pollination of indigenous plants, honey production, etc., thus causing negative impacts on the food production, livelihoods, and incomes of poor rural communities

ES10: PUBLIC CONSULTATION DURING THE PREPARATION OF THE ESMF

Stakeholder engagement is an essential criterion and an important strategy for an integrated environmental and social analysis process, the project design, and its implementation. Views of the project interested and anticipated beneficiary persons have been fully taken into account during the Environmental and Social Management Framework (ESMF) preparation and shall continue to form a basis for further design and implementation of the subprojects throughout the project life span. The purpose of the stakeholder consultation is to identify the views of local communities, major institutions, and other stakeholders and to assess any mitigation measures which may be undertaken to minimize any adverse impacts of the proposals under consideration.

The preparation of the ESMF involved stakeholders' consultation in the project beneficiary Counties. The major stakeholders identified and consulted (from September 2 to November 11, 2020) include consisted of various government Ministries and Agencies, Counties Agricultural Coordinators (CACs), Community leaders, Community Based Organizations (CBOs), etc. It is, however, considered that the stakeholder involvement initiated by the ESMF would be built upon at the various project levels in the project beneficiary Counties.

It will be noted, however, that in developing this ESMF, extensive consultations, especially within the project beneficiary counties and areas of influence, could not be fully carried due to the

COVID-19 pandemic restriction and the deplorable road conditions in accessing some of the beneficiary communities. Thus, in the start-up meetings during the inception period of this contract, it was agreed that visits should be made to a selection of the project areas in order to generate a clearer understanding of the project for the development of the ESMF.

Nonetheless, considering the need for compliance with national laws, as well as World Health Organization (WHO) advice, measures were taken to identify project activities for which engagement is critical and cannot be postponed without having a significant impact on project timelines. Large public meetings were avoided, and instead, consultations with local and national government agencies, on one-on-one consultation, or in small-group sessions were conducted, including telephone conversations, where possible. The summary of the consultations is attached as Annex I.

ES 11: FRAMEWORK ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (F-ESMP)

10.1. Assessment procedure

ESMP is an Action Plan that indicates which of the EA report recommendations and alternatives will be adopted and implemented. It will ensure incorporation of the relevant environmental/social factors into the overall project design and will identify linkages to other safeguard policies relating to the project. An ESMP shall contain potential impacts, mitigation measures, implementing responsibility, monitoring responsibility, and estimated cost for implementation.

Environmental monitoring involves keeping track of, on a regular or ongoing basis with a view to collecting information. It provides feedback about the actual environmental and social impacts of a project. It is also used to ensure compliance with environmental and social standards and to facilitate any needed project design or operational changes. A sample plan for Environmental Monitoring for the subprojects is summarized in Table 38, Chapter 7 of this ESMF. These may differ depending on site-specific peculiarities.

10.2. Public communication and consultation plan

This section presents the approach to be taken by the Project Management Unit (PMU) in order to conduct stakeholder consultation and communication in the process of developing sub-project ESIAs/ESMPs, in line with AfDB's OS 1 and the Liberia EPA standards. It describes the process of public consultation and disclosure that must be undertaken in the design, development, and implementation of the Project.

This ESMF has been prepared in order to guide project planners, implementers, and other stakeholders to identify and mitigate the environmental and social impacts of the proposed project. This framework will apply to any project activity within the SADFONS. Successful implementation of this ESMF will depend to a large extent on the involvement and participation of local communities. Specifically, it is recommended that:

- Environmental and Social awareness and education for the key stakeholders and affected communities must be an integral part of the ESMF implementation.

- Line Ministries and Agencies associated, Community Based Organizations and the project beneficiary farmers should be adequately trained to implement the proposed project, and where required to develop and to implement appropriate Environmental and Social Management and Monitoring Plans.

The Project should also sensitize and train all relevant stakeholders on their expected roles and responsibilities to promote consistency and efficiency. Stakeholder engagement is an essential criterion and an important strategy for an integrated environmental and social analysis process, the project design, and its implementation. Views of the project interested and anticipated beneficiary persons have been fully taken into account during the Environmental and Social Management Framework (ESMF) preparation and shall continue to form a basis for further design and implementation of the subprojects throughout the project life span. The purpose of the stakeholder consultation is to identify the views of local communities, major institutions, and other stakeholders and to assess any mitigation measures which may be undertaken to minimize any adverse impacts of the proposals under consideration.

10.3. Capacity building for the implementation of ESMF

The proposed project is expected to enhance the capacity of public sector institutions, such as MOA, MOGSCP, EPA, FDA, that are aligned with the project to ensure its objective. The proposed project will also concentrate on developing the capacity of the project beneficiaries, mostly farmers and farmers' cooperative, to be involved with ESMF implementation.

The first step identified in the capacity building needs of the project is viewed as being more than training; it also involves organizational development, elaboration of relevant management structures, processes, and procedures, not only within organizations but also the management of relationships between the different organizations and sectors (public, private and community) that will be involved in the Project. Capacity building also includes human resource development and involves the process of equipping individuals with the understanding, skills, and access to information, knowledge, and training that will enable them to perform effectively. In the development of the report, it became clear that the proposed institutions that will be involved in the project will need to have their capacity enhanced; farmers will equally need to be trained in specific farming skills, mostly in the form of training and farmer-field school. Training workshops on the implementation of the ESMF/ESMPs, and AfDB safeguard policies would be organized for staff of the PMU (especially the Project Coordinator and ESS).

Farmer's cooperative and individual farmers will need to be trained with appropriate methods of application of agrochemicals since inappropriate methods of use can result in unacceptable toxic residues on agricultural products and unnecessary financial burdens because of over application.

10.4. Grievance redress mechanism (GRM)

A Grievance Redress Mechanism will be implemented to ensure that all complaints from local communities are dealt with appropriately, with corrective actions being implemented, and the complainant is informed of the outcome. It will be applied to all complaints from affected parties.

The PMU shall set-up a grievance redress committee that will address any complaints during project implementation.

10.5. ESMF implementation arrangements

Implementation of the ESMF is the main responsibility of PMU. Since the purpose of the ESMF is mainly to set the framework for future environmental and social management of sub-projects, more specific roles, and responsibilities shall be identified in the ESMPs. This section will therefore describe the implementation arrangements of the ESMF and subsequent site-specific ESMPs. It will be noted that other parties may have roles to play in ESMF implementation, although these have to be initiated by the PMU; Governmental institutions are to benefit from the Project, and their regulatory and advisory roles will be needed, recognized, and utilized when necessary.

The stakeholder roles and responsibilities in ESMF Implementation are presented below:

Project Management Unit (PMU): The daily management of the project will be vested in a dedicated Project Management Unit (PMU). The staff of the PMU will include an Environmental and Social Safeguards Specialist (ESSS) who will be responsible for the follow-up of the implementation all aspects of the ESMF/ESIA/ESMPs of the Project.

- **Project Coordinator:** the coordinator will oversee the Project's implementation. He will be responsible for initiating the ESIA/ESMP process of subprojects that require clearance from EPA.
- **Environmental and Social Safeguards Specialist (EESS) of the PMU:** He will provide progress reports on all environmental issues and activities, including implementation of the ESMF and ESMPs. Progress reports will be submitted to the FAO and AfDB. The ESSS will ensure integration of environmental and social mitigation measures in the bidding documents, ensure that the contractor prepares his ESMP, gets it approved, and integrates the relevant measures in the works breakdown structure or execution plan. The ESSS will ensure that contract documents contain environmental and social safeguard clauses that contractors must fully implement.

Contractors: The Contractors will be responsible for implementation of all environmental and social related activities under the subproject. Each Contractor is obliged to follow the ESMF and ESMP provisions during project implementation, including preparation and delivering to implementing agencies for approval of the site specific implementation plans. Construction Contractor will make proposal for environmental/social protection, including safety of persons associated with the works and the public, during a preconstruction period. The proposal will be reviewed and approved by implementing agencies (MOA) through the supervision contractor. In this regard, attention will be given to: (i) Taking all reasonable steps to protect the environment on and off-site to avoid damage or nuisance to implementing persons or property arising from its operations, (ii) Maintaining conditions of safety for all Implementing persons entitled to be on site, and (iii) Ensure separate, safe and easily accessible facilities for women and men working on the site.

Supervision Contractors: Supervision Contractor will in charge to make sure that the construction contractor has implanted efficiently the ESMP on the work site. For this purpose, it will include on in its team an environmental and social specialist to follow-up the construction contractor. It will ensure that the contractor prepares his ESMP, gets it approved, and integrates the relevant measures in the works breakdown structure or execution plan. It will produce a quarterly report base on the monthly report of the construction contractor and submit it regularly to the PMU.

Farmers or Beneficiaries: these are the direct beneficiaries of the proposed project. They will receive training and farming tools from the project proponent as well as cultivate the land for which the proposed project will be implemented.

Environmental Protection Agency (EPA): The; EPA will be responsible for overall external monitoring of the implementation of this ESMF and subsequent ESMPs. It will provide technical support and participate in training and sensitization of stakeholders (if requested) to enhance understanding of the national environmental and social safeguard instruments. The Agency has a monitoring and supervisory role and shall be responsible for confirming the results of the screening process, reviewing and clearing subproject-specific safeguard instruments, and conducting compliance monitoring within the context of the national laws and regulations, as well as the AfDBs' policies and procedures.

Food and Agriculture Organization (FAO): FAO will make supervision mission to follow up on the implementation of the ESMP as well as monitor and ensure the successful implementation of the 9++project.

African Development Bank (AfDB): AfDB will monitor and ensure the successful implementation of the project.

10.6. Estimated cost for the implementation of the ESMF

The proposed budget for implementation of the ESMF is indicated in the table below.

#	ITEM	UNIT	COST (US$)	TOTAL (US$)	SOURCE OF FUNDING
1	Preparation of subproject ESIA/ESMPs Although, ESIA in Liberia is site specific, a pragmatic assessment would be considered. One ESIA Report will be prepared for each project beneficiary communities,	6 report One report for each of the six project beneficiary Counties	20,000	120,00	Project Funds

	since there are similarities in the project environment and the nature of the sub projects for various sites in the respective counties.				
2	Capacity Building (training)	-	-	60,000	Project Funds
3	Implementation of the consultation and communication	Lump sump	20,000	20,000	Project Funds
4	Implementation of specific ESMPs	Lump sump	-	75,000	Project Funds
5	Implementation of GRM	-	-	34,000	
6	Monitoring ESMF Implementation	4 trips	5,000	20,000	Project Funds
7	Mid-term audit of Environmental and Social performance	Lump sump	12,000	12,000	Project Funds
8	Annual audit of Environmental and Social performance	6 reports One report for each of the six project beneficiary Counties	10,000	60,000	Project Funds
9	Completion audit of Environmental and Social performance	Lump sump	18,000	18,000	Project Funds
	Total			**419,000**	

CHAPTER ONE: INTRODUCTION

This report is the Environmental and Social Management Framework (ESMF) for the Smallholder Agriculture Development for Food and Nutrition Security in Liberia "herein refer to as SADFONS" in fulfillment of the requirement of the African Development Bank's (AfDB's) Integrated Safeguards System (ISS), which requires that all Bank-funded Projects either avoid entirely negative impacts or minimize such impacts.

Liberia's agricultural sector has been seriously affected by the civil conflicts, the Ebola crisis, the Coronavirus (COVID-19) pandemics, and the lack of good sustainability and monitoring programs to enhance the sector's functionality. The country is a post-conflict state with a rapidly growing population, abundant natural resources, and substantial arable land. Still, its 14 years of civil war left it with low human capital levels, degraded infrastructure, and weak institutions. According to the World Bank 2018 Country Policy and Institutional Assessment (CPIA), Liberia's CPIA score of 2.9 is below the sub-Saharan Africa average of 3.1 and the 3.2 thresholds for non-fragile states. While CPIA scores for social inclusion/equity policies have improved from 2010, scores on public sector management and institutions have since declined. After a steady Gross Domestic Product (GDP) per capita growth during the period from 2003 to 2013, Liberia's economy contracted again at an average rate of 0.8 percent per year between 2014 and 2016 because of the twin shocks of the Ebola crisis and the sharp drop in global commodity prices.

The prolonged period of conflict compounded by the effects of the Ebola crisis and the Corona Virus pandemic resulted in chronic food insecurity and severe nutritional deficits. Many Liberians continue to suffer from food insecurity and inadequate nutrition, especially in rural areas. 49 percent of the Liberian population is considered food insecure, and malnutrition of children persist, with 35 percent of children under five years of age stunt and 15 percent of them underweight[2]. Food insecurity is more prevalent in rural areas, and agricultural production remains the most important livelihood for the average Liberian, involving 67 percent of the population[3]. Liberia heavily depends on food imports, and rice, the staple grain for most of the population, is imported on a large scale. 81 percent of food for a household is sourced from markets, and food-related expenditures for an average household constitute 60 percent of the household budget. Liberia's dependence on food imports intensifies its vulnerability to external price shocks. The impacts of climate change are expected to aggravate the food insecurity situation and increase the low-income population's risk of falling deeper into poverty.

1.1 LIBERIAN GOVERNMENT SUPPORT TO AGRICULTURE

Liberia's Government commitment to the agriculture and food security agenda is reflected in its significant efforts through the Ministry of Agriculture. This includes the development agenda of enhancing the performance and economic and poverty reduction impacts of the agriculture sector through the improved policy environment and implementation of sound sector investments. However, at present, the implementation of this Government agenda is facing significant financial constraints. Table one presents the total Government of Liberia (GOL) budget, the planned and

[2] USAID 2016: Food security desk review for Liberia

[3] WFP 2013

actual expenditure of the Ministry of Agriculture (MOA), and the calculated share of the budget allocation to agriculture for the fiscal years 2014/2015 to 2018/2019.

Table 1: GOL and MOA Budget, the share of MOA over total GOL budget, USD million

Budget year	GOL Budget	Planned MOA Expenditure	Actual MOA Expenditure	MOA share of the total budget (%)
2014/2015	635.2	4.7	4.5	0.74
2015/2016	604.0	4.6	3.8	0.77
2016/2017	516.7	8.3	2.8	1.61
2017/2018	571.1	2.9	2.3	0.52
2018/2019	570.1	2.6	2.4	0.47

As presented in Table one above, the share of the GOL budget allocated to the Ministry of Agriculture (MOA) and the agriculture sector has been below 1% except for 2016/2017 when it reached 1.6 percent. Around 80 percent of the budget allocated to MOA is recurrent cost, of which the majority contains salaries. Consequently, only a small share of the budget is allocated to projects and programs. Actual sums available for annual investment in inputs amounted to just under 1.2 million USD for the past five years. An upsurge in the MOA share of the total budget of 2016/2017 was due to the increased donor funding during the Ebola crisis.

Government operations continue being constrained due to limited fiscal space. In recent years, both total revenues, including grants, have averaged around 30 percent of GDP, while expenditures have averaged about 35 percent of GDP. It is expected that total revenues and grants will increase to 32.8 percent and 30.46 percent of GDP in FY2019 and FY2020, respectively, on account of enhanced domestic revenue mobilization measures and also increased economic activities. Expenditure decreased from 36 percent of GDP in FY2016 to 33.3 percent in FY 2018 and is projected to decline to 32.3 percent in FY2020. The high share of recurrent expenditures in the government budget (about 87 percent of which wage bill is 62 percent) significantly constrains Government development expenditures and influences the low levels of Government expenditure on Agriculture[4].

1.2 BACKGROUND

Agriculture is a major sector of the country's economy, accounting for 36 percent of GDP; it employs more than a percent of the population and provides a valuable export for one of the world's least developed countries. The country has a climate favorable to farming, vast forests, and an abundance of water resources. However, with low farm yields and poor agricultural practices, over half of the national food requirements are imported, with rice constituting about 80 percent of food imports. Export crops, namely rubber, oil palm, and cocoa, are a significant source of export earnings averaging USD 195 million per year from 2011-2016.

[4] AfDB Country Strategy Paper for Liberia

The Government of Liberia has secured conditional approval of funding from the Global Agriculture Food and Security Program (GAFSP) Steering Committee and the African Development Bank to support Agriculture's development in the country. The project development objective is to improve food and nutrition security and reduce Liberia's targeted rural population's poverty. This will be achieved through the following:

- Increased agricultural productivity and production of smallholder farmers (with a focus on food crops such as rice, cassava, and vegetables);
- Improved smallholders' value addition, market access, and income; and
- Strengthening the capacity of government institutions, farmers, and producer organizations.

The project objectives are fully aligned with and support the Liberia Agricultural Sector Investment Program (LASIP II) development priorities which consist of the following pillars:

- Program I - Food and Nutrition Security;
- Program II - Competitive Value Chains and Market Linkages;
- Program III - Institutional Development; and
- Program IV - Land and Water Resources Development.

1.3 PURPOSE OF THE ESMF

The ESMF is a statement of the policy, principles, institutional arrangements, and procedures that the project management will follow in addressing environmental and social issues. ESMF, generally, is used in the case of operations with multiple sub-projects/sites whose detailed engineering designs, precise locations, and the entire site-specific environmental and social safeguard issues are not fully known. The ESMF spells out corporate environmental and social safeguard policy frameworks, institutional arrangements, and capacity available to identify and mitigate potential environmental and social safeguards issues and impacts that could be due to the project, generally. It does not attempt to address impacts related to individual undertakings (in any specific form) as the locations and extent of impacts or activities are not fully known at this preparatory stage.

According to the African Development Bank Integrated Safeguard System (ISS), it is required that an Environmental and Social Management Framework (ESMF) is prepared for the project. The objective of the ESMF is to provide a unified process to address all environmental and social safeguard issues for subprojects at the respective project sites, from preparation, through appraisal and approval, to implementation. It thereby ensures compliance with the Bank's safeguards policies. The ESMF shall describe the process for screening, assessing, identifying, assessing, and managing safeguard issues for site-specific project activities and subprojects that will be identified during project preparation and implementation. The ESMF shall cover all project components, including any capacity building, as well as all works related to the subproject investments.

1.4 OBJECTIVE AND APPLICATION OF THE ESMF

According to the AfDB's ISS, operations that finance multiple, small-scale sub-projects whose location, scope, and design are not determined at the time that the Bank appraises and approves the operation should develop an ESMF. This means that the location and site-specific environmental and social risks created by the investment will only be known during the

implementation of the Project. The features of the proposed project which make an ESMF the appropriate requirement under the AfDB's Operational Safeguard 1 (OS 1) are listed below:

- A number of sub-projects and components will be implemented over time;
- The sub-projects are spread over a wide geographic area (Southeast, Northwest, and West-central)
- Design of the sub-projects and exact locations for implementation, even though their generic impacts can be predicted, their site specificities cannot be determined at this stage

The objective of this ESMF is to ensure that the implementation of the project will be carried out in an environmentally and socially sustainable manner and to comply with all relevant national and international environmental requirements in order to meet legal obligations as well as ensuring sustainable project planning and implementation. The obligations include the following:

- Compliance with EIA requirements to meet Liberia Environmental Protection Agency Act and the Environmental Assessment Regulations; and
- Conduct of ESMF to meet AfDB Environmental Assessment Guidelines and relevant Bank Safeguard policies and procedures

The difficulties are inherent in defining what the real environmental and social impacts of the project in terms of scope, the scale of activities, and likely impacts necessitated the development of this ESMF. The ESMF will provide the project implementers with an environmental and social screening process that will enable them to identify, assess, and mitigate potential environmental and social impacts of the proposed project. The ESMF is to be applied at all stages of the project, as in the identification of sub-projects, screening to implementation, and operation stage. The framework encourages a participatory approach to the preparation of sub-projects in the respective Counties and locations. The consultation & participation framework, as part of the ESMF, provides an overview of consultation and participation activities to be carried out in various stages of the project.

Application of ESMF to the project enables the preparation of a standardized environmental and social assessment documents for appraisal and implementation. Projects triggering significant environmental/social impacts shall undergo the necessary environmental and social assessments, as stipulated by the Environmental Protection and Management Law of Liberia, and the safeguard policies of the African Development Bank and the Food and Agricultural Organization (FAO). The ESMF, therefore, is a guide for assessing the environmental, socio-economic, and health impacts of the project, as well as recommending appropriate mitigation measures and monitoring plans.

1.5 METHODOLOGY AND CONSULTATION

This ESMF was prepared in accordance with standard procedures for environmental and social assessment, including the applicable African Development Bank Integrated safeguard policies and Liberia Environmental and Social Impact Assessment Procedural Guidelines, 2017. The preparation of the ESMF commenced with a review of the Terms of Reference and formulation of a work plan for the field visits. This was followed by a literature review of the African Development Bank Safeguard Policies, Environmental and Social Regulations of the Food and

Agriculture Organization (FAO), Liberia Environmental Laws and Regulations, and Previous ESMF reports conducted in the study areas.

Some of this literature was received from the Ministry of Agriculture, field visits, and consultations were thereafter embarked on, which led to environmental and social identification screening, formulation of environmental and social Safeguard measures, and preparation of the draft ESMF Report. Field visits were undertaken from September 18 – 24, 2020, in four (4) of the six (6) beneficiary communities. Stakeholders consulted from September 2 to November 11, 2020 include relevant County Agriculture Coordinators (CACs), Local Government Authorities, Community Leaders, and Community Based Organizations (CBOs).

The main approach to the project considered the following:

- A review of relevant literature on the SADFONS project and reports of similar projects;
- An analysis of relevant national and international policies and legal frameworks that will guide the development and implementation of the Project, including AfDB's new Operational Safeguards (OSs) documents; review of reports developed within the current SAPEC Project's area of influence, etc.
- Review of ToR/Formulation of the work plan;
- Literature Review;
- Inception report;
- Stakeholder Consultations & field visits;
- Environmental and Social Identification screening;
- Formulation of Safeguard measures/Report preparation; and
- Draft Report.

1.6 FIELD VISITS TO SOME POTENTIAL PROJECT SITES

For a better understanding of the potential impacts of the Project, visits to potential project sites are a major activity that needs to be done. Field Visits were made from September 18 – 24, 2020 to four of the project beneficiary Counties (Grand Gedeh, Bomi, Montserrado, and Grand Bassa) as a representative sample of the development of the Environmental and Social Management Framework.

Issues covered during the visitation included:

- Environmental and Social Screening of the proposed sub-projects;
- Environmental and Social Impact Assessment;
- Stakeholders' Consultation with the local authorities; the project beneficiary communities, and Community Based Organizations (CBOs); and
- Risk assessments, etc.

The field visits were used as an opportunity to conduct public consultation with the potential beneficiary communities in order to:

- Understand community dynamics, relations, and the broader social and economic context of the communities and possible impacts of this Project;

- Discuss the Project with potential beneficiaries and other stakeholders, including its potential positive and negative impacts;
- Provide information about the proposed project, highlighting the various components, and acquiring key social information; and
- Facilitate transparency and inclusive participation of community members in the Project so they can voice their concerns and views about the Project's design and potential impacts and to ask questions.

Figure one gave a partial view of a potential project site visited in Work and See Community, Grand Gedeh County.

Figure 1: Partial view of a rice farm in Work & See Community, Grand Gedeh County

CHAPTER TWO: PROJECT DESCRIPTION

2.1 INTRODUCTION

The proposed project targets the promotion of smallholder agriculture commercialization and improving access to markets through facilitating linkages with Community Based Organizations in selected commodity value chains of Liberia. Efforts at the commercialization of agriculture in Liberia have been constrained by lack of organizational capacity of the producers, inadequate access to productive assets, and modern technology and market access issues.

2.2 PROGRAM DESIGN

1. The project development objective is to improve food and nutrition security and reduce poverty of targeted rural populations in Liberia. This will be achieved through (i) increased agricultural productivity and production of smallholder farmers (with a focus on food crops such as rice, cassava, and vegetables), (ii) improved smallholders' value addition, market access and income, and (iii) strengthening the capacity of the government institutions, farmers and producer organizations. The table 2 gives details about activities planned for each component.

Table 2: ***Project components***

N°	Component name	Est. cost (USD)	Component description
1	Support to enhancing smallholder agricultural productivity and market access	3.2 million	Sub-component 1.1. - Strengthening of sustainable crop production and intensification: ▪ Support the development of seed supply system for rice, cassava and vegetables through seed multiplication. ▪ Rehabilitation and stabilization of irrigation infrastructures for rice cultivation in lowland areas ▪ Establish an agricultural mechanization service centre ▪ Training of farmers.
		0.85 million	Sub-component 1.2 - Value Addition and Market Linkages ▪ Strengthening linkages between farmers and micro-hubs for primary processing of cassava and rice; ▪ Improving storage and reducing harvest and post-harvest losses (Aggregation centres) ▪ Expand and equip a Standards Lab for food quality and safety testing ▪ Expand Agribusiness Investment Fund

2	Institutional Strengthening and Capacity Building	1.7 million	Sub-component 2.1 – Strengthening participatory farmer advisory services ▪ Training of FFS Master trainers ▪ Training of lead farmers as FFS facilitators ▪ Strengthening the capacity of farmer / agricultural producer organizations ▪ Implementation of community-based nutrition promotion activities ▪ Development of Peri Urban Agriculture ▪ Expand and strengthen the community grain reserve concept to include rice and cassava food products.
		0.4 million	Sub-component 2.2 – Strengthening the capacity of MoA in investment planning and implementation ▪ Strengthening the capacity of MoA staff ▪ Conduct agribusiness and investment policy dialogues with private sector partners
3	Project management and coordination	2.1 million	Support the establishment of structures required for coordinating the implementation of project activities ▪ Strengthen PIU; ▪ Project Monitoring and Evaluation, including Knowledge Management and communication

2.2.1 Component 1: Support to enhancing smallholder agricultural productivity and market access

Sub-Component 1.1. Strengthening of sustainable crop production and intensification: The project activities will be implemented in both upland and lowland areas, increasing the productivity of cassava, rice and vegetables production. The project will support rehabilitation of irrigation schemes for rice cultivation in a total of 130 ha of lowland areas. The rehabilitation will include stabilization of existing irrigation infrastructures for rice and vegetable production for improved water availability for cropping in the rice producing counties of lowland areas, and will include earth and layout works, water control and small irrigation structures.

The project will establish a farm mechanization centre to provide equipment maintenance and repairs within the project areas. The centre will be based at CARI, and function as a concentration of skills and resources that multiple investment projects may benefit from on a cost-recovery basis, to ensure continued repair and service of machinery. It will act as an école, a Centre of

Excellence for mechanics and repair persons to learn new knowledge and skills for serving their communities. The centre draws on past experiences which have seen other centres scattered with non-functioning machinery over time. A cost recovery model will be devised for the centre at the outset, to ensure the centre continues a sustainable footing.

Project intervention for the development and strengthening of smallholder farmers' capacity will begin with the development of training modules for master trainers and farmer field school facilitators (lead farmers). The training modules are refined to supplement and build on existing farming knowledge and experiences, while benefiting from and enhanced by modern farming techniques. These modules become the cumulative knowledge of farmers, using control groups and trial & error techniques to share and shape future sustainable farming practices. Farmers will remain custodians of their own knowledge, embedded within communities, helping to perpetuate improved practices going forward.

The project will build the capacity at county level to train lead farmers, through a training of master trainers. Two master trainers/county extension officer (ideally one female and one male) are trained per county. The master trainers will train lead farmers as FFS facilitators and manage the needed extension support and backstopping support (including FFS activities), at county level. Each master trainer goes through one cropping season (4-5 months long) training. While the training of 10-12 master trainers is envisaged under this project, up to 30 trainees can be trained per training, allowing for the project to accommodate other projects to join the TOMT on a cost-sharing basis. This would leverage the capacity building of the project and contribute to further embedding the lead-farmer FFS approach across more counties, within Liberia.

The project will, in turn, support the implementation of an extension model based on the participatory, lead farmer approach. This approach utilizes the experience of the farmer field schools (FFS), for improved rice, cassava and vegetable production, and also improved access to inputs such as seeds, marketing opportunities and skills and nutritional status. The limited number of public field extension officers in the counties are not enough to reach out to all the farming households with the needed extension support, so the lead farmer approach helps to fill in voids. A total of 160 FFS facilitators working in pairs and trained by the project, will implement one FFS per year, for four years.

A total of 320 FFS will be implemented over four years (approximately 80 per year). Each school will comprise of 25 farmers, while accounting for absenteeism and dropout rates. In total 8,000 farmers, across six counties, are expected to complete the FFS. Having identified participants through already identified groups, other groups will be added during project implementation. Preferably, these communities are located in farming communities with at least 100 farming households, so that lead farmers can facilitate schools for four years running, each time with a new group, to make optimal use of the trained lead farmers. This may also increase the chance of positive spillover effects into the wider farming community, who follow similar farming practices.

The Central Agricultural Research Institute (CARI) will support the development of the seed supply system to increase farmers' access to certified seeds, by training selected farmers seed multiplication techniques at their centre and by providing the needed support to set-up local seed /planting material multiplication farms in their communities. CARI will work with various seed grower groups and encourage and support the participation of private seed producer businesses and agro-input dealers to enable them fully to undertake the production and distribution of the certified seeds in Liberia.

Sub-Component 1.2. Value Addition and Market Linkages: The project will support interventions for the development and strengthening of smallholder market access and value chain linkages. The project will strengthen the linkages between smallholder farmers and six micro-hubs for primary processing of cassava and rice, with the help of four aggregation centres located near micro-hubs. The micro-hubs currently lack the management and operational capacities needed to consistently supply value addition services to smallholder farmers and to fully utilize the already installed processing machinery. The project will provide the additional financial support for a specified period during the lifetime of the project, on a declining basis, while concurrently building management and operational capacities to turnover independently. A detailed assessment of the micro-hubs will be carried out at the onset of the project, to identify the capacity gaps, training and resource needs.

The project will expand and equip the standard lab for food quality and safety testing. This will improve the quality of food products for Liberians and the possibilities going forward – for import and export of quality produce. After the completion of investment, the lab will be able to complete more standard tests for food safety. The lab is hosted by the National Standards Laboratory with ease of access all year round.

.

2.2.2 Component 2: Institutional Strengthening and Capacity Building

Sub-Component 2.1: Strengthening participatory farmer advisory services: This sub-component will support institutional strengthening of extension service delivery, by continuing to engage the trained lead farmers as change agents for knowledge sharing, while encouraging ownership of the process by the FBOs for sustainability, with support by the MoA. As a complement to the FFS, group strengthening training courses will be implemented to improve group cohesion and internal functions. Informal groups that begin to formalize their operations into a FMO, to organize in particular formal (purchasing and sales) functions for the group members, may qualify for equipment support, along with existing FMOs. Inter-regional exchange visits will remain a vehicle for cross-learning among groups.

The project will support communities improve their awareness, production and consumption of diverse nutritious foods, especially among nutritionally vulnerable groups[5]. Enhanced access to input provision, such as seed provision to smallholder farmers, with the support of FFS lead farmers trained in nutrition enhancing activities, will facilitate production of vegetable food by smallholder farming families. In peri-urban areas, the provision of 5,000 kitchen garden demos and kits to peri-urban households will help to enhance consumption of nutritious foods, especially among nutritionally vulnerable groups, through nutrition education and by diversifying local food production. The close proximity of peri-urban households to food markets is considered an advantage that may allow some households to sell their produce at markets for enhanced income generation as a result of enhanced production. Sensitization sessions with recipients of kitchen garden kits will aim to communicate the importance of consumption of healthy diets, to reinforce the message and benefits of the vegetables, so that consumption benefits remain with the family and not only result in increased incomes.

In addition to the enhanced production and consumption of households in receipt of improved inputs and production knowledge, the project aims to cast a message among a wider net of women and children on basic nutrition, hygiene and health, and on the importance of consumption of healthy diets. To increase the scale of outreach in relaying positive behaviour change messages, the project will develop (strategy), deploy (harmonization of messages) and monitor a social behaviour communication change campaign, provide nutrition training sessions for 30,000 school children enrolled in the national School Feeding Programme and facilitate sessions on nutrition enhancing activities at the UN Women trainings that will impact 5,000 women beneficiaries.

Sub-Component 2.2: Strengthening the capacity of MoA in investment planning and implementation: The project will support the capacity strengthening of the MoA in the planning of sustainable agricultural investments, including trainings on the concepts of Climate Smart Agriculture (CSA) and Sustainable Water and Land Management, and economic and financial analysis of agricultural investments. The project will support the MoA to build its capacity to crowd in private investment to the agricultural sector by conducting agribusiness and investment policy dialogues with private sector partners, investment and commercial banks; and meetings with trade and financial specialists to share knowledge and interact on economic trends and events.

2.2.3 Component 3: Project management and coordination:

The component will focus on the planning, coordination and management and delivery of project activities within scope and of high quality in a cost effective and efficient manner. Activities will include the procurement of services for design, supervision and construction works, purchasing

[5] Nutritionally vulnerable groups in the case of Liberia include: children under the age of five, children and adolescents between the age of five and 19 and women of reproductive age.

of good and services, including mechanized agricultural and office equipment, and training, consultancy and non-consultancy services (workshops). Key project cycle management task includes recruitment or appointment of project staff, provision of office space, and preparation of office manuals, annual work plans and budgets (AWPB), quarterly progress reports, the mid-term review, thematic studies, procurement plans and audit reports. Others include on-the-job training, adoption of the monitoring and evaluation (M&E) system, provision of operational resources for project related transportation and communication infrastructure, organization of stakeholder workshops, and coordination of baseline and impact assessment studies. Upon approval of the project by the Bank, a project implementation mission will be fielded. The mission will assist GoL with the project start-up activities, including staffing, preparation of budding documents and operation manuals, preparation of the project launching workshop, etc. To this effect, a minimum budget resource will be provided for the mission's activities.

2.3 PROJECT LOCATIONS AND BENEFICIARIES

The proposed project will be implemented in six (6) counties, namely; Grand Gedeh, River Gee, Bomi, Montserrado, Grand Bassa, and Maryland (Table 2). The selection criteria for the project counties were based on the high incidences of poverty and malnutrition rates but also where the Global Agricultural Food and Security Program (GAFSP) funded processing facilities have been built and that require sustained and increased supply of raw material production (rice and cassava). The value chains prioritized under the project are rice, cassava, and vegetables that have importance for food and nutrition security in the country. The selection of the counties for support to vegetable production is also based on proximity to the market. These six counties were identified and selected to be project locations following extensive consultations with the Government and stakeholders.

Table 3: Proposed Project Implementation Areas

Counties	Absolute poverty rate* (%)	Stunting prevalence** (%)	Crop of high production potential		
			Rice	Cassava	Vegetables
Bomi	64.3	>30		X	
Grand Gedeh	63.7	>30	X		X
Grand Bassa	61.8	>30		X	
Maryland	84	>30	X		
Montserrado	20.3	no data		X	X
River Gee	81.9	>40	X		

**World Bank Systematic Diagnostic for Liberia: 2018; **Liberia: Nutrition profile. USAID: 2018*

Targeted assistance will be provided to farmer communities in the lowland areas of the South East (Maryland, River Gee, and Grand Gedeh Counties), the poorest and marginalized region. Considerable agriculture potential exists in this region, but it remains underutilized due to the

lack of the necessary infrastructure, poor access to markets and agricultural inputs, and insufficient agricultural advisory services. The target project participants are smallholder farmers (with the plot size in the range of 0.8- 2 ha). Specific communities or groups anticipated to benefit from the project are discussed in Table 4.

Table 4: Project Communities by County and Land Area

No.	County/Communities	Crop	Land (ha)
I	**Grand Gedeh**	**Rice and Vegetables**	**Low – 250** **Up – 7**
1	Jawodee	Rice and Vegetables	Low – 75; Up – 7
2	Work and See	Rice	Low – 75
3	Zleh Town	Rice	Low – 100
II	**River Gee**	**Rice and Cassava**	**Low – 100; Up – 35**
1	Putuken (Grain House)	Cassava, Vegetables	Up – 35
	Jarkaken	Rice	Low – 25
	Flowroken	Rice	Low – 75
III	**Maryland**	**Rice and Vegetables**	**Low – 75;** **Up – 5**
	Pleebo A and B	Rice	Low – 25
	Philadelphia	Rice and Vegetables	Low – 50; Up-5
IV	**Grand Bassa**	**Cassava and Vegetables**	**Up – 190;** **L – 55**
	Fetuah	Cassava and Vegetables	Up – 105; L- 35;
	Juah Town	Cassava	Up – 92
	Jeremiah Gardee	Cassava & Vegetables	Up – 88
	Dewain	Cassava	Up –95 L–20
V	**Montserrado**	**Cassava and Vegetables**	**Up – 105**
	Bensonville/Dee Town (Destiny Women)	Cassava	Up – 50

	Hope City (Mission of Hope – Disabled Group – Todee	Cassava & Vegetables	Up – 42
	Nyen Town – Group of 77/Disabled – Todee	Cassava & Vegetables	Up – 37
	Gaynah Town (Students group)	Vegetables	Up – 12
VI	**Bomi**	Cassava & Vegetables	**Up: 110 ha**
	Gagama Town	Cassava & Vegetables	Up – 37
	Banana Farm	Cassava & Vegetables	Up – 32
	Moore Town	Cassava & Vegetables	Up – 21
	Kamanda Town	Cassava & Vegetables	Up – 20
	TOTAL	**Upland: 452 ha; Lowland: 480**	**The total land area provided is based on stakeholders met during field assessment and NOT necessarily the only land**

The project is expected to reach about 10,000 direct beneficiaries, out of which 40 percent are expected to be women and 20 percent to be youth. Infrastructure development, extensive facilitation, training, and technical assistance will be provided to the smallholders to ensure that they benefit from the project interventions. Improved access of smallholder farmers to markets and value chains will expand the sector's capacity to generate more jobs for the local youths. A wider group of rural and urban poor would benefit from increased availability and better quality of agricultural food products on local markets and decreased food prices. The project criteria for the selection of its participants are self-targeting, based on the specified plot size and productive assets. Community-level consultations will be used to ensure a transparent beneficiary selection, and the project beneficiary lists will be made publicly available. To enhance the efficiency of the input distribution, the proposed project will build upon the results achieved under the SAPEC project in using the e-wallet system in which 321,766 farmers were registered across the country.

The project beneficiary Counties are Grand Gedeh, River Gee, Bomi, Montserrado, Grand Bassa, and Maryland. Geographically, the six Counties fall within three geopolitical zones of the Country (Southeast, Northwest, and West-central).

2.4. INSTITUTIONAL ARRANGEMENTS FOR THE PROJECT

The implementation arrangements for the project will follow the implementation model for the on-going AfDB, International Fund for Agricultural Development, and World Bank projects in the agriculture sector. The MOA-PMU has been established as a cost-effective way to implement all investment projects in the sector and it gained a considerable experience in investment project implementation over the years of its functioning. The project will further strengthen the capacity

of the Project Management Unit (PMU) through the competitive recruitment of staff, adoption of the monitoring and evaluation (M&E) system, provision of communication infrastructure, audit and strengthening of the financial management and accounting systems. The national staff will receive in-service training, including skills transfer from international experts. Furthermore, and in keeping with standard procedures, the PMU will ensure the active participation of the appropriate national and field staff of the Ministry of Public Works in the execution of civil works. The inter-ministerial Steering Committee that is currently utilized by the SAPEC project (Smallholder Agricultural Productivity Enhancement &Commercialization Project**)** will oversee the project implementation.

2.5 ANALYSIS OF PROJECT ALTERNATIVES

2.5.1 Introduction

Analysis of alternatives is done to establish the preferred or most environmentally sound, financially feasible, and benign option for achieving project objectives. This requires a systematic comparison of proposed investment design in terms of size, technology, processes, etc. in terms of their impacts and feasibility of their mitigation, capital, recurrent costs, suitability under local conditions, and institutional, training, and monitoring requirements.

This section will also identify and compare alternative options that could be considered for integration in the Project's design to make the proposed project more environmentally and socially resilient and sustainable. As stated above, it will compare alternative technologies or processes in terms of their potential environmental, resilience and social impacts, capital and recurrent costs, and suitability under local conditions. This will include such as the need for using existing land for rice, cassava, and vegetable irrigation and a possible extension of the project site that was previously used for the Smallholders Agricultural Productivity, Enhancement and Commercialization Project (SAPEC) project as well as in other areas where there will be a need for additional farmland for the implementation of the project; redesigning irrigation infrastructure; use of agrochemicals (e.g., chemical fertilizers and pesticides against organic fertilizers and use of Integrated Pest Management (IPM)[6] approach to address pest infestation).

2.5.2 No Action Alternative

[6] Integrated Pest Management (IPM) uses an understanding of the life cycle of pests and their interactions with the environment, in combination with available pest control methods, to keep pests at a level that is within an acceptable threshold in terms of economic impact, while giving rise to minimum adverse environmental and human health effects. Recommended IPM approaches include: use of biological controls such as predators, parasites and pathogens to control pests; use of pest-resistant varieties; mechanical and biological controls; and, as a last resort, chemical controls including synthetic and botanical pesticides. Other IPM approaches encompass pesticide application techniques that aim to increase the efficiency of chemical applications.

The "No Action" alternative assumes that there will be no improvement in farmers' skills and capacity development, in rural access and agricultural marketing, in selected participating Counties whilst enhancing sustainability of the rural agricultural production. Negative environmental and social effects of this option will include further deterioration of rural access roads, impeded access to farmers, post-harvest losses, and economic losses to the local economy. A no-action alternative is certainly not recommended.

2.5.3 The Delayed Project Alternative

This option implies that the proposed project will be delayed until a much later date. Such an option is usually taken when conditions are unfavorable for project implementation. For instance, in a situation where there is war, or the proposed project areas are deeply resentful of the project. Also, if the economics of the project are unacceptable or unattractive at the time, then a delay may be feasible. But none of these conditions are applicable. In fact, on the contrary, both the economics and the political environment are favorably disposed towards the project. The delayed project alternative is, therefore, rejected.

2.5.4 Use of Existing Rice Fields, Cassava and Vegetable Farms

Within the targeted regions, numerous areas are potentially available that have either been cultivated, lying fallow for many years, or are untouched. Current farmlands are hindered by excessive flooding, especially during the wet season, poor irrigation systems, and inadequate water supply to farmland during the dry season; due to these, and many other reasons, the Project could be tempted to open up new lands to accommodate the required number of hectares for the project implementation, and this could result to extensive felling and vegetation clearing and burning. Opening up new lands will disturb the regrowth and regeneration of the forests and vegetation, and the important environmental functions of the forests and vegetation will be disrupted. These functions include soil erosion control, regulation of water quality, and flow in the watersheds, thereby moderating floods from heavy rain. Forests also have the unique potential to contribute to climate change mitigation by reducing emissions and enhancing carbon sinks. In addition, depending on the extent of deforestation, reduced tree cover could result in reduced cloud cover and rainfall. In addition, local ecological populations may be adversely affected by pollution incidents from fuel leaks and oil spills associated with construction, maintenance, and decommissioning operations. Construction and activities could also result in the increased sediment loading of the nearby water bodies, and changes in turbidity may impact adversely upon aquatic populations. Similarly, clearance of terrestrial vegetation for cassava and vegetable farms will expose dependent wildlife, causing them to move to other areas for food and shelter, with the probability of creating competition and a potential nuisance if they move to other agricultural fields. Given the above, the Project must not encourage farmers to open up new lands and sites.

2.5.5 Agro-chemicals Usage

Improving agricultural productivity is vital for poor rural smallholder farmers in the country to meet their food security needs and to promote sustained increases in income; agrochemicals can be powerful productivity-enhancing input. For example, promoting inorganic fertilizer use is, therefore, crucial to sustainably increase the productivity of the targeted cops in the Project.

Pests (including insects, weeds, and pathogens) can be a significant constraint for the Project to achieve its production targets, and pesticides could potentially be required for their control. Whilst agro-chemicals will intensify production in rice and vegetables in their respective zones, environmental problems may result from their increasing use and concentration, e.g., accelerated nutrient loading of receiving waters, resulting in algal blooms, the proliferation of aquatic weeds, and de-oxygenation.

Therefore, careful selection of the type of inorganic fertilizers and management of their use (timing, dosage, mode of application, etc.) can reduce to acceptable levels the environmental risks they pose while providing the needed benefits for increased production with lower financial and health risk costs. If pesticides must be used in the Project, it should be ensured that its application, storage, and disposal, are in line with international standards. Annex 6a shows the list of banned pesticides in the country. To enhance the reduction in its use, the Project needs to enhance environmental awareness, and farmer training and field extension services in Integrated Pest Management (IPM) approaches. Usually, smallholder farmers do not have much difficulty in reducing the dependence on pesticides; the promotion of local farming practices, such as the cultivation of locally adapted crops and varieties, which are often resistant to local pests and diseases; the use of locally available natural bio-pesticides and pest-repellent crops, with adapted cultivation strategies (seeding periods and methods, etc.); the use of natural on-farm animal and green manure can significantly reduce the use or eliminate the necessity of pesticides completely.

2.5.6 The 'Project may proceed as proposed' Alternative

In order to address the agricultural deficiency of the country and enhance economic growth, the African Development Bank has funded the proposed Project through the Food and Agricultural Organization. This would serve as a catalyst for economic integration and thus bring the much needed economic growth and development of the country at large. With the other project alternatives disposed-off, the project, therefore, can proceed as proposed.

CHAPTER THREE: RELEVANT LEGAL AND INSTITUTIONAL FRAMEWORK

3.0 INTRODUCTION

The Government of Liberia has executed agriculture sector policies, enacted acts and regulations, developed guidelines and manuals, and has signed international treaties and conventions, some of which have provisions for agricultural development and safeguards issues. The prevailing Acts, policies, regulations, conventions, and guidelines related to agricultural development and safeguards of the project beneficiaries' communities have been reviewed to streamline the safeguard requirements for this project.

This section of the ESMF describes key national policies and international treaties (to which Liberia is a signatory), national laws, regulations that apply to the environmental, health, safety, human rights, and social aspects of the proposed project. National policies present the general principles that guide the Government of Liberia in achieving its various strategic goals. The specific objectives of the regulatory framework review are:

- To identify policies, laws, and regulations relevant to the environmental, health, safety, human rights, and social aspects of the Project and to the conduct of the ESIA;
- To identify environmental standards prescribed under national legislation that are relevant to the Project (such as waste management, wastewater discharge, and air emissions); and
- To identify international conventions to which Liberia is a signatory that is relevant to the Project;
- To present the Bank's safeguards policy requirements.

The reviews have been done against the African Development Bank safeguards policies' requirements as well as Liberian applicable laws/policies as summarized below.

3.1 LIBERIA ENVIRONMENTAL POLICY REQUIREMENTS

This section describes the applicable national policies that set the context within which the project will operate.

3.1.1 National Environment Policy of Liberia (2002)

The policy goal is to ensure the long-term economic prosperity of Liberia through sustainable social and economic development, which enhances environmental quality and resource productivity on a long-term basis that meets the requirements of the present generation without endangering the potential of future generations to meet their own needs.

3.1.2 Land Administration Policy, 2015

The Land Administration policy presents a framework for land administration in Liberia. It focuses on the main features of good land administration and those pertaining to the identification, ownership, use, and valuation of land, including information on all lands, as well as the identification of land and the determination of rights to the land, recording of those rights, valuation of land and the management of government and public land, coordination of land use planning, the establishment of the institutional framework at central and local government levels to carry out this mandate.

3.1.3 National Rice Development Strategy of Liberia (Republic of Liberia 2012a)

Aims to improve food security and achieve self-sufficiency through the doubling of domestic rice production by 2018. Rice is a staple cereal crop in Liberia with great social and political significance. Demand far exceeds local production, however, which requires high imports and affects the country's trade balance and foreign exchange.

3.1.4 National Environmental and Occupational Health Policy, 2010

In relation to the proposed project, the main objectives of the National Environmental and Occupational Health Policy are to assess the working conditions in major workplaces, establish a database, plan and implement workers' wellness programs for the purpose of protecting and promoting health in the workplace for all workers in Liberia, providing guidelines and standards for the effective implementation and rendering of occupational health services.

3.1.5 Food and agriculture policies and strategies (FAPS)[7]

The FAPS aims at a revitalized and modernized food and agriculture sector that is contributing to shared, inclusive and sustainable economic growth and development of Liberia by:

- Making safe and nutritious foods available in sufficient quantity and quality at all times to satisfy the nutritional needs of all Liberians;
- Ensuring inclusive and pro-poor growth in agricultural production, productivity, competitiveness, value addition and diversification, and linkages to markets; and
- Building effective and efficient human and institutional capacities of stakeholders to plan, deliver services, invest, and monitor activities, while concurrently sustaining natural resources.

The food and agriculture sector of Liberia is characterized by low or negligible productivity, particularly in smallholder-dominated food production. The sector policies and strategies are outlined below

Policy 1: Improved Food Security and Nutrition Safe and nutritious foods are available in sufficient quantity and quality at all times to satisfy the nutrition needs for all Liberians.

- Strategy 1: Improving food availability and adequacy through self-reliance
- Strategy 2: Enhancing food accessibility to the population.
- Strategy 3: Promoting food utilization and improved nutrition
- Strategy 4: Contributing to resettlement and reintegration programs
- Strategy 5: Supporting rural self-employment and self-reliant wage work to spur local economic development.

Policy 2: Increased competitiveness and linkages to markets Accelerated pro poor growth in agricultural production, productivity, competitiveness, value addition, and diversification

- Strategy 1: Enhancing the efficiency, competitiveness and sustainability of the food and agricultural supply chains, particularly those of small holders, and linkages of these chains to markets
- Strategy 2: Creating more and better opportunities for much greater involvement of private actors in the food and agriculture sector
- Strategy 3: Increasing public investment and creating an enabling environment for agriculture and agribusiness development.

Policy 3: Strengthened Human and Institutional Capacities Strong and efficient human and institutional capacities of the public sector, civil society organizations and the private sector

[7] Food and Agriculture Policy and Strategy "From Subsistence to Sufficiency"

carrying out effective planning, delivery of services, coordination and monitoring activities in the sector, as well as sustaining natural resources, mitigating risks to producers, and mainstreaming gender in planning and the implementation of activities in the sector.

- Strategy 1: Instituting improved governance; and promoting civil society organizations, and decentralized and demand-driven service delivery
- Strategy 2: Establishing functional, efficient and effective public sector support framework for coordination, planning, service delivery, monitoring and evaluation
- Strategy 3: Reducing risks and improving coping mechanisms.
- Strategy 4: Mainstreaming gender and youth in agriculture and rural development
- Strategy 5: Ensuring sustainable use and management of natural resources

3.1.6 National Social Security and Welfare Corporation (NASSCORP) Act, 2016

The mission of the National Social Security and Welfare Corporation (NASSCORP) is to provide for the future financial security of insured employees (and their dependents) in event of loss or natural ability to earn income temporarily or permanently, due to work-related injury, occupational disease, old age, invalidity, or death. Eligible employees include civil and public servants as well as workers in the private sector across Liberia.

The Act creating NASSCORP empowers the organization to carry out several important functions to ensure that those who are covered will have means of financial-support when he/she is no longer in position to rely on his/her own abilities as a source of livelihood. In short, NASSCORP is mandated to administer the Employee Injury Scheme, the National Pension Scheme and Welfare Scheme by doing the following:

- Register employees and employers;
- Collect contributions from employers and employees;
- Establish and maintain proper and adequate records on contributions and insured earning
- Encourage and enforce compliance;
- Properly manage the funds in each scheme;
- Receive claims and pay legitimate social security benefits;
- Invest a portion or corporate surplus funds into safe assets or competitive yield and; and
- Provide information and education on the schemes to stakeholders and to the general public.

3.1.7 The National Youth Policy and Action Plan 2019-2023[8]

The overall goal of the National Youth Policy is to promote youth participation in the national decision making process. It is also to provide an appropriate framework that will promote fundamental human rights and protect the health, social, economic and political well-being of all

[8] National Youth Policy and Action Plan 2019-2023

young men and women in order to enhance their participation in the overall development process and improve their quality of life.

The key policy objectives are to:

- Establish a general policy framework which will provide guidelines on all matters relating to youth development;
- Promote collaboration between different tiers of government and civil society organizations, non-governmental organizations, community based organizations, religious organizations on youth development programs;
- Ensure youth involvement in decision-making, leadership, community based and other development programs especially in matters affecting them; and
- Promote the harmonization of other policies, programs, strategies and youth related research

3.2 APPLICABLE NATIONAL REGULATIONS AND STANDARDS

Table 5 describes the main categories of legislation in Liberia, and Table 6 provides a summary of relevant Liberian environmental legislation the Government of Liberia.

Table 5: Categories of Legislations in Liberia

Law	Laws are passed by the National Legislature of Liberia comprising of the Senate and the House of Representatives. Any citizen or group of citizens, Cabinet Ministers, Managing Directors of public corporations or agencies can propose a bill to the National Legislature for enactment. The draft bill is first passed over to the appropriate Steering Committee of the Legislature. In the case of an environmental bill, this committee is generally the Committee on Natural Resources and the Environment. The Committee reviews, assesses, and presents the bill to the Legislative Plenary with appropriate amendments for debate, public hearing, and subsequent enactment by the Legislature.
Executive Order	The Executive Branch of government headed by the President can issue Executive Order without the approval of the National Legislature. The Executive orders have the power of law provided that they do not contravene the existing law. The power of such orders has a limited time of existence.
Regulations	The national Legislature has empowered Cabinet Ministers and Managing Directors of public corporations and agencies to issue regulations for their respective functionaries without legislative approval or supervision, provided that such regulations are consistent with the statutory laws and the constitution of Liberia.

Table 6: Relevant Laws Relating to the proposed Project

Title	Year	Description	Related regulations of each Law
Constitution of the Republic of Liberia.	1986-January-06 **ISN:** LBR-1986-C-3557	The Constitution contains the following Chapters: I. Structure of the State; II. General Principles of National Policy; III. Fundamental Rights; IV. Citizenship; V. The Legislature; VI. The Executive; VII. The Judiciary; VIII. Political Parties and Elections; IX. Emergency Powers; X. Autonomous Public Commissions; XI. Miscellaneous; XII. Amendments; XIII. Transitional Provisions; and two Schedules. It abrogates the Constitution of 1847, which was suspended in 1980. In particular, Art. 8 of the new Constitution provides, "The Republic shall direct its policy towards ensuring for all citizens, without discrimination, opportunities for employment and livelihood under just and humane conditions, and towards promoting safety, health and welfare facilities in employment." Included in the Chapter on Fundamental Rights are a prohibition on slavery or forced labor, as defined therein (Art. 12), a guarantee of equal protection of the law (Art. 11), the right to assemble and to associate in trade unions and other organizations (Art. 17) and a provision that, "All Liberian citizens shall have equal opportunity for work and employment regardless of sex, creed, religion, ethnic background, place of origin or political affiliation, and all shall be entitled to equal pay for equal work". (Art. 18).	**Repealed text(s) 1972-05-08** (LBR-1972-C-42815) Constitution of the Republic of Liberia (as amended through 8 May 1972). **Implementing text(s) 1972-05-11** (LBR-1972-L-108444) The Executive Law, Liberian Code of Laws Title 12.
Conservation of the Forests of the Republic of Liberia	1953	This Law provided the framework for the use of forest and wildlife resources and allowed for the creation of government reserves, native authority reserves, commercial forests, national parks, and wildlife refuges.	Regulation on Forest and Wildlife Conservation (FDA Regulation No. 13). This Regulation of the Forestry Development Authority implements certain measures to protect forest resources in Liberia so as to prevent and limit desertification. The Regulation imposes a Forest Conservation Fee for class "A" species and

			class "B" species which shall be levied on all logs produced for commercial use within the Republic of Liberia. The regulation also imposes a Wildlife Conservation Fee to be levied on all CITIES Export Permits. The fee shall be made by the Exporter to the Forestry Development Authority.
Supplementary Act for the Conservation of Forests	28 February 1957	This Supplementary Law also provided the framework for the use of forest and wildlife resources and allowed for the creation of government reserves, native authority reserves, commercial forests, national parks, and wildlife refuges.	Regulation on Forest and Wildlife Conservation (FDA Regulation No. 13).
The Act that created the Forestry Development Authority (FDA)	1976	The Act established and defined the responsibilities of the FDA, outlined forest offenses and penalties, made provision for an Advisory Conservation Committee, and specified powers of forest officers with regard to trees in reserve areas.	Forestry Development Authority Regulations Nos. 1 to 27
Public Health Law (Title 33).	1976-July-16 ISN LBR-1976-L-42813	It contains a provision for the protection of drinking water resources and the inspection of potential sources of pollution.	**Amending text(s)** **2010-03-11** (LBR-2010-L-96959) Public Health Law (Amendment) Act, 2010.
Wildlife and National Parks Act	1988	The Act identifies a number of protected areas; specifies policies and objectives regarding wildlife and conservation in the country.	An Act adopting a new Wildlife and National Parks and repealing Chapters 1, 2, 3 and subchapters A and C of Chapter 4 Title 24 of the Natural Resources Law, volume 5 of the Liberian Code of Laws 1956, relating to the conservation of forests, forest reserves, conservation of wildlife and fish resources and national parks. (Wildlife

			and National Parks Act, 1988).
The Environment Protection Agency (EPA) Act	2002-11-November ISN: LBR-2002-L-92349	The Act provides the Agency with the authority of a government for the protection and management of the environment in Liberia. It provides for an Environmental Administrative Court to hear from aggrieved parties. It requires that an Environmental Impact Assessment (EIA) be carried out for all activities and projects likely to have an adverse impact on the environment.	N/A
The Environment Protection and Management Law	2002-November-26 ISN: LBR-LBR-2002-L-92350	The Act enables the Environment Protection Agency to protect the environment through the implementation of the Law. It arranges the rules, regulations, and procedures for the conduct of EIA. It establishes regulations for environmental quality standards, pollution control, and licensing, among others.	N/A
The National Environmental Policy Act	2002	It defines policies, goals, objectives, and principles of sustainable development and improvement of the physical environment, quality of life of the people and ensures coordination between economic development and growth with sustainable management of natural resources.	N/A
National New Forestry Reform Law	2006-September-19	The administration of this Act provides for the Forestry Development Authority to exercise power under the Law to assure sustainable management of the Republic's forestland, conservation of the forest resources, protection of the environment, sustainable economic development with the participation of and for the benefit of all Liberians and to contribute to poverty alleviation in the country.	Executive Order No. 1: GOL Forest Sector Reform. This Executive Order adopts the recommendations and report of the Forest Concession Review Committee, promoting transparency, benefit sharing and public participation in forest and natural resource management in Liberia.

3.2.1 Environment Protection and Management Law (2003)

The law forms the legal framework for the sustainable development, management and protection of the environment and natural resources by the Environmental Protection Agency in partnership with relevant ministries, autonomous agencies and organizations as well as in a close and

responsive relationship with the people of Liberia. It addresses a wide range of environmental issues including environmental impact assessment amongst others in development projects.

3.2.1.1 ACT ADOPTING THE ENVIRONMENTAL PROTECTION AND MANAGEMENT LAW OF LIBERIA

This Act adopts the Environmental Protection and Management Law, 2003 (EPML) which enables the EPA to protect the environment through the implementation of the Law. It arranges the rules, regulations, and procedures for the conduct of EIAs and establishes regulations for environmental quality standards, pollution control and licensing. Section 6 of EPML requires an application for an environmental impact assessment license for the commencement of the projects and activities specified in Annex I of the Act and sets out the process to be followed for Project Briefs, Scoping process and Environmental Impact Statements.

In terms of Annex I of the Environmental Protection and Management Law of the Republic of Liberia (2003) this project will primarily fall under Category 11 (Agriculture Projects). The proposed project and its related sub-projects will trigger four activities including:

- Cultivating natural and Semi – natural areas not less than 50ha:
- Large scale mono-culture (cash and food crops);
- Pest control; and
- Fertilizers and nutrient management;

The EPML requires that the EPA should ensure that projects comply with their environmental management plans through monitoring and allows the EPA to carry out periodic audits. Section 58 of the EPML requires that a license must be obtained from the EPA for any type of effluent discharge into the sewage system, also in case of operation of a sewage system. The Act also deals with aspects such as general duty of care, water resources protection, waste management and air emissions.

The main steps in the process are:

- Prepare an Application for the Environmental Impact License
- Prepare Notice of Intent (NOI)
- Submit Project Brief (allow 14 working days for EPA review and feedback)
- Conduct a scoping process
- Publish NOI in Media
- Prepare Terms of Reference (TOR)
- Conduct Meetings with EPA Environmental Committee and District Environmental Committees, as required Conduct stakeholder engagement including public meetings with potentially affected communities; and
- Submit Scoping Report to EPA
- Prepare Environmental Review

- Obtain EPA Approval of TOR and Environmental Review
- Prepare Environmental Impact Study and Report (included in ESIA)
- Prepare Environmental Impact Statement (EIS) (included in ESIA)
- Develop Comprehensive Environmental Mitigation Plan and Implementation Strategy (included in ESIA) Agency Review of ESIA (within 3 months)
- Public Consultation on ESIA (within first 30 days of 3 months)
- Public Hearings (EPA to decide whether to hold these)
- Liberia Line Ministries Comment on ESIA
- Review by EPA Environmental Assessment Committee
- Approval or Rejection by EPA (within 3 months of receiving ESIA).

After the submission of an application for an environmental impact assessment license, the project proponent is to publish a notice of intent that states the information that may be necessary to allow the stakeholders or any interested party to identify their interest in the proposed project or activity. This information must include the nature of the project, its related activities, its timeframe and its site of operation and the area that may be impacted.

Before preparing the ESIA, the project proponent is required to conduct public consultations with the potentially affected stakeholders. This procedure is called the scoping process which aims to inform the stakeholders about the project's details, its potential impacts on the physical, biological and socio-economic environments, and the mitigation measures that can be taken in order to minimize these impacts. It also aims to get the stakeholders' input on the various related issues. The scoping process is also a guiding process and assists in identifying the impacts, mitigation measures and alternatives. The scoping process consists of publishing the project's details in the affected district's media, holding public meetings to consult directly with the affected communities and stakeholders, and incorporating the views of these stakeholders in the scoping report which is submitted to the EPA.

On the completion of the ESIA report, the public is invited again to participate in the ESIA review through public consultation meetings. The public's views on the ESIA are taken into consideration by the EPA when deciding on approving or rejecting the project. In some cases, the EPA may decide to hold a public hearing about the project in order to strengthen the public participation, if this was lacking

The; EPA will be responsible for overall external monitoring of the implementation of this ESMF and subsequent ESMPs. It will provide technical support and participate in training and sensitization of stakeholders (if requested) to enhance understanding of the national environmental and social safeguard instruments. The Agency has a monitoring and supervisory role and shall be responsible for confirming the results of the screening process, reviewing and clearing subproject-specific safeguard instruments, and conducting compliance monitoring within the context of the national laws and regulations, as well as the AfDBs' policies and procedures.

3.2.1.2. DIFFERENT REGULATIONS RELATED TO THE EPML

PART Thirteen (XIII) Section 110 of the EPML of Liberia considers the following regulations:

1. The Legislature may on the recommendations of the Agency and upon consultation with the Line Ministries, make regulations providing for matters that are required or permitted by this Law to give full effect to the purposes and objectives of this Law;
2. Regulations made under subsection (1) shall include:

    a) The establishment of the Environmental Court;
    b) Civil procedure for suits under section (5) of the Law;
    c) Provide for the issue, amendment and revocation of any license issued under this Law;
    d) Provide for fees and levies to be charged under this Law;
    e) Prescribe anything required or permitted to be prescribed under this Law;
    f) Provide for the protection of any particular species of fauna and flora; and
    g) Provide for any regulations may be made under this Law.

3.2.2 Land Rights law (2018)

The Land Rights Law, also called the Land Rights Act, or LRA in short was passed by members of the National Legislature on August 23, 2018. The President of Liberia signed this law on September 19, 2018. The law was printed into handbills on October 10, 2018. The Law provides the Liberia Land Authority (LLA) the power for land rights in Liberia, centered on four basic types of rights[9]:

I. Public Lands – land that is not Private Land, or Customary Land, or Government Land. It is land designated for future use, managed in the public interest, owned by a community, and used or managed in accordance with customary practices and norms.
II. Government Land - land owned by the Government, including land used by government buildings, such as government offices, government schools, and government hospitals. The land the government roads pass on is also Government Land.
III. Customary Land - land owned by a Community and used or managed according to the customs and tradition. Customary Land includes, but is not limited to residential land, farmland, communal forestlands, and fallow lands; and
IV. Private Lands: land owned by an individual or private entity, in which management and use decisions are based solely on formal law (i.e., statutes, regulations, executive orders, and court decisions), where the owner enjoys the full bundle of land rights, which include, but are not limited to, the right to exclude all others, use and possession, own natural resources on the land (e.g., forest), and to transfer all or some of the rights through sale, lease, concession, gift, donation, will, or any other lawful means.

[9] Land Right Law, 2018

Findings from the public consultation for the development of this ESMF reveals that, land for the implementation of the proposed project are both customary and private lands. Customary lands are mostly found in the project implementing areas of Grand Gedeh, Grand Bassa, and Bomi Counties, while farmlands for the implementation of the proposed project in Montserrado County are privately owned.

Privately owned land, as disclosed by participants during the public consultation, are given to farmers and farming corporations by the legal owner of the property for agricultural development as a means of managing the property until the time of readiness by the legal owner.

3.2.3 Draft Law on Sanitary and Phytosanitary Regulations, 2015[10]

This Law applies to all official measures taken by the Republic of Liberia whose purpose is to protect:

- Human or animal health from food-borne risks;
- Human health from animal- or plant-carried diseases;
- Animals and plants from pests or diseases; and
- The territory of a country from damage caused by pests.

3.2.4 Decent Work Act, 2015

The purpose of the Decent Work Act, 2015 is to:

- Promote the attainment of decent work in Liberia, by establishing a regulatory environment;
- Ensure respect for, and the protection and fulfilment of fundamental rights at work;
- Give effect to obligations incurred by Liberia as a member state of the International Labor Organization;
- Establish transparent and accountable institutions and procedures of labor market governance; Contribute to the enhancement of the human capabilities of all who work in Liberia; and
- Promote economic development and growth.

Part IV of the Act deals with Occupational Safety and Heath, while the rest of the Act deals with employment and labor requirements.

3.3 RELEVANT INTERNATIONAL CONVENTIONS AND AGREEMENTS

[10] Draft Law on Sanitary And Phytosanitary Regulations, Rev.3 26 March 2015

3.3.1. International Agreements triggered by the Proposed Project

Liberia is a party to several international and regional conventions related to the environment and natural resources management which influence the country's policies and legislation. The environmental treaties and conventions most relevant to the project are set out in the table below.

Table 7: International Agreements triggered by the Proposed Project

AGREEMENT/CONVENTION	DESCRIPTION/OBJECTIVE	RELEVANCE TO THE PROJECT
United Nations Convention on Biological Diversity (CBD) (ratified 2000)	The Convention is relevant in that land clearing activities have potential to cause loss of habitat and associated biodiversity and habitat disturbance. In addition, the African Development Bank's Integrated Safeguard Policy on Biodiversity Conservation and Sustainable Natural Resource Management reflects the objectives of the Convention to conserve biological diversity and promote use of renewable natural resources in a sustainable manner The Convention has three main goals, including the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources	Land clearing and potential burning in preparation of land for rice, cassava, and vegetable production and to construct relevant infrastructure (storage facilities, etc.) will impact existing biodiversity in Project affected areas. Includes the possible loss of trees/vegetation and dependent biodiversity. The project will be executed sustainably in such a way as to conserve natural aquatic, woodland and wildlife habitat as far as possible and minimize disturbance to the site ecosystem.
Convention to Combat Desertification (CCD) (Signed 1998)	To combat desertification and mitigate the effects of drought	Project's activities such as potential land clearing and burning in preparation for farming and construction of relevant infrastructure could create environments prone to encourage desertification
United Nations Framework Convention on Climate Change (UNFCCC) (ratified 2002)	The Convention is relevant as the clearing of land for the Project has the potential to contribute to climate change since loss of vegetation deprives the earth of the carbon sink which help mitigate global warming. The convention aims to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system	Relates to the farming activities of the Project, especially inland and vegetation clearing. The loss of trees and vegetation will mean a loss of "green cover" and loss of carbon capture footprint. The Project will ensure a conservative approach to vegetation clearing so as to limit loss of vegetation.

Ramsar Convention on Wetlands of International Importance (ratified 2003)	The Convention is relevant to management of wetland systems so that the human uses of these areas are undertaken in such a way as to retain their natural capital for future generations. To encourage and support countries to develop and implement national policy and legislative frameworks, education and awareness raising programs, as well as inventory, research and training projects. Also, the convention aims for national action and international cooperation for the conservation and wise use of wetlands and their resources	The project will be implemented in wetland areas, which include irrigation rice perimeters in Grand Gedeh, River Gee, Maryland, and Montserrado Counties. The project must ensure the wise use of these wetlands. In furtherance, the project will aim to mitigate impacts on wetland systems and will implement the necessary procedures to protect wetland systems.
United Nations Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) and the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women (OP-CEDAW)	Convention highlights the right of women to own, manage, enjoy and dispose of property as central to their financial independence and may be critical to their ability to earn a livelihood and to provide adequate housing and nutrition for themselves and for their children	Women are the main targets of the Project (40%) and will ensure that they have access to the benefits of this Project in the same way as men
United Nations Convention on the Rights of the Child (UNICEF 1989)	Sets out the civil, political, economic, social, health, and cultural rights of children. Other rights in the treaty include the right to education, the right to play, the right to respect for privacy and family life	The Project could potentially affect the right to health of the child through the generation of dust, and air pollution, poor waste management, and spread of malaria due to stagnant water in rice perimeters
African Convention on the Conservation of Nature and Natural Resources (ratified 1978)	This convention aims at enhancing environmental protection, to foster the convention and sustainable use of natural resources and to harmonies and coordinate policies in these fields.	This convention is relevant to the planning, and implementation stages of the proposed development.
International Covenant on Economic, Social and Cultural Rights (ratified 2004)	This commits Liberia to work toward the granting of economic, social, and cultural rights to individuals, including labor rights and rights to health, education, and an adequate standard of living. ICESCR is part of the International Bill of Human Rights, along with the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR).	The project will implement the necessary procedures to ensure that there is no infringement on economic, social, and cultural rights.

Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (ratified 2007)	This provides a framework to combat all forms of discrimination against women through appropriate legislative, institutional and other measures.	The project will implement measures in line with this protocol to avoid discrimination against women.
African Charter on Human and Peoples' Right (not ratified yet, but signed 1998)	The charter sets standards and establishes the groundwork for the promotion and protection of human rights in Africa.	The project will implement measures in line with this charter to ensure human rights are not infringed.
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (ratified 1981)	This is an international agreement between governments to ensure that international trade in specimens of wild animals and plants does not threaten their survival.	The project with implement the necessary procedures for the protection of the biodiversity in the surrounding area of the Project.
UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (ratified 2002)	This convention provides for protection of intangible cultural heritage.	The project will implement the necessary procedures to protect cultural and natural heritage.

In addition, Liberia is a signatory to various International Labor Organization (ILO) Conventions which are relevant to working conditions and regulation on site during construction and operation of the Project[11].

These include:

- C029 - Forced Labor Convention, 1930
- C105 - Abolition of Forced Labor Convention, 1957
- C182 - Worst Forms of Child Labor Convention, 1999
- C111 - Discrimination (Employment and Occupation) Convention, 1958

3.3.2 FAO Environmental and Social Standards

At the program and field level, FAO Environmental and Social Standards (ESS) are designed to help manage and improve FAO environmental and social performance through risk and outcome-based approach. The nine ESS standards set out specific requirements relating to different social and environmental issues. Projects approved and supported by FAO must meet these environmental and social standards. FAO Environmental and Social Standards used in this assessment relating to the following areas on table below.

The application of the standards is determined during FAO's social and environmental screening and categorization process. Where it is determined that a project may present certain risks and/ or impacts, and requirements of the relevant standard (s) are triggered[12].

[11] Source:http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102742

[12] FAO environmental and Social Management Guideline, 2015

Table 8: Environmental and Social Standard Triggered by the project

Environmental and Social Standard Triggered	Yes	No	Justification
ESS 1: Natural Resource Management	**X**		This safeguard recognizes that competition over natural resources is intensifying. Also degradation of natural resources and loss of ecosystem services are escalating as a result of the direct pressures and drivers of change. The rehabilitation of irrigation schemes foreseen in the project (adding value to land) is important for the supply of water to farmland. Clarity in terms of land tenure and ownership is also crucial.
ESS 2: Biodiversity, Ecosystems and Natural Habitats	**X**		This policy will be triggered as agricultural activities in the proposed project areas will be undertaken in natural habitats, such as wetlands for rice production.
ESS 3: Plant Genetic Resources for Food and Agriculture	**X**		This policy is triggered as the project would promote sustainable crop improvements and production and enhanced productivity for local farmers.
ESS 4: Animal - Livestock and Aquatic - Genetic Resources for Food and Agriculture		**X**	This policy will not be triggered as the project does not consider livestock and animal husbandry
ESS 5: Pest and Pesticide Management	**X**		This policy on Pest and Pesticide Management is triggered as the project could include subprojects relating to the enhancement of agricultural productivity and introduction of high value crops. These activities could result in the use of pesticides. The Project will include relevant training at the field level such as in Pest management.
ESS 6: Involuntary Resettlement and Displacement		**X**	The project will not undertake any activities that will displace people. Farmers who will be involved in the project will have interventions on their lands hence, minimal uptake of private land is envisaged, especially in project areas located in Montserrado County.
ESS 7: Decent Work	**X**		The proposed project will introduce farmers to modern mechanized farming practice, as

			well as train them through the farmers Field School program
ESS 8: Gender Equality	**X**		The proposed project will promote gender balance. SADFONS rice, cassava, and vegetable production schemes targets primarily 1,000 farmers for which 20% are youths, 40% women and the remaining 40% adult male farmers.
ESS 9: Indigenous Peoples and Cultural Heritage		**X**	No records of Indigenous groups will be impacted by the projects as such this policy is not triggered. Also, cultural heritage is not likely to be triggered because the project will not be undertaken in areas designated and physical cultural sites.

3.3.2 AfDB Operational Safeguard triggered by the project

The AfDB ensures that its operations comply with its Operational Safeguards (OSs) by assessing environmental, climate change, and social risks and impacts as early as possible in the project cycle. Essentially the Bank has developed five OSs, and the Table below presents the relevant Policies that have been triggered by the proposed project. Attentions to these safeguard policies will ensure that environmental and social issues are evaluated in the decision making, help reduce and manage the risks associated with the Proposed Project and Provide a mechanism for consultation and disclosure of information[13].

Table 9: African Development Bank OS triggered by the Proposed Project

Policies	Yes	No	Description	Relevance
OS 1: Environmental and Social Assessment	X		Sets out the Bank's overarching requirements to identify, assess, and manage the potential environmental and social risks and impacts of a project. Requirements include: climate change vulnerability assessment; public consultation; appraisal and treatment of vulnerable groups; grievance procedures	Preliminary evaluation (literature reviews, etc.) has identified potential negative environmental and social impacts. There is, therefore, a need for an environmental assessment to ensure appropriate mitigation measures are put in place during all stages of the Project

[13] AfDB Policy on the Environment, 2004

			OS1 requires that the siting, design, construction, and operation of projects should avoid significant damage to cultural heritage (both physical and intangible). These include culturally sensitive sites such as cemeteries, historical relics, and artifacts	During Project implementation, there is a possibility of finding items of cultural heritage by chance, particularly during land clearing and preparation for works. These may be disturbed or lost due to a lack of knowledge in managing cultural heritage discovered by chance
OS-2: Involuntary resettlement: land acquisition, population displacement, and compensation		X	Seeks to ensure displaced persons due to Project activities are treated fairly, equitably, and in a socially and culturally sensitive manner; that they receive compensation and resettlement assistance so that their standards of living, income-earning capacity, production levels, and overall means of livelihood are improved; and that they share in the benefits of the project that involves their resettlement	Not Triggered The project will not undertake any activities that will displace people. Farmers who will be involved in the project will have interventions on their lands hence, minimal uptake of private land is envisaged, especially in project areas located in Montserrado County.
OS-3: Biodiversity, renewable resources, and ecosystem services	X		The policy prescribes requirements to identify and implement opportunities to conserve and sustainably use biodiversity and natural habitats	Project activities are implemented in areas of sensitive environmental habitats that might result in land conversion, natural habitat loss, deforestation, etc.
OS-4: Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials, and Resource Efficiency	X		This safeguard covers the range of impacts of pollution, waste, and hazardous materials for which there are agreed international conventions and comprehensive industry-specific standards, particularly the Environment Health and Safety (EHS) Guidelines	Project implementation will result in the generation of various forms and types of waste and other gaseous and liquid pollution. Activities such as agricultural production (e.g., land preparation and use of agrochemicals); post-harvest processes (e.g., milling operations and vegetables); post-harvest construction and rehabilitation works, etc. that will be carried out during Project implementation

OS 5: Labor Conditions, Health, and Safety	X		The policy outlines the need for contractors and other actors to protect workers' rights; establish, maintain, and improve the employee-employer relationship; protect the workforce from inequality, social exclusion, child labor, and forced labor; establish requirements to provide safe and healthy working conditions	The Project hiring and management of its labor force should adhere to this framework
Climate Safeguards System (CSS)	X		The CSS provides a set of decision-making tools and guides to enable the Bank to screen projects for risks associated with climate change. Following the screening of the Project will be classified	The Proposed Project is classified as Category II, indicating that it will be affected by climate change impacts

3.3.3 Analysis of points of convergence between the national legal framework and the ADB's operational safeguards

The table below presents the points of convergence and gaps between the AfDB's OS and national legislation.

Table 10: Analysis of points of convergence and divergence between AfDB's OSs and national regulations

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
OS1	**E&S Categorization and screening**	The AfDB's SO 1 provides for a categorization of projects (category 1, 2 and 3) for projects without a financial intermediary, according to explicit criteria that take into account aspects relating to vulnerability to climate change and social impacts relating to involuntary resettlement. Projects classified in category 1 (significant or irreversible environmental and / or social impacts, or significantly affecting sensitive environmental or social components and / or requiring a full PAR and / or project very vulnerable to climate change) must be submitted to an ESIA. Projects classified in category 2 (likely impacts are few, site-related, largely reversible and easy to minimize through the application of appropriate management and mitigation measures or through the integration of internationally recognized design standards. No action is required for Category 3 projects are those which do not directly or indirectly affect the environment, and which are unlikely to induce social impacts. They therefore do not require an environmental	The Environmental Protection and Management Law of Liberia (EPML), 2003 requires an application and/or conduct of an Environmental Assessment and establishes regulations for environmental quality standards, pollution control and licensing. Therefore, and in keeping with Annex 1, Section 6 of the mentioned law, it requires all new projects that found under the Environmental Laws of Liberia EIA mandatory listing are subjected to an Environmental Studies. The measures under Part III of the act set out compliance procedures and/or processes to follow during Environmental Assessment; provides a mechanism for balancing development and environment concerns as well as roles of the governing agency and line ministries.	The National laws and regulations for Environmental Assessment do not provide specific categorization for projects without a financial intermediary, according to explicit criteria that take into account aspects relating to vulnerability to climate change and social impacts relating to involuntary resettlement.	***The national law and the AfDB's Operational Safeguards will apply***

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
		and social assessment. Beyond categorization, no action is required. However, the correct design of a Category 3 project may require carrying out specific analyzes on gender, on institutional considerations, or other specific studies of social aspects essential to anticipate and manage unforeseeable impacts on communities.			
	Stakeholders Consultation	OS1 insists on the imperative of public consultation in the context of environmental and social assessment. The consultation should be carried out based on a stakeholder analysis.	Part III Section 17 of the EMPL requires a detailed and broad-based stakeholder's consultation during proposed projects development. The ESIA Procedural Guidelines also required the conduct of stakeholder's engagement including public meetings with potentially affected communities, local authorities and line ministries. Notwithstanding, the Constitution, Chapter 3 Article 15c states that there shall be no limitation on the public right to be informed about the government and its functionaries. In addition the Land Rights Act advocates for the consultation of communities through an assembly or Community Development Management Association prior to	There is similarity between the two policies.	***The national law and the AfDB's Operational Safeguards will apply***

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
			acquisition of customary or community land.		
	Gender **Vulnerable people or groups**	OS1 insists on taking gender into account and specifies the vulnerability criteria of people and insists on the need to take care of these aspects in the context of environmental and social assessment.	Liberia Constitution Article 18 states: • All Liberian citizens shall have equal opportunity for work and employment • regardless of sex, creed, religion, ethnic background, place of origin or • Political affiliation, and all shall be entitled to equal pay for equal work.	The law does not provide for special provisions for vulnerable groups as well assistance to women in relation to land and property rights	***The national law and the AfDB's Operational Safeguards will apply***
	Protection of cultural heritage.	OS1 defines requirements for the protection of tangible and intangible cultural heritage.	Specific provision not known to exist as per the EPML	The law does not provide for special provisions for this topic.	***The AfDB's Operational Safeguards will apply***
	Principles of prioritization of measures (avoid, minimize, mitigate, compensate)	OS1 states that the management of negative impacts must be designed according to the principle of hierarchization (Avoid, Avoid, Reduce, Compensate)	Specific provision not known to exist as per the EPML	The law does not provide for special provisions for this topic.	***The AfDB's Operational Safeguards will apply***
	Disclosure of safeguards documents	The information dissemination and access policy published in 2012 considers the disclosure of the Client's environmental and social safeguard documents by the AfDB group.	Part II, Section 4, 2(h) of the EPML required access to environmental information and promote disclosure for the ultimate benefit of the environment;	The publication and/or disclosure of information is not disclosed according to project categorization;	***The national law and the AfDB's Operational Safeguards will apply***

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
		OS1 specifies the documents that must be disclosed according to the environmental categorization of the project. For category 1 projects, the disclosure is made 120 days before the Board. For category 2 projects, it is 30 days before the Board. For any categorization, all safeguard documents produced after the Board, need to be disclosed before the commencement of the work.	Whereas, Part III, Section 17 specifies the publishing of notice for the consecutive days, invite comments from the public. The public notice shall state the particulars of the project as set out in section (14); The comments under sub-section (a) shall be received by the agency within 30 days of the publication of the notice or within such extended period as the Agency may grant by published notice.	There is no provision for a specify number of days for disclosure	
	Grievance Redress Mechanism (GRM)	The borrower must establish a credible, independent and autonomous local grievance and redress mechanism. This mechanism covers several categories of grievances, including those relating to resettlement, environmental impacts and nuisances and workers' rights.	Specific provision not known to exist as per the EPML However, as revealed by the Liberia constitution, a formal legal redress exists through Liberia court system with final appeal at Supreme Court		***The AfDB's Operational Safeguards will be applied***
OS3	**Preservation of biodiversity and ecosystem integrity**	OS3 takes into account the principles of conservation and the definitions provided for international regulations on biodiversity.	Part II, Section 4 (2d) of the EPML, 2002 ensure the implementation of the biodiversity conservation principles and measures declared by treaty law to which Liberia is a party faithfully, through the institutional arrangements as shall be established under this Law	Biodiversity conservation under the Liberian legal instrument considers both national and international standards.	***The national law and the AfDB's Operational Safeguards will apply***

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
OS4	**Pollution prevention and control, and efficient use of resources**	The borrower applies pollution prevention and control measures in accordance with national laws and standards, international conventions and internationally recognized standards and good practices - in particular the Environment, Health and Safety Directives.	The EPML ensures the provision of clean and healthy environment for all considering that the true and total costs of environmental pollution are borne by the polluter. Project developers are to ensure pollution prevention and control measures in accordance with compliance regulations and standards, international conventions. Additionally, Article 11 of the Draft Law on Sanitary and Phytosanitary Regulations states that the Government of Liberia shall ensure that its sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks assessment techniques developed by the relevant international organizations.	The EPML mentioned emphatically that the polluter takes absolute responsibility of the Cost of pollution during project implementation.	***The national law and the AfDB's Operational Safeguards will apply***
OS5	**Protection of the social rights of workers, children**	OS5 defines principles and sets requirements to achieve the objectives, including the protection of workers' social rights, compliance with ILO requirements, prevention and protection against occupational risks. The OS also deals with child labor, the requirements to be applied to suppliers and subcontractors and the handling of worker complaints.	Specific provision in the EMPL not known to exists. However, the labor law and/or Decent Work Act, 2015 ensure the attainment of decent work in Liberia, by establishing a regulatory environment; respect for and the protection and fulfillment of fundamental rights at work. Whereas, Part IV of the Act	There is no provision in the EPML that relates specifically to the protection of the social rights of workers and children. However, other laws within the Country that relate to the subject take preeminence.	***The national law and the AfDB's Operational Safeguards will apply***

OS triggered by the project	Aspects	OS requirements	Compliance with national regulations (National laws and regulations)	Differences between the two policies	References to apply
			ensure Occupational Safety, employment and labor requirements.		

3.3.4 Categorization of the Project

Based on the environmental and social impacts and the extent of the proposed project areas, the Project is classified as African Development Bank Category II. The impacts are site-specific; few are irreversible and mitigation measures can be clearly and easily designed. The scope of EIA for a Category II project is intended to be concise and focused on specific environmental and social impact analyses, including the development of Environmental and Social Management Plans (ESMPs) as appropriate.

The Project categorization follows the African Development Bank standards. The Liberian EPA EIA Procedural Guidelines of 2006 do not include provisions about screening criteria to determine the categorization related to different level of EA necessary for the evaluation of the proposed project.

3.4 INSTITUTIONAL FRAMEWORK

The central and local government institutions' support is critical to the success of the Project. They have regulatory functions, and continuous engagement with them is often required. These will include the EPA, MOGCSP, MOA, FDA, County Development Superintendents, etc.

The Environmental Protection Agency (EPA) is the environmental regulatory authority in charge of issuing environmental guidelines and reviewing the Environmental Impact Assessment process.

During the studies, it became evident that the focal institutions named in the table below are in most cases, presently overwhelmed by their current responsibility and are trying to cope with limited human and technical resources. Their current capacities are inadequate to efficiently monitor and ensure implementation of the ESMF/ESMPs. For example, the capacity of EPA and MOA is generally weak, especially regarding logistics in accessing the project beneficiary. The proposed project is expected to enhance the capacity of public sector institutions, such as MOA, MOGSCP, EPA, FDA, that are aligned with the project to ensure its objective. The proposed project will also concentrate on developing the capacity of the project beneficiaries, mostly farmers and farmers' cooperative, to be involved with ESMF implementation communities.

Table 11: Institutions intervening in the implementation of E&S safeguards of the project

INSTITUTION	RESPONSIBILITY
Ministry of Agriculture	The Ministry of Agriculture regulates the forestry as relate to plant quarantine, agroforestry and food crop-related plantations, fishery, and agriculture sectors, and has specific responsibilities for soil conservation. Some water resource matters used to be managed by the National Water Resources and Sanitation Board prior to the civil war, and proposals have recently been made for its re-establishment. It plans, executes, administers, manages, and supervises agriculture programs and provides extension services, trains local farmers in improved cultural practices, and supplies farm inputs to enhance food security.

Environmental Protection Agency of Liberia (EPA)	EPA is the national focal institution for the management of the environment and the enforcer of the Environmental Protection Management Law, 2003; and its supporting legislation. In support of the establishment of the EPA, the EPA Act (GoL, 2003a) also established County and District Level environmental committees, responsible for the local delivery of national environmental policy and priorities. In a move towards a more bottom-up approach, a key function of the committees is to articulate local level environmental issues to the EPA, who, in turn, are charged with formulating and passing on a relevant response for local-level implementation. In addition, under Section 20 and 21 of the EPA Act (GoL, 2003a), the EPA is mandated to appoint environmental inspectors within districts to monitor the implementation of environmental standards as established under the EPML (GoL, 2003b). The power of these inspectors is wide-ranging and includes the provision to close "any manufacturing plant, establishment or other activity which pollutes or is likely to pollute the environment, contrary to the provisions of the Act" (GoL, 2003a).
Traditional Management Practices	Local-level resource management is implemented through traditional systems and practices. At the lowest level of local administration, power and decision-making are in the hands of traditional tribal authorities. The highest rank is that of Paramount Chief, who is responsible for the actions of a number of Clan Chiefs. The Paramount Chief is elected by the chiefs and elders but serves at the discretion of the President, who may veto the election. The Council of Elders (elderly, respected community members) must be consulted on important matters. The Paramount Chief has responsibility for enforcement of tribal customs, aspects of law and order, collection of taxes by lower rank chiefs, and promotion of agriculture, industries, trade, and welfare. It is difficult to judge the power of the chiefs, who remain strongly influenced by the secret societies (Poro/Sande) in relation to the observance of tribal customs. Chiefs are not government employees but retain a portion of taxes for their services and for local projects. Traditionally, their power is largely determined by their control (not ownership) of land. The interactions between the State and its institutions with the traditional tribal institutions and practices are regulated by the Hinterland Laws 1949.
Central Agricultural Research Institute (CARI)	CARI is an agricultural research facility that is slowly recovering from civil conflict. CARI was amongst the GOL institutions hardest hit by the protracted civil conflict because it served as the base for three successive warring factions, then was home to over 10,000 displaced persons for five years, and finally became UNMIL sector base. Current emphases include rice, cassava, and yam improvement; maize, fruits and vegetable screening and evaluation; animal husbandry; and aquaculture.
Liberia Land Authority	The LLA was recently created via the passing of the LLA Act by the Legislature in October 2016. One of the primary functions of the LLA is to assist in the resolution of land tenure disputes. According to the documents guiding the LLA Project: The LLA has a legal mandate for land administration in Liberia. The LLA will subsume the Department of Lands, Surveys and Cartography (DLSC) under the Ministry of Mines and Energy, the Deeds Registry currently within the Center for National Documents and Records Agency

	(CNDRA), and relevant functions from the Ministry of Internal Affairs (e.g., County Land Commissioners). The LLA's main activities will focus on a) land policy and planning, b) provision of a land survey, registration and mapping services, c) provision of land valuation services, d) creation of a National Land Information System, e) alternative land dispute resolution services, f) coordination of access to government and public land for investment and conservation projects, g) promotion of land use planning and zoning by local governments, and h) demarcation and titling of the customary land rights of local communities.
Ministry of Commerce & Industrial	The Ministry of Commerce and Industry is mandated to Establish and regulate commodity and trade standards establish and enforce standards for business practices, monitoring and regulating prices of essential goods.
Ministry of Labor	The Ministry of Labor was created by a Peoples' Redemption Council, PRC Decree No. 35 in 1981; Decree No. 35 repealed the Act creating the Ministry of Labor, Youth, and Sports and amended the Executive Law to provide for a new chapter 34. The Ministry is responsible for the promotion, administration, development, regulation, and control of labor law and practices in Liberia.
Ministry of Gender, Children, and Social Protection (MGCSP)	The MGCSP is mandated to "coordinate and ensure gender equality and equity, promote the survival, social protection, and development of children, vulnerable and excluded and persons with disability and integrate fulfillment of their rights, empowerment and full participation into National development." The ministry works to promote gender mainstreaming throughout local and national government institutions and promotes programming to address social and economic inequalities and vulnerabilities in Liberia. Ministry of Gender could be involved in the implementation of the project at the County level in the process of integrating Gender-Based Violence (GBV) and could ensure women's involvement in the three selected regions of the proposed project.
Forestry Development Authority (FDA)	The FDA established in 1976, was historically the government agency with primary responsibility for environmental management in Liberia. Now an autonomous body, and mandated by the National Forestry Reform Law of 2006, the FDA has responsibility for the protection, management, and conservation of government-owned forests and wildlife on a sustainable basis. The 2006 law revised the institutional framework of the FDA and created a Department of Conservation, which is made up of the Division of National Parks and the Division of Wildlife with the responsibility for the development and management of protected areas and wildlife, respectively. The role of the FDA will be on all forest-related issues of the Project; FDA expertise will be required for supervision, especially when project activities are planned in close proximity to where virgin areas are involved in locating project activities. Technical expertise of FDA will be required in the siting of project activities in certain areas (ecologically sensitive areas), resulting in loss, fragmentation, and degradation of habitat through land clearance for the implementation of the proposed project

Ministry of Public Works	The Ministry of Public Works (MPW) is responsible for all government constructed infrastructure, i.e., roads, bridges, dams, buildings, etc. It ensures the quality and standards of the infrastructures and ensures that construction guidelines and laws are followed. The MPW also has the mandate to establish the categorization and gazetting of infrastructure and the corresponding ROWs. Furthermore, the ministry has the statutory responsibility to approve the design and construction of all civil works, including the motor road. Additionally, it is also responsible for carrying out urban and town planning, as well as provide architectural and engineering supervision of infrastructure required for waste management.
Liberia Water and Sewer Corporation (LWSC)	According to the LWSC website, their corporate objective is "The provision, distribution, and supply of water in Liberia for public, domestic and industrial purposes." The LWSC was created by an Act to amend the Public Utilities Law in 1973. The Corporation is empowered to construct, install, establish, operate, manage and supply to all parts of Liberia, safe drinking water and perform all sewerage services, as well as to maintain such water and sewerage facilities. LWSC also reportedly maintains a working group comprised of representatives from all the Liberian ministries with responsibilities that intersect with their water and sewer work. This working group can likely be leveraged to help identify, facilitate resolutions and overcome Project risks.
Food and Agriculture Organization (FAO)	The Food and Agricultural Organization (FAO) is a specialized agency of the United Nations that leads international efforts to defeat hunger. FAO will make supervision mission to follow up on the implementation of the ESMP as well as monitor and ensure the successful implementation of the project.
African Development Bank	AfDB will monitor and ensure the successful implementation of the project.

CHAPTER FOUR: DESCRIPTION OF THE GENERAL ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

4.1 INTRODUCTION

This section describes the general environmental baseline conditions of the potential areas to host the various Project activities within the three regions identified. Given the small size of the country, the baseline conditions, in general, will not be very different from one region to the next, especially where issues such as climate, relief, landform, forest, and vegetation cover are a concern. Nonetheless, it is important to note that the selected crops for the proposed project, which is the main focus of the Project, are available in almost all the selected regions.

4.2 COUNTRY PROFILE

Liberia is situated on the West Coast of Africa. In total, the country's landmass is 37,000 square miles (GoL, 2018). It also lays claim to an economic zone of 13 nautical miles (nm) and a territorial zone of 200 nm. To its east, it borders Cote D'Ivoire, to the west Sierra Leone, and to its north is Guinea. Its coastline is vast and covers approximately 560 kilometers (km), which stretches all along the Atlantic Ocean to its south. The country is landlocked on three sides with a North Atlantic Ocean coastline of approximately 560 km in length as its fourth border. The land of the country stretches from its coastal plains through a region of rolling hills and inundated plateaus with mountains reaching around 644 meters, such as the Bong Range (GoL, 2013).

Figure 2: Map of Liberia (Source: Liberia DHS, 2013: p. xxiv)

4.3 GOVERNANCE AND ADMINISTRATIVE STRUCTURES

In terms of its governance, the country is divided into 15 counties. These are classified as first-order administration divisions. Two of these counties, namely RiverGee and Gbarpolu, are more recent as they were created in 2000 and 2001. Each of these counties is further divided into districts and clans at second-order divisions (GoL, 2013). There are a total of 136 districts, several of which have been created in the last 70 years. In fact, only Grand Cape Mount and Margibi counties have not formed any new districts since 2004. Monrovia in Montserrado County, Greater Monrovia, serves as the country's administrative capital. The country is governed by a democratic leadership regime which consists of an elected legislature and an executive and independent judiciary. Powers within the government are vested in different bodies, such as the legislative, executive, and judicial powers of the government. Under this government, there are currently 19 functional ministries and some autonomous agencies and commissions which have been created to address specific development issues (UN, 2017).

4.4 LAND

The Land in Liberia is partly governed by Liberia's Land Authority, with the creation of the Land Authority Act of 2016. Imbedded in Liberia's system of administration is an appreciation for, and hence great allowance for, traditional authorities in any development. This is manifested in its land policies. Land in Liberia is still largely held under a dual land tenure system, whereby both customary and statutory land systems are recognized. Land tenure remains, as some scholars have written, a complex system in sub-Saharan Africa, with a great deal of overlap between a number of traditional systems and state control. In essence, land in Liberia is categorized into four categories in accordance with the Land Rights Bill of 2014. These categories are public land, government land, customary land, and private land.

The fundamental principle under the latter bill is that anyone in the country who does not have any formal title to land can enjoy the right to, or possess, land pursuant to an agreement of a lease, easement, or license. Most of the land around the studied area comprises of private family land or communal land. According to the Land Rights Bill of 2014, which has recently been superseded by the Land Rights Act of 2018, such land is usually held by indigenous Liberians under a traditional land tenure system (FAO, 2018). The government provides legal title to land, which can protect landowners from land insecurity. Community members can obtain land from traditional leaders, although such documentation can only be given by the government. Traditional Authorities (TAs), on the other hand, can be granted land or can purchase land from a private landowner. Particularly in rural areas, land ownership and land/house plots held largely under community land are obtained through consultation with the competent leadership structure (often the village/town leader or chief) on a free-of-charge basis. In terms of private family land, land can be obtained by means of land purchases from family representatives.

4.5 DEMOGRAPHICS

4.5.1 Population

Foremost, it should be mentioned that Liberia's statistical system was severely affected during the civil war (1989-1996 and 1999-2003), during which there was a low capacity for statistical

monitoring, education, and training [Liberia Institute of Statistics and Geo-Information Services (LISGIS), 2017]. Most of the country's demographic data was lost during the years of war, leading to a generally poor record-keeping and archiving culture (*ibid.*). Much of the data is also outdated, as the last formal census was undertaken in 2008. However, more recent countrywide surveys, such as the Demographic and Health Survey (DHS) of 2013, and the HIES of 2016, shed more light on the recent data trends.

Therefore, the following section provides data from a range of different sources. These range from data obtained directly from LISGIS to reports and plans either from the GoL, the World Bank (WB), or the UN. As mentioned, the country's population is estimated at just over 4.2 million (LISGIS, 2017). The following table provides the Country's population growth rate between 1962 and 2008 (*ibid*).

Table 12: Liberia Population Growth (Source: LIGIS, 2017: p.6)

Index	1962	1974	1984	2008
Population	1,016,443	1,503,368	2,101,628	3,476,608
Population change	-	486,925	598,260	1,374,980
Average annual increase	-	40,577	59,826	57,291
Percentage increase	-	48	40	65.4
Annual rate of growth	-	3.3	3.4	2.1

Liberia calls itself home to just under 1 million households, with a mean household size of 4.3 persons per household (LISGIS, 2017). According to LISGIS (*ibid.*), the largest household sizes can be found in Maryland County (with an average of 4.9 people per household), whilst Gbarpolu County has the smallest household sizes (average 3.7 people per household). Table 12 portrays the mean household sizes in Liberia, cross-classified by rural, urban, region, and county.

Table 13: Liberia Mean Household Sizes [Source: Liberia Core Welfare Indicator Questionnaire (CWIQ) Survey, LISGIS /2010]

People		**1-2**	**3-4**	**5-6**	**7+**	**Mean Household Size**
LIBERIA	741,771	12.8	33.2	30.9	23.1	4.98
Rural	402,242	11.8	33.6	32.1	22.5	4.99
Urban	339,530	13.9	32.7	29.4	23.9	4.98
Greater	*208,560*	*15.4*	*34.7*	*28.5*	*21.4*	*4.82*
North Central	*219,846*	*10.8*	*32.6*	*31.0*	*25.6*	*5.14*
Bong	70,450	7.5	30.5	35.6	26.4	5.39

People		1-2	3-4	5-6	7+	Mean Household Size
Lofa	60,233	11.9	40.6	29.4	18.2	4.73
Nimba	89,163	12.8	28.9	28.4	29.9	5.21
North	*68,406*	*12.8*	*38.5*	*30.2*	*18.5*	*4.73*
Bomi	21,165	16.9	30.6	24.5	28.0	4.99
Grand Cape	25,796	11.1	32.3	35.8	20.8	5.01
Gbarpolu	21,445	10.9	53.7	29.0	6.4	4.13
South Central	*134,056*	*12.0*	*35.7*	*31.8*	*20.5*	*4.87*
Grand Bassa	55,550	14.7	43.8	28.6	13.0	4.31
Margibi	46,105	11.4	29.9	39.1	19.5	4.91
Montserrado	32,401	8.3	30.1	26.9	34.7	5.79
South Eastern	*60,787*	*14.9*	*27.2*	*31.9*	*26.0*	*5.11*
Grand Gedeh	27,078	19.3	30.9	29.9	19.9	4.67
Rivercess	15,659	12.0	29.9	37.6	20.5	4.94
Sinoe	18,050	10.7	19.3	29.9	40.1	5.91
South Eastern	*50,116*	*9.5*	*22.9*	*37.8*	*29.8*	*5.47*
Grand Kru	9,870	4.2	19.5	36.8	39.5	6.08

There are several ethnic affiliations across Liberia. The largest ethnic groups are the Kpelle (around 20% of the Liberian population are affiliated to this group), Bassa (13%), Gio (8%), Mano (8%), and Kru (6%) (LISGIS, 2009: p. 87). There seems to be little variation between urban and rural household sizes. The country appears to be experiencing growth in its population. Perspective wise, the 2008 census pin-pointed the population at around 3.5 million: up from 2.1 million in 1984 (GoL, 2013).

Table 14: Liberia Population Growth Rates (Source: LISGIS, 2008: p.8)

County	Population		2008			Growth Rate	Average Household Size	
	1984*	2008	*No. of Households*	*Household Population*	*Special Population*	1984-2008	1984	2008
Bomi	66,420	84,119	20,508	83,033	1,086	0.9	4.0	4.0
Bong	255,813	333,481	69,810	328,668	4,813	1.0	4.9	4.7
Gbarpolu	48,399	83,388	47,440	80,186	3,302	2.3	4.6	5.5
Grand Bassa	159,648	221,693	23,950	217,230	4,463	1.4	4.0	4.6
Grand Cape Mount	79,322	127,076	18,143	124,777	2,299	2.0	4.5	5.2
Grand Gedeh	63,028	125,258	8,969	122,913	2,345	2.9	5.2	6.8
Grand kru	62,791	57,913	49,642	57,650	263	-0.4	4.9	6.4
Lofa	199,242	276,863	45,095	273,990	2,873	1.3	5.2	5.5
Margibi	151,792	209,923	19,254	207,146	2,777	1.1	4.5	4.6
Maryland	69,267	135,938	13,981	134,279	1,659	2.8	5.8	7.0
Montserrado	491,078	1,118,241	232,585	1,105,246	12,995	3.5	5.4	4.8
Nimba	313,050	462,026	80,734	454,881	7,145	1.7	5.8	5.6
Rivercess	37,849	71,509	15,829	69,844	1,665	2.3	5.9	5.0
Rivergee	39,782	66,789	9,822	64,330	2,459	2.2	5.4	6.5
Sinoe	64,147	102,391	14,533	101,068	1,323	2.1	6.6	6.4
TOTAL	**2,101,628**	**3,476,608**	**670,295**	**3,425,241**	**51,467**	**2.1**	**6.1**	**5.1**

Table 15: Population Distribution per Sex and County (Source: LISGIS, 2008)

Name of county	Sex		Total
	Male	Female	
Bomi	42940	41179	84119
Bong	164859	168622	333481
Gbarpolu	43906	39482	83388
Grand Bassa	110913	110780	221693
Grand Cape Mount	65679	61397	127076
Grand Gedeh	64994	60264	125258
Grand Kru	29648	28265	57913
Lofa	133611	143252	276863
Margibi	105840	104083	209923
Maryland	70855	65083	135938
Montserrado	549733	568508	1118241
Nimba	230113	231913	462026
Rivercess	37224	34285	71509
Rivergee	34863	31926	66789
Sinoe	54767	47624	102391
Total	1739945	1736663	3476608

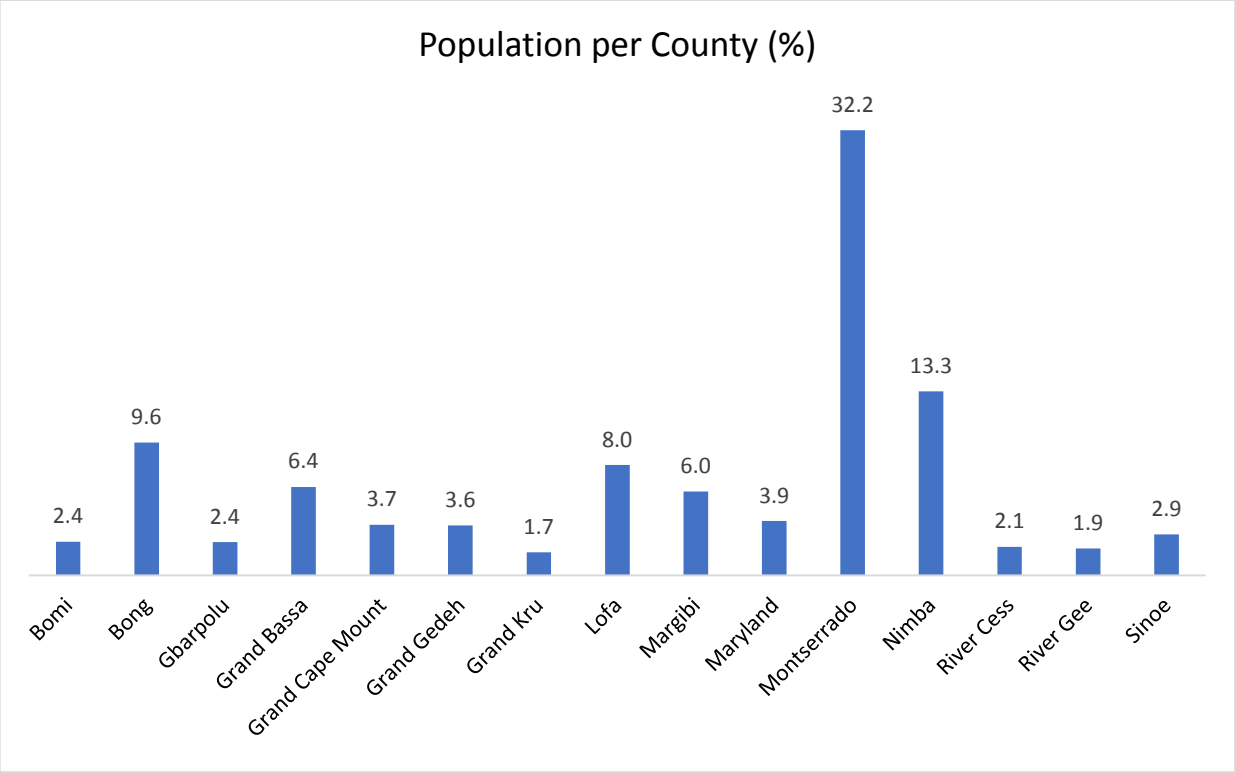


Figure 3: Liberia's Population as a Percentage of Each County (Source: LISGIS, 2008)

According to the government, much of this growth can be explained by the country's high fertility rate and declining mortality (GoL, 2018). Albeit this growth, there is also a negative net migration rate of 5.7 migrants for every 1,000 population (*ibid.*). In terms of a gender breakdown, females represent 51.1% of the population (LISGIS, 2017).

The largest county by population is Montserrado (classified as its own separate region), holding approximately 32.2% of the country's population (GoL, 2018). This is followed by Nimba (13.3% of the country's population) and Bong (9.6%) (*ibid.*). The smallest populated county is Grand Kru, with a population of just over 70,000 (1.7% of the total population). In terms of the largest cities, Monrovia is the country's capital and most heavily populated city, with just over one million residents (LISGIS, 2017). Each county also has its own capital, such as Bensonville in Montserrado County, Sanniquellie in Nimba, Gbarnga in Bong, and Buchanan in Grand Bassa (to name some of the largest capitals in terms of population figures). The statistical data points to a disparity between the urban and rural populations. For example, the rural population stands at around 53.9% of the total population (LISGIS, 2017). The government estimates that the average population density for the country is 93 persons per square mile: from 1,500 per square mile in the Greater Monrovia Region to only 22-40 per square mile in Eastern Liberia (*ibid.*).

As part of defining a country's population, understanding which age cohorts comprise the most and least of the country's population is critical for several reasons. One reason is to determine unemployment rates (as percentages of the working-age population) or to plan for the provision of social services (especially for the poor or youth). Figure 4 below provides a pyramid for the population of Liberia according to age categories.

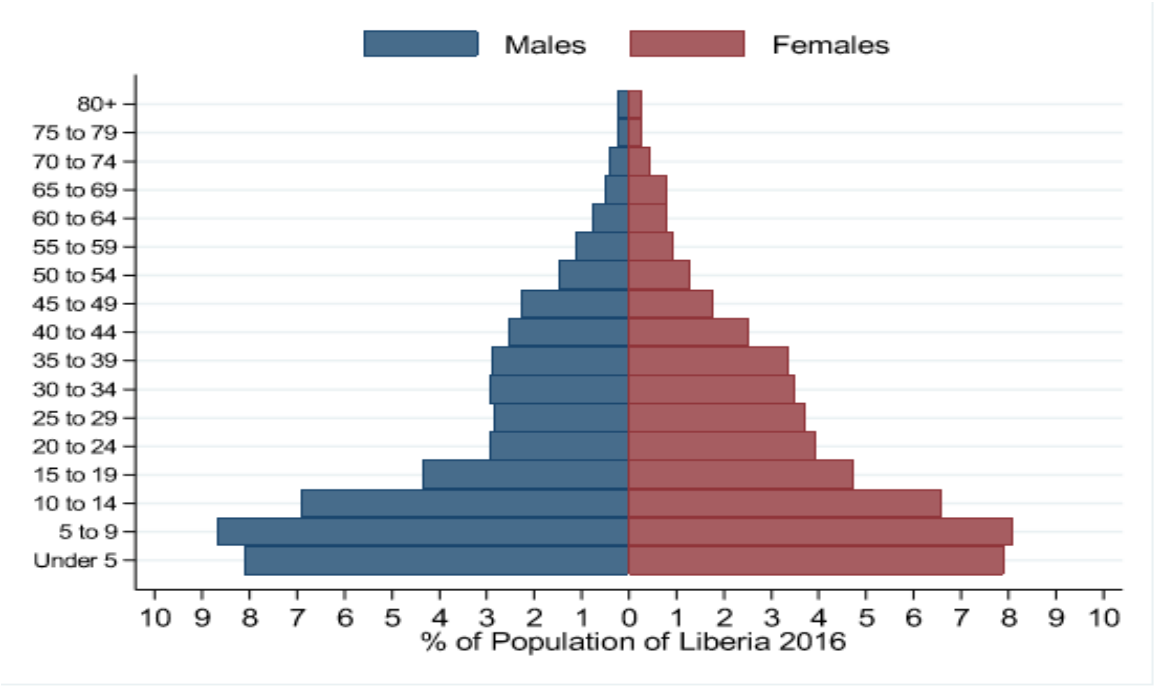


Figure 4: Population of Liberia in Age Categories (Source: LISGIS, 2017: p.11)

Considering age, the largest section of the population (52.6%) seems to be within the standard working-age population of 15-65 years of age (LISGIS, 2017). This is closely followed by residents who are 18 years or older (49.1%) and between 0-14 (44.5%). Very few residents are 65 years or older (2.9%) (*ibid.*). In summary, considering a pyramid of the population makeup, the country has a very youthful population. Moreover, the general life expectancy for men and women is around 53 years (GoL, 2013).

4.6 BIOPHYSICAL ENVIRONMENT

Four physiographic regions, corresponding largely to increasing elevation, are apparent in Liberia and roughly parallel to the coast (Figure 5; Gatter 1988):

a. *Coastal Plains:* lying at sea level to about 30m in elevation (average elevation about 15m above m.s.l) varies from 16-40 km in width. The Coastal Plain coast is about 560 km long and consists of a nearly unbroken sand strip, salt and freshwater lagoons, and a few promontories.

b. *Rolling Hills:* The belt of Rolling Hills, lying at about 200-330 m elevation (average about 92 m), is parallel to the Coastal Plain and has numerous hills, valleys, and waterways. Rivers flow rapidly in this region over bedrock bottoms and have numerous rapids within their channels.

c. *Mountain Ranges and Plateaus:* These lie behind the belt of Rolling Hills; nearly half of the interior of Liberia lies between 200-330 m in elevation in this region. Major mountain ranges, consisting of long ridges aligned along a southwest-northeast axis, are the Mano River

Mountain, Gibi Range, and Putu Range, whose summits reach 700m. Summits in the Bong range reach 500 m in elevation.

d. *Northern Highlands:* Two disjunct areas form the Northern Highlands: the Wologizi Range north-eastern Lofa County, which is variously reported as reaching 1335-1380 m in elevation at Mt. Wutivi, the highest point in Liberia (UNDP 2006). The other highland area is the Nimba Mountain range, in north-eastern Nimba County, which reportedly reaches maximum heights of 1,305 or 1,385 m on the Liberian side of the border; the range is shared by Côte d'Ivoire, Guinea, and Liberia.

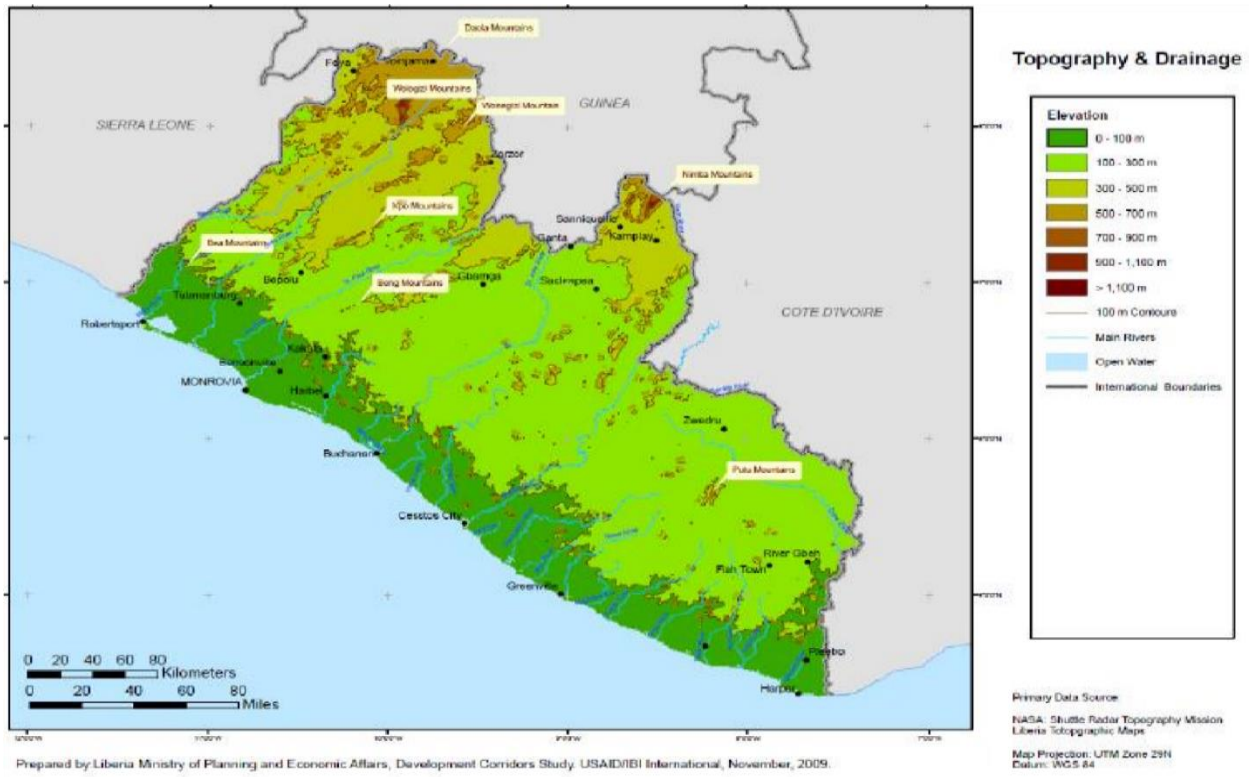


Figure 5: Topographic and Drainage map of Liberia

4.6.1 Climate

Liberia's climate consists of two separate climate regimes: the equatorial climate regime restricted to the southernmost part of Liberia, where rainfall occurs throughout the year, and the tropical regime dominated by the interaction of the Inter-tropical convergence zone (ITCZ) and the West African Monsoon. Because of Liberia's coastal location, the southwesterly flow of the monsoon prevails most of the year, maintaining a thin layer of moist marine air near the surface, although the Harmattan Wind typically intrudes for brief periods during the winter in coastal areas. This interaction of the ITCZ with the monsoon flow produces the summer wet season winter dry season characteristic of a tropical climate (The climate of Liberia is tropical and humid, with little change in temperature throughout the year. The mean is 27°C (81°F), with temperatures rarely exceeding 36°C (97°F) or falling below 20°C (68°F). Along the coast, the heat is tempered by an almost constant breeze.

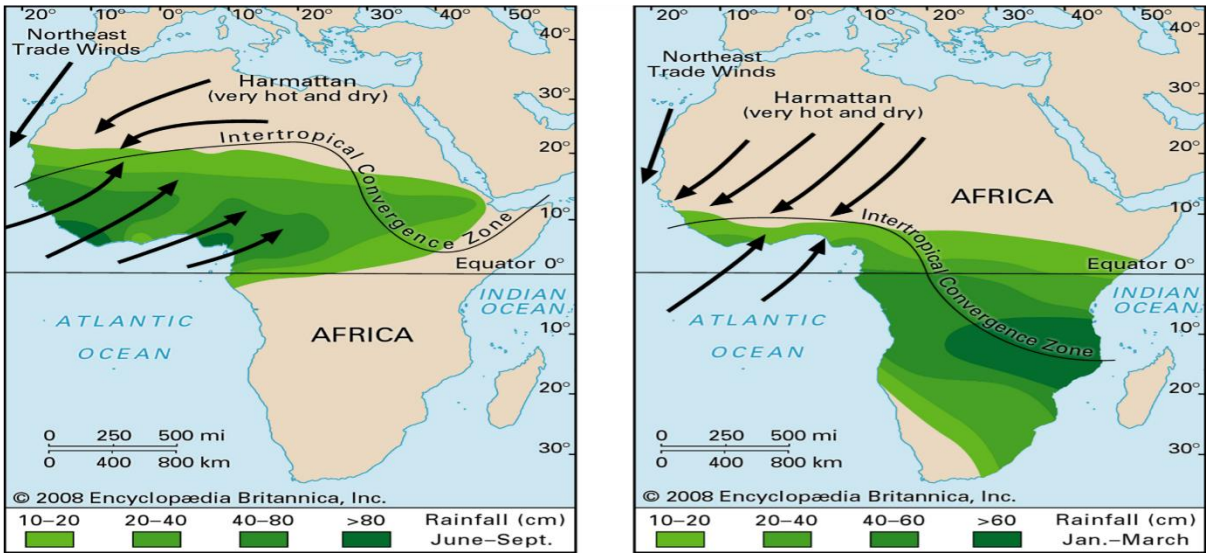


Figure 6: West African monsoon (Encyclopedia Britannica Online Accessed 19 April 2011)

The tropical climate of Liberia is hot and humid throughout the year, with little variation in temperature (mean daytime temperatures: 27^0-32^0C; mean nighttime temperatures: 21^0-24^0C). There are two distinct seasons in Liberia, dry (November-May), and wet (May-October). Annual rainfall amounts are 4000-5000 mm along the coastal belt, declining to 1300 mm at the forest-savanna boundary in the north. The seasonal variation in rainfall has a critical influence on the vegetation. Liberia exhibits a fairly high average relative humidity throughout most of the year, ranging from above 80% along the coastal belt with lower humidity in the interior portion of the country. During the Harmattan season (December-March), the dust-laden winds blown in from the Sahara can reduce the relative humidity to 50% or lower.

4.6.2 Land Cover and Vegetation

Liberia is situated within the Upper Guinean Forest that extends from Guinea at the northwestern extreme to the eastern limit in Cameroon. The Upper Guinean Forest is fragmented, and Liberia is estimated to account for more than half of West Africa's remaining Upper Guinean tropical forest. The climax vegetation over most of Liberia is forest, which covers about 4.39 million hectares or 45 percent of Liberia's land area. The most recent forest

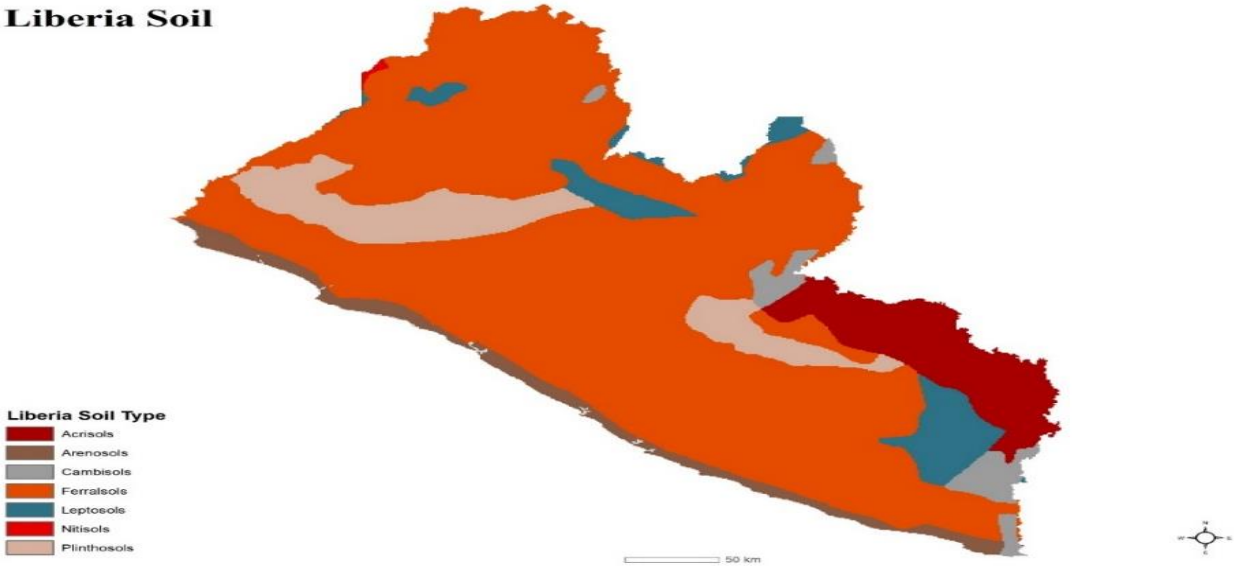
classification (2006) included 2.42 million hectares of dense closed forest, 1.02 million hectares of open dense forest, and 0.95 million hectares of agriculture/degraded forest.

4.6.3 Geology

The geology of Liberia is largely extremely ancient rock formed between 3.5 billion and 541 million years ago in the Archean and the Neoproterozoic with some rocks from the past 145 million years near the coast. The country has rich iron resources as well as some diamonds, gold, and other minerals in ancient sediment formations weathered to higher concentrations by tropical rainfall (USGS, 1972). This chapter presents information on the soil and geology of Liberia with a focus on the mineral potential of Liberia, current mining trends, and potential impact on the environment. Most soils in Liberia are oxisols and ultisols, which contain oxides of aluminum and iron and are very acidic (about pH 3-5). Given these classifications, the most concerning aspect of agriculture and crop production is that the crops planted on these soils lack sufficient plant nutrients, thus leading to inherent low soil fertility. Slash-and-burn agriculture is widely practiced by the majority of the rural population who depend on this activity for their livelihood. However, deforestation is on the increase in Liberia, which increases soil erosion. This is often coupled with poor soil management, with a resulting decline in agricultural productivity. Equally concerning is mining. Mining of iron ore, diamond, and gold has removed vegetation cover substantially and exposes the soil to erosion. Table 15 below provides the various soil types within Liberia.

Table 16: Liberia's Variable Soil Types (EPA, 2007)

Soil	Liberian Classification	Area (%)	Area (ha)	Properties
Lateritic soils or Latosols	Kakata, Suakoko and Voinjama series	75%	8,352,750	Reddish-brown, well-drained, deep profile, good structure, leached 10 cm topsoil, low cation exchange capacity, calcium deficiency, 4-6% organic



				matter, acidic, aluminum toxicity, productive agriculture soils, occurring in rolling hill, used for tree crops production
Lithosols	No data available	17%	1,893,290	High gravel content, low moisture retention, shallow, low humus and mineral content, and occur in hill and rugged terrain, medium agricultural potential
Regosols or coastal sandy soils	Clara town, Sinkor and Freeport series	5%	2,227,400	Well-drained, 60% coarse sand, very low water holding capacity, low humus, and few mineral nutrients, found in the coastal plains, low agricultural potential
Alluvia soils or swamp soils	Gbelle, Ballam, Grayzohn, and Cuttington series	3%	22,740	Waterlogged, grey hydromorphic soils, poorly drained, thick dark layer of loamy-peaty organic material with relatively high humus and mineral contents

Source: https://www.arcgis.com/home/item.html?id=af37c984900c48618b158352fb41da4d

4.6.4 Surfaces Water Resources

Relative to its small population, Liberia has rich water resources, with approximately 15 050 km² (14%) of the total area of Liberia comprising of surface water from rivers, lakes, lagoons, creeks, and streams that drain to the Atlantic coast. The country can be divided into two kinds of river systems: short coastal watercourses (the surface water in Liberia is supplied by six main watersheds with numerous other micro-watersheds or sub-watersheds as part of this system), which drain about 3% of the country; and major river basins, which are drained by rain-fed rivers discharging into the Atlantic Ocean

Figure 7: Liberia Soil Map

Figure 8: Major Rivers and Catchment Areas in Liberia (Source: CI, 2017)

With 16 rivers draining its land, Liberia has one of the highest numbers of rivers in West Africa. The Cavalla River is the longest river in Liberia and is shared with Cote D'Ivoire, whilst the Mano River is shared with Sierra Leone. The Lofa, St John, and St Paul rivers are shared in part with Guinea. Refer to Figure 9 for the major rivers and principal catchment areas of Liberia.

The St. Paul River is the second-longest river, feeding the hydro-electric plant in Mount Coffee. The same river also supplies the majority of the raw water to the capital city of Monrovia. The main watersheds and their characteristics are listed below in Table 17.

Table 17: Major River Basins of Liberia (Source: Liberia Hydrological Survey, 1998)

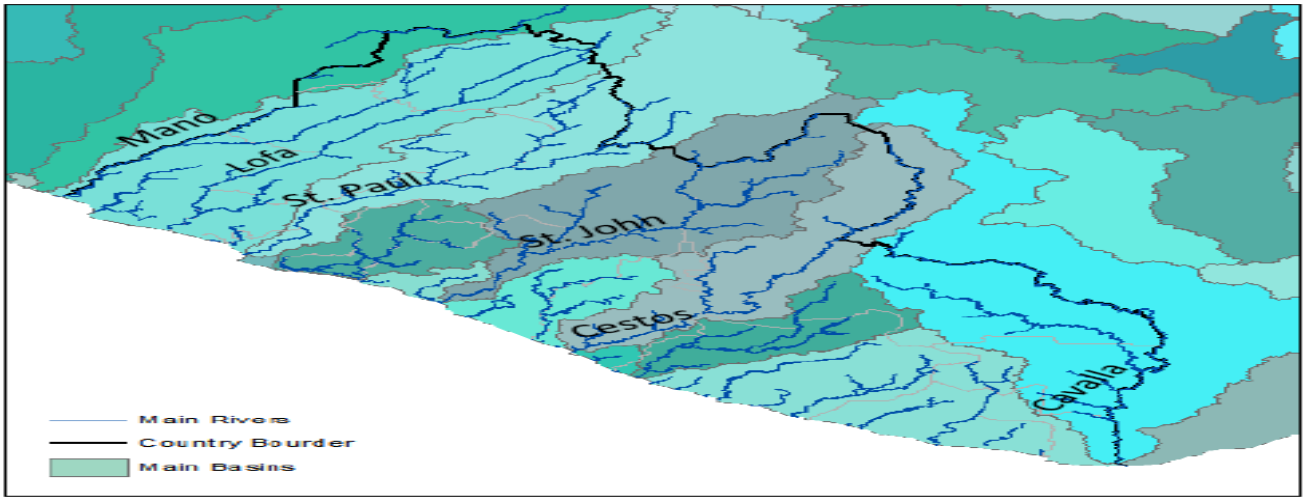


Figure 9: Major Rivers of Liberia

Basin	Area (km^2)	Annual flow (m^3/sec)
Cavalla	13,726	380
Cestos	10,000	60.3
Lofa	9,194	N/A
Mano	6,604	251
St. John	14,762	N/A
St. Paul	12,820	512.3

With the exception of the middle reaches of the Cavalla River, all the largest rivers flow from their headwaters in the southwest direction towards the Atlantic Ocean. The six largest principal basins in Liberia are transboundary river basins, which can be defined as basins shared by two or more riparian states. Liberia only has two major lakes, both of which lie along the Atlantic Coastline. Lake Piso is an oblong tidal lagoon and the largest in Liberia, covering 103 km^2. It is characterized by extensive wetlands and lowland forest vegetation. Lake Shepherd is also a long narrow lagoon with similar vegetation to Lake Piso. Apart from these two lakes along the coastline, a third one, namely Blue Lake, is characterized as a 300 ft deep man-made pond with the waters originating from iron ore mining activities. Today, Blue Lake is also a major tourist attraction in Liberia. Rainfall is the main contributor to the country's surface water bodies, with average annual rainfall, ranges from 4,500 mm at the coast to 2,000 mm being recorded inland (LHS, 2019). Freshwater resources cover 15 050 km^2 (14%) of the total area of Liberia, comprising rivers, lakes, lagoons, creeks, and streams that drain to the Atlantic coast.

4.6.5 Forest Ecosystem

Liberia is home to 40% of West Africa's forest cover, which is used for food (Non-Timber Forest Products (NTFPs) and wildlife), fuelwood, medicinal products, and energy. Rainfall projections are too inconclusive to predict with certainty if climate change will significantly impact tropical forests. However, substantial evidence shows that increased duration and intensity of rainfall leads to slower tree growth and, in more severe cases, rotting because of waterlogged tree roots. Increased runoff due to heavy rain, combined with root loss, may cause greater siltation of surrounding reservoirs and rivers. Rising temperatures have also created environments where pests, including the pine caterpillar *(Dendrolmus punctatu)*, can thrive.

4.6.6 Wetlands

In Liberia, wetlands are typically characterized by a high diversity of plant and animal species, supporting both terrestrial and aquatic vegetation and providing important habitats for many animals, including fish species. They play an important role in the hydrological cycle by providing important ecosystem services and acting as buffers of intense meteorological events. Resources gained from wetlands are vital to the livelihood of people living in the surrounding areas. Wetlands

also consist of large stands of mangroves which support substantial fish populations. The country's landscape and biodiversity, including that of its wetlands, have a great potential for attracting tourists. Wetlands are under significant pressure from human activities. The latter include mining of sand for construction, inadequate provision of basic water and sanitation services (leading to these wetlands being used as sanitation, washing and ablution areas), waste, large-scale pollution and chemicals emanating from oil refineries, paint factories and rubber plants. Wetlands are, furthermore, under threat from clearing for firewood and farming. The Country is endowed with some interesting wetlands of international significance. Some of these include, but are not limited to, the following Ramsar sites:

Wetland	Location	Description
Lake Piso Multiple-Use Reserve Coastal Lacustrine	Grand Capemount County	County not affected by the proposed project scope. Therefore, there is no direct impact of the proposed project on the wetland
Marshall Inland Riverine	Margibi County	County not affected by the proposed project scope. Therefore, there is no direct impact of the proposed project on the wetland
Mesurado Coastal Area	Montserrado County	Wetland not in proximity to the proposed project area
Gbedin Inland Swamp	Nimba County	County not affected by the proposed project scope. Therefore, there is no direct impact of the proposed project on the wetland
Kpatawee Inland Riverine-	Bong County	County not affected by the proposed project scope. Therefore, there is no direct impact of the proposed project on the wetland

4.6.7 Proposed Project involvement with declared and proposed Protected Areas

Liberia has a number of proposed and protected areas making up 4.05% of terrestrial land cover and 0.1% of total marine cover. Of the 19 reserves, 10 are national parks, 2 nature reserves and 1 national forest park, and multiple sustainable use is reserved respectively. In addition, 5 of these are Ramsar sites; wetlands of international importance. The table below considers some of the country's national parks and important wetland areas.

It is worth mentioning that findings from the study for the development of this ESMF revealed that, the proposed project areas do not fall in any of these proposed protected sites or wetlands of national and international significance.

Table 18: Protected/Proposed Protected Areas in Liberia

Protected/Proposed protected Areas	Designation	Status year	Management authority	Area
Gola Forest National Park	National Park	2016 - Gazetted	Department of Forest Conservation; Forest Development Authority	88 130 ha
East Nimba Nature Reserve	Nature Reserve	2003 - Gazetted	Department of Forest Conservation; Forest Development Authority	13 569 ha
Sapo National Park	National Park	1983 - Gazetted	Department of Forest Conservation; Forest Development Authority	184 406 ha
Cestos Senkwehn National Park	National Park	2003 – Proposed	Department of Forest Conservation; Forest Development Authority	80 348 ha
Kpatawee Wetlands	Ramsar Site	2006 - Designated	Not reported	8.35 km^2
Kpo Mountains	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	83 709 ha
Lake Piso Multiple Sustainable Use Reserve	Multiple Sustainable Use Reserve	2011 - Gazetted	Department of Forest Conservation; Forest Development Authority	97 975 ha
Lake Piso	Ramsar Site, Wetland of International Importance	2003 - Designated	Not Reported	76 091 ha
Marshall Wetlands	Ramsar Site, Wetland of International Importance	2006 - Proposed	Not Reported	23 813 ha
Nimba West	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	10 482 ha
Grand Kru-River Gee	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	135 100 ha
Margibi Mangrove National Park	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	23 813 ha
Foya National Park	National Park	2003 – Proposed	Department of Forest Conservation; Forest Development Authority	164 628 ha
Bong Mountain National Park	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	24 813 ha
Mesurado Wetland	Ramsar Site; Wetland of International Importance	2006 – Designated	Not Reported	6 760 ha

Wonegizi Nature Reserve	Nature Reserve	2016 - Gazetted	Department of Forest Conservation; Forest Development Authority	37 979 ha
Grebo National Forest Park	National Forest Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	97 136 ha
Gbi National Park	National Park	2003 - Proposed	Department of Forest Conservation; Forest Development Authority	88 409 ha
Gbedin Wetlands	Ramsar Site; Wetland of International Importance	2006 – Designated	Not Reported	25 ha

4.7 AGRICULTURAL PRACTICES IN LIBERIA

4.7.1 Overview

Agriculture is the main livelihood across Liberia (MoA, 2007; 2008). Basically, the landscapes of Liberia range from coastal lowlands and plains to rolling hills and plateaus further inland and mountains rising to a maximum height of 1,380 m around the north and northeast of the country (CILSS, 2016). Amidst these landscapes, up to five agro-ecologies have been identified and described by the Government of Liberia, based on their potentials for agricultural use (CAAS-Lib, 2007ab). These five agro-ecologies include coastal beach plains, flood plains, tidal swamps, valley swamps, and hills.

Table 19: Descriptions of the Various Agro-Ecologies of Liberia (CAAS-Lib, 2007ab)

Agro-ecology	Drainage	Recommendation crops	Production Constraints	Recommended Improvement Measures
Costal beach plains	Poor to well-drained	Unsuitable for most crops except cassava, coconut, oil palm,	Low fertility, low organic matter	Fertility management
Tidal swamps	Poor	Intensive lowland rice	High tide destroys the crop	Adequate drainage
Valley swamps	Poor	Lowland rice	Waterlogging, low nutrients, low organic matter	Adequate drainage, fertility management

Low and high hills	Well-drained; foot slopes poorly drained	Upland rice, vegetables, cassava, tree crops	Low fertility, erosion	Fertility management, adequate fallow

Thirty percent of the land area is arable, while 2.5% is pastureland. Most of the upland soils are lateritic, acidic, infertile, and low in humus. The swamp soils are comparatively better in nutrients and humus but are waterlogged from May to October.

It is estimated that less than 10% of the 4.6 million hectares of arable land in Liberia are cultivated. In fact, most rural communities depend wholly on agriculture. More than 70% of the population is rural and depends principally on biological resources for livelihoods. Agriculture plays an important role in Liberia's economy, which is also evident by the number of farming fields across the countryside, with farm households accounting for at least 80% of the population in those parts of Liberia (CAAS-Lib, 2007b), and those engaged in agricultural activities accounting for 65% of the economically active population of the country in 2014 (FAO, 2005). About 46% of the total land area of 9.8 million hectares is available for agriculture (FAO, 2005). Most agricultural activities are carried out on smallholdings, with staple food crops produced mainly for subsistence. The food crops are produced by traditional methods, which are characterized by bush fallowing or shifting cultivation. Vegetables and tree crops are produced mainly for commercialization. The latter traditional/subsistence system of production (the shifting cultivation or slash-and-burn method) is characterized by low productivity, long fallow periods of 6-10 years, and relatively short cultivation periods of 1 or 2 years.

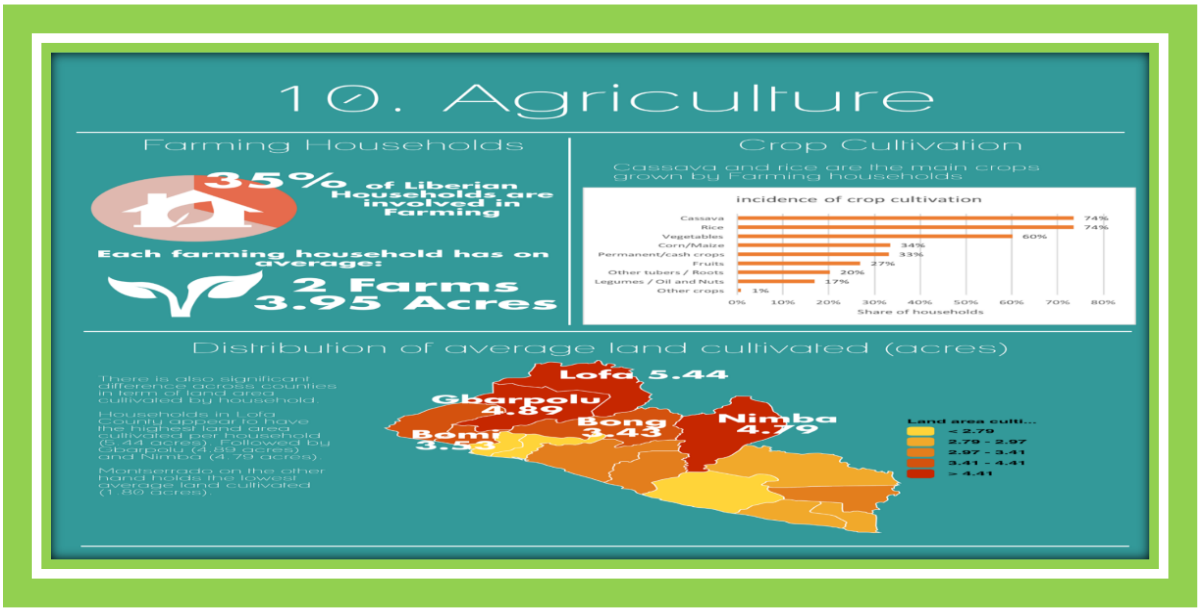


Figure 10: Agriculture by Farming Households, Crops Cultivated, and Distribution of Average Land Cultivated (Source: LISGIS/HIES 2014 & 2016).

Table 20: Land Area Cultivated by County in Hectares (Source: LISGIS/HIES, 2016)

County	Male-headed households	Female-headed Households	All households	Land cultivated per capita
Bomi	1.5	1.3	1.4	0.4
Bong	1.5	1.1	1.4	0.4
Grand Bassa	1.4	1.2	1.4	0.4
Grand Cape Mount	1.8	1.4	1.8	0.5
Grand Gedeh	1.2	1.1	1.2	0.3
Grand Kru	1.2	1.0	1.2	0.3
Lofa	2.4	1.6	2.2	0.5
Margibi	1.2	0.8	1.1	0.3
Maryland	1.2	0.9	1.1	0.2
Montserrado	0.7	0.7	0.7	0.2
Nimba	2.1	1.5	1.9	0.5
Rivercess	1.4	0.8	1.3	0.3
Sinoe	1.1	0.9	1.1	0.3
River Gee	1.3	1.1	1.2	0.3
Gbarpolu	2.1	1.6	2.0	0.5
National	1.7	1.3	1.6	0.4

There is also a significant difference across counties in terms of land area cultivated, as shown in Table 19. Households in Lofa County appear to have the largest land area cultivated per household. Moreover, male-headed households cultivate more areas of land than female-headed households across counties. Mostly, agricultural crop production in Liberia is dependent on the rain or is, in most instances, rain-fed, particularly in the uplands. The lowlands, on the other hand, support short duration crops, especially during the dry season. Crops that have demonstrated potential for growth mainly include:

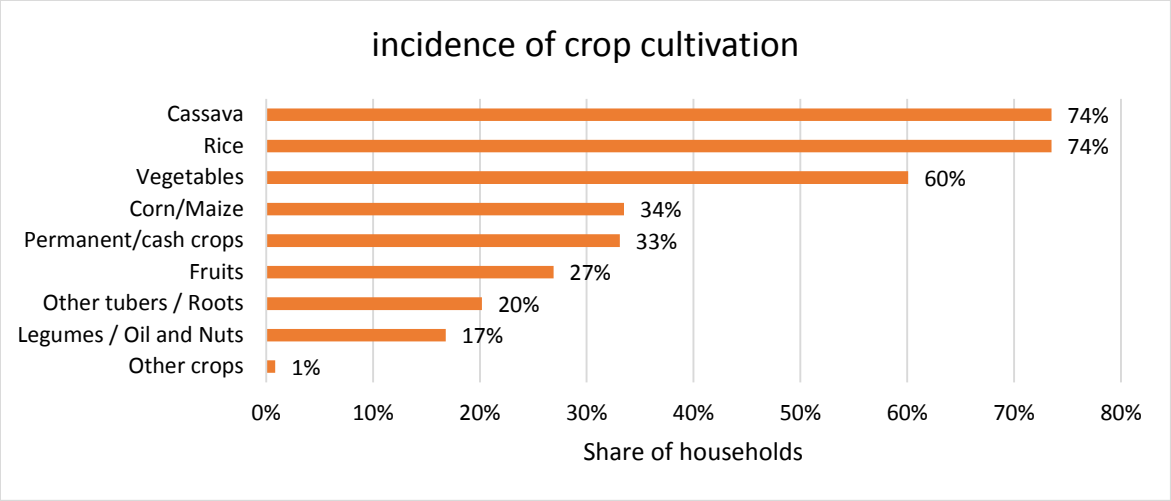


Figure 11: Incidence of Crop Cultivation (Source: LISGIS/HIES, 2016)

There is a prevalence of smallholder farmers in Liberia. Households in Liberia own an average of 2 farms. The average size of land cultivated per household is 1.6 ha. The distribution of land cultivated illustrated in Table 20 shows the prevalence of smallholder farmers in the country. Less than 3% of farming households cultivate more than 5 ha of land; even in the top land quintile, average land cultivation is smaller than 4 ha.

Table 21: Average Land Area (ha) Cultivated by Quintiles (Source: LISGIS/HIES 2016)

Quintiles of land cultivated	Household land area cultivated			Household land area cultivated per capita		Number of observations[14]
	Mean	SD		Mean	SD	
Quintile 1 (Smallest farm)	0.34	0.17		0.11	0.10	826
Quintile 2	0.83	0.13		0.23	0.15	1005
Quintile 3	1.25	0.12		0.34	0.24	809
Quintile 4	1.88	0.25		0.51	0.32	772
Quintile 5 (Largest farm)	3.60	1.07		0.84	0.58	636
Total	1.58	1.23		0.40	0.41	4048

Cassava and rice are the main crops grown by farming households (they account for 74% of households' crop portfolio each). Vegetables growing are also important (60% of the crop

[14] The figures in the table are weighted. However, the number of observations reflect the number of farming households in the sample.

portfolio). The share of households growing corn is 34%. Permanent cash crops are grown by 33% of households while only 27% of households grow fruits (banana, papaw/papaya, pineapple, plantain, etc.) and 20% grow other tuber or roots (eddoes, ginger, Irish potatoes, onions, sweet potatoes and yams). These figures vary minimally across. Rice and cassava are the main crops, although as many as 8-10 different other crops can be planted in a mixed cropping system. Cassava yields are estimated at 5.28 metric ton per hectare.

Table 22: Estimated Production of Cassava (Based on Farmer Estimates) (Source: LISGIS, 2016)

County	Number of farming households	Average area per household (Ha)	Average yield/ha (MT)	Average yield/ household (MT)	Production (MT)
Bomi	12 498	0.39	5.68	2.23	27 916
Bong	53 885	0.39	5.68	2.23	120 361
Grand Bassa	22 294	0.39	5.68	2.23	49 797
Grand Cape Mount	23 444	0.39	5.68	2.23	52 366
Grand Gedeh	8 956	0.39	5.68	2.23	20 005
Grand Kru	7 725	0.39	5.68	2.23	17 255
Lofa	38 883	0.39	5.68	2.23	86 852
Margibi	15 668	0.39	5.68	2.23	34 997
Maryland	5 677	0.39	5.68	2.23	12 681
Montserrado	17 061	0.39	5.68	2.23	38 109
Nimba	74 658	0.39	5.68	2.23	166 761
Rivercess	8 491	0.39	5.68	2.23	18 966
Sinoe	9 874	0.39	5.68	2.23	22 055
River Gee	5 741	0.39	5.68	2.23	12 823
Gbarpolu	7 459	0.39	5.68	2.23	16 661
Total	**312 314**				**697 604**

Two species of rice are grown, an Asian rice species (*Oryza sativa*) and an African species (*O. glaberrima*), which has become rare. Other species of rice include 22 aquatic varieties (19 exotic and three indigenous) and 32 terrestrial (25 exotic and seven indigenous). Nearly all the exotic varieties were brought in by the West African Rice Development Association (WARDA).

The next table provides the trends of rice and cassava grown in Liberia, whilst the figure illustrates the trends of rice and cassava production in metric tons.

Table 23: Trends of Rice and Cassava Hectares, Yields and Production 2012 (Source: LISGIS/HIES, 2016)

Description	Unit	Year					Percent Change	
		2012	2011	2010	2009	2008	Average (010-011)	Average (09-08)
PRODUCTION								
Paddy Rice	MT	297,190	290,650	296,090	293,000	279,000	1.3	3.9
Fresh Cassava	MT	485,190	489,270	493,000	495,300	496,290	-1.2	-2.1
Total	**MT**	**782,380**	**779,920**	**789,090**	**788,300**	**775,290**	**-0.3**	**0.1**
AREA HARVESTED								
Rice	HA.	246,380	238,780	251,230	247,580	222,760	0.6	4.8
Cassava	HA,	61,050	61,040	61,470	63,210	57,360	-0.3	1.3
Total	**HA.**	**307,430**	**299,820**	**312,700**	**310,790**	**280,120**	**0.4**	**4.1**
Yield per ha								
Rice	KG	1,206	1,217	1,179	1,183	1,253	0.7	-1.0
Cassava	KG	7,947	8,016	8,020	7,835	8,652	-0.9	-3.6
FARMS								
Rice	NUM	**241,750**	242,800	241,310	245,840	231,650	-0.1	1.3
Cassava	NUM	**120,710**	122,520	119,370	120,560	117,730	-0.2	1.3

Total		**362,460**	**365,320**	**360,680**	**366,400**	**349,380**	**-0.1**	**1.3**

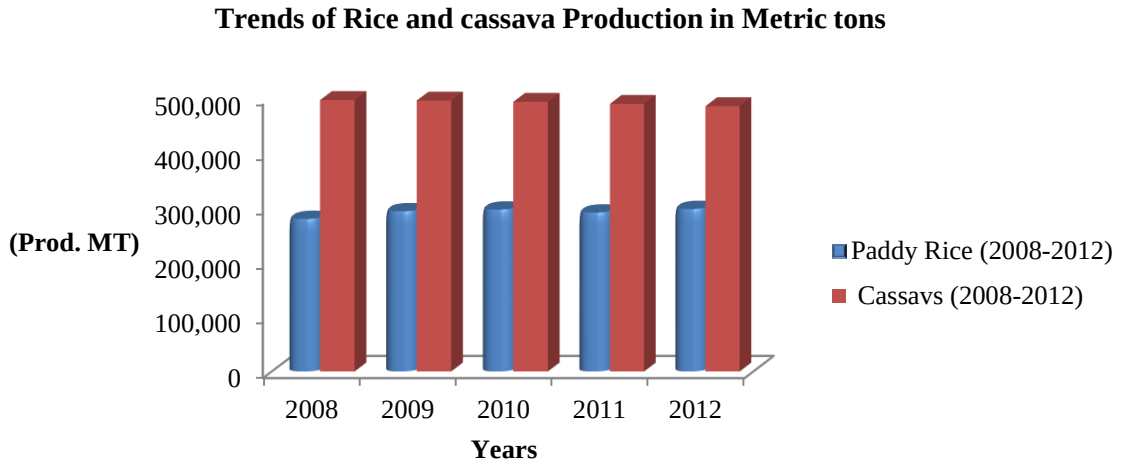


Figure 12: Trends of Rice and Cassava Production in Metric Tons (Source: LISGIS/HIES, 2016)

4.7.2 Agriculture and Climate Change

Agriculture has been an important source of economic growth since the collapse of the formal economy during the civil war. The sector contributes 35.2% of GDP and provides livelihoods to 67% of the population. Rice is the country's primary staple crop, cultivated by 74% of farmers. Rice is highly sensitive to increased humidity, temperatures, and intense rainfall and to the pests that thrive in these conditions.

4.8 CHARACTERISTICS OF ROAD NETWORK IN THE BENEFICIARY COUNTIES

Agriculture is an important economic sector in all the beneficiary counties, with typical crop production of rice, cassava, and vegetable. The road network from beneficiary communities to market centers are highly deteriorated, causing major bottlenecks to the transport of agricultural outputs to markets or crop processing areas. Rehabilitation or construction works from the proposed sub-projects are expected to have a significant impact in the targeted areas. Investments would be concentrated in the areas of higher agricultural production, building on the strategic priorities of LACRA, with due attention paid to connectivity to the rest of the road network and or marketing and processing centers. Such a critical mass of infrastructure investments is needed in order to overcome possible threshold effects.

Figure 13: Farm to market road, Dewain Town, Grand Bassa County

CHAPTER FIVE: POTENTIAL IMPACTS AND RISKS - PROPOSED MITIGATION OF SUB-PROJECTS

5.0 INTRODUCTION

Given that at this stage of the project cycle, where in most of the specific locations of project activities have not yet been fully identified, this Chapter will describe a more conceptual and generic scenario to identify the potential impacts resulting from the various sub-project activities; it will describe the impact potential and propose mitigation and management measures to be put in place to sustainably implement the Project. Beneficial impacts are also identified. The following sections will describe the different types of sub-projects that will be subjected to ESIA/ESMP.

5.1 PRINCIPLES AND METHODS TO EVALUATE SIGNIFICANCE OF POTENTIAL IMPACTS

The approach to be employed in evaluating the significance of the potential impacts of the sub-projects will take into consideration the characteristics of the impacts indicated in Table 23. Using qualitative and quantitative data from the literature review, field visitation, the views from the consultations, and particularly subjective analyses using expert knowledge and experience, the following levels of significance will be employed:

- **(+2) *High positive significance*:** Impacts that are highly likely to promote sustainable development by creating changes that will improve the environment
- **(+1) *Low positive significance*:** Implies that there are some opportunities, possibilities, and alternatives for benefits to be gained as a result of the change caused by the impact
- **(0) *insignificant positive or negative impact*:** No discernible impact or interference with the identified environmental parameters. Project activity is not likely to create any beneficial or problematic change
- **(-1) *Low negative significance*:** Limited adverse impacts caused by Project activities and not using sensitive resources. The prevention of such negative effects is also easily possible
- **(-2) *High negative significance*:** High vulnerability and sensitivity, irreversible impact, and outcome of the impact affecting a wider area or population, etc.

Table 24: Factors used in Considering the Significance of Impacts

Impact receptors	Characteristics of the population such as the distribution of women, youth, and the elderly; economic activities including dependence on agricultural production
	Habits, distribution, and protection status of animals and wildlife
	Types of vegetation, land cover, and land use including wetlands, forest, historical or cultural sites
	Roads, underground water infrastructure, or other infrastructure that may be affected
	Receiving and response capacity of the receptors from similar projects or past incidents such as forest clearing, social conflict, air and soil pollution, etc.

Nature of impacts	Direct or induced impacts on the receptor; link with non-project activities or other projects
	Timing: immediate or long-term effect; duration of the impact
	Magnitude in relation to the total area to be obtained for the project; farmland, animals or people; geographical extent, households, or towns/villages
	Probability of the impact occurring
	Possibility of prevention or other mitigation measures; irreversibility of impact
	Cumulative impacts that only become an issue in combination

The various components of the subprojects environment likely to be impacted by project activities and the associated impact indicators are identified and are listed in Table 25 below. Likewise, the sources of probable impacts from the various stages of subproject are also outlined in Table 25

Table 25: Impactable Components and Associated Impact Indicators

S/N	Impactable Components of the Environment	Impact Indicators
1.	Climate	Humidity, temperature, rainfall, wind speed, and direction
2.	Air	Particulates, NOx, SOx, CO, H_2S
3.	Surface Water	Dissolved/suspended Solids, Nutrients, Heavy metals, and pH.
4.	Hydrology	Drainage/Discharge, Hydrologic Balance, Sedimentation, Flooding.
5.	Soil/Land	Erosion, Fertility/Farming, Hunting, Recreation.
6.	Ecology	Diversity and abundance of terrestrial flora & fauna, habitats quality
7.	Archaeological Sites	Cultural relics, Cultural Sites.
8.	Noise & Vibration	Daytime disturbance, Hearing loss, Communication Interference, Night time disturbance.
9.	Socio-Economic/Health	Population, Social Structure, GBV, Labor Influx Income, Settlement pattern, Employment, Agriculture, Health, Safety, and Security.
10.	Wildlife & Forestry	Habitat fragmentation, accessibility to conservation areas, loss of economic trees, Forced migration of species, endangered species.

5.2 POTENTIAL CUMULATIVE IMPACTS

Cumulative impacts are those that are only significant when in combination, e.g., the impact of the proposed project on a receptor may be small, but when combined with the small impact of another project within its sphere of influence, these effects together may cause significant impacts that would not have necessarily been relevant individually. It could well be that the impact is as a result of natural phenomena. The distribution of such impacts may be local, regional, or global.

Therefore, the potential cumulative impacts of this project should be analyzed as its implementation may exacerbate the impact of another project within its sphere of influence (or vice versa) on the same receptor. Thus, consideration of cumulative impacts may include combined effects of:

- one activity on existing/previously affected parameter;
- many activities of the same project on various parameters/sites;
- many projects impacting the same parameter; and
- many projects impacting multiple parameters.

Summary of Cumulative Impacts

Considering previous projects, such as SAPEC in some of the proposed project areas, and the analysis of potential impacts from site visit for the development of this ESMF, the proposed project would result in significant and unavoidable cumulative impacts in the following major areas;

- Land use and Agriculture- the proposed project by its nature (i.e farming of Rice, Cassava and Vegetables) would result in conversion of existing land. Providing adequate mitigation is place no significant adverse cumulative impacts are anticipated.
- Drainage – the proposed project will result in the alteration of drainage patterns in its area of influence. Providing adequate mitigation is in place no significant adverse cumulative impacts are anticipated.
- Water Quality – there will be impact on water quality due to construction and rehabilitation of dams for irrigation purpose. Providing adequate mitigation is in place no significant adverse cumulative impacts are anticipated.
- Biological Resources – the proposed project would result to habitat fragmentation which will affect fauna and flora species in the areas. Providing adequate mitigation is place, minimum adverse cumulative impacts are anticipated.
- Geology and Soils - Providing adequate mitigation is place, no significant adverse cumulative impacts are anticipated.

The proposed project would result in less than significant cumulative impact after implementatation of mitigation measures for the balance of the environmental issues evaluated.

5.3 IDENTIFICATION AND EVALUATION OF POTENTIAL IMPACTS

In order to ensure that the limited resources are properly used to mitigate (prevent, reduce, repair, or compensate) the potential impacts, it is important to identify which impacts are more significant for adequate consideration. The method described in Section 6.2 above will be used to evaluate the significance of the identified likely impacts, as outlined in Table 26.

The impacts will be considered for the different phases of the project, i.e., design phase, the construction phase of the various infrastructures and roads, irrigation scheme, land preparation, operational phase, including maintenance activities, and decommissioning phase. With regards to the decommissioning phase, the ESMF will consider clearance of any camp or informal base used for the storage of materials or equipment, especially in the civil works (such as the feeder roads

and construction of other infrastructure), and closure of any borrow pit specifically used for the SADFONS Project activities.

5.4 POTENTIAL POSITIVE IMPACTS

With effective and efficient project implementation, the following benefits will be expected from SADFONS:

- There will be increased production and productivity of the smallholder farmer due to the adoption of improved and appropriate farming practices;
- Development of agro dealer networks through the SADFONS project will assist women farmers; support establishment of a facility for on-farm mechanization; service schemes for input distribution (improved seeds, fertilizer, and other agro-chemical) to enhance timely availability;
- Establishment of farmers field school to improve the capacity of smallholder farmers; and
- Civil works, such as the construction of irrigation schemes, though minimal, will create a number of skilled and unskilled jobs in the proposed project areas. For example, land clearing and preparation, and construction of accompanying structures. Employment resulting from Project implementation will create social benefits and improved standards of living, and the income will enhance the local community economy

Table 26: Evaluation of Potential Environmental and Social Impacts

PARAMETER	SOURCE OF POTENTIAL IMPACT	POTENTIAL IMPACT (positive or negative)	SIGNIFICANCE OF POTENTIAL IMPACTS DURING DIFFERENT PHASES		
			Construction	Operation	Decommissioning
PHYSICAL					
Surface Water	Activities relating to the irrigation rice fields near water bodies; bulking and storage facilities	Pollution of surface water quality of the immediate vicinity of the riverbanks can be affected	-2	-1	-2
Ground Water	for the supply of water to farmland, especially during the dry season	Over extraction could lead to groundwater pollution through salt intrusion.	-1	-1	0
Air Quality / Climate	Digging and excavations; use of heavy machinery and vehicles; quarrying	Dust, exhaust, and other gaseous emissions	-1	0	-1
Geology / Soils	Use of heavy machinery and vehicles during works; improper waste management; quarrying	Soil erosion, compaction, and pollution	-1	0	-1
Noise / Vibration	Use of heavy machinery and vehicles during works	Noise and vibration nuisance	-1	0	-1
Landscape / Aesthetics	Construction works, post– harvest activities, etc. generate waste	Unsightly structures / waste dumps	-1	-1	-1
BIOLOGICAL					
Aquatic Ecosystem	Activities relating to the storage, and post-harvest infrastructure near water bodies	Change in water quality may lead to killing, disturbance, destruction of habitat, and effect on natural propagation of aquatic flora and fauna	-2	-1	-2
SOCIOECONOMIC					
Public Health & Safety	During all construction, maintenance, and decommissioning activities where the public risk contact with hazards	Impact of accidents such as loss of life or disability, interruption of traffic, waste, dust, and noise, etc.	-2	**-1**	-1

Occupational Health & Safety	During all construction, maintenance, and decommissioning activities where workers are at risk	Impact of accidents such as loss of life or disability, dust, work-related stress, handling large and heavy loads, etc.	-2	-1	-1
Labor-related issues	Influx of imported workers	Potential spread of imported diseases including sexually transmitted illnesses; introduction of social vices	-1	0	-1
		Gender-based violence and violence against children, etc.	-1	-1	-1
	Employment of children	Risk of child exploitation and abuse	-1	-1	-1
Land Use / Land Ownership	No activity	No impact	0	0	0
Income	Employment of various workers during Project implementation; long-term and continuous use of the available infrastructure	Enhancing skills and livelihoods; increased income and food security of project beneficiary communities; increase in household income from improved production of crops, improvement of various business activities	+2	+2	+1
Community Stability	During siting and exploitation of infrastructure	Conflict, complaints, reduced social cohesion	-2	0	0
Vulnerable groups	Involvement of children during project implementation; non-protected camps and work sites The influx of guest workers to communities	Risk of gender-based violence and sexual exploitation and abuse such as fear, anxiety, and reduced confidence Risk of all forms of violence against children including health impacts, fear, and anxiety	-2	0	-2

***Matrix Key**: 0 (discernable impact / insignificant impact); +1 (low positive significance); +2 (high positive significance): -2 (high negative significance); -1 (low negative significance*

5.5 POTENTIAL NEGATIVE ENVIRONMENTAL IMPACTS AND MEASURES

5.5.1 INTRODUCTION

SADFONS rice, cassava, and vegetable production schemes (1,000 farmers -20% youth and 40odiewomen) will partly be implemented through irrigation. This will include the use of boreholes to irrigate the farms, construction of new dams where necessary, rehabilitation of existing dams, and by impounding rice perimeters. During construction, equipment such as a heavy mobile plant (e.g., graders, bulldozers, excavators) will be used where green fields will be converted into rice growing perimeters or cassava vegetable farmland.

In operation, the activities will include the abstraction of water from a local water source (in rice irrigation, this will be mainly from nearby water bodies as is usual with most rice irrigation projects); water storage in containment areas such as water tanks or reservoirs, distribution of water to and within the rice fields through canals, and to vegetable and cassava farms through reticulation pipes; and control and treatment of water runoff from these areas.

During decommissioning, roads that were used during the construction and operational stages of the Project to access the rice perimeters, and cassava and vegetable farms should be decommissioned and rehabilitated in accordance with a site-specific closure plan developed according to good international practice. The decommissioning phase will include site clearance, removal of all equipment, and appropriate disposal of waste materials, soil ripping, and re-grading where necessary.

5.5.2 Impacts associated with the use of agro-chemicals and measures

Increased food production for local farmers is central to the development and implementation of the proposed project, and agrochemicals (mainly fertilizers and pesticides) will be used to achieve higher yields per unit area. However, there are environmental concerns associated with the use of agrochemicals, including undesirable soil and water contamination, acidification of soils, human health risks, pest resistance, damage to non-target organisms, and secondary pest problems.

The use of agrochemicals may also result in unacceptable toxic residues on agricultural products and unnecessary financial burdens because of over application. In this regard, careful selection of the type of agrochemicals and management of their use (timing, dosage, mode of application, etc.) is required to reduce to acceptable levels the environmental risks they pose while providing the needed benefits for increased production with lower financial and health risk costs. The Project should be explicit about the pesticides it proposes; unregistered, restricted-use, or experimental-use pesticides should be avoided unless their use has been reviewed and approved by the Food and Agriculture Organization (FAO). It is illegal to import, manufacture, formulate, offer, hold on stock, sell, use, or advertise the members of a banned list of chemicals (attached as Annex 6a).

5.5.3 Impacts associated with climate change and measures

Various environmental tools will be used to identify challenges that will affect the Project. Some of the tools will include the Climate Screening System (CSS) and the Adaptation Review and Evaluation Procedures (AREP). This will help identify appropriate adaptation actions, including relevant activities for each subproject, as well as the capacity building needs for farmers. Following the CSS procedure, the Project will be classified; usually, this type of project is classified as Category II, indicating that it will be affected by climate change impacts.

Climate change impacts that could be experienced in the course of Project implementation will include erratic rainfall patterns, prolonged dry spells, heat waves, and flooding, which cause infrastructure damage, crop failure, and ecosystem desiccation through increased salinization in freshwater wetland and mangrove ecosystems. Irrigation demand will increase in the face of decreasing rainfall and increased evapotranspiration, placing additional pressure on irrigation systems, especially where they involve use of pumping machines.

On the other hand, soil erosion from increased rainfall intensity, particularly from upland areas into the lowlands, will affect watershed sustainability and lead to sedimentation in reservoirs, with impacts on the operation of facilities. Some other impacts could include inundation of tidal irrigated fields mainly from three sources; increase in run-off from the upland into irrigated fields; increase in water level and volume from the river into the irrigated fields, and rainwater falling directly into the fields. Thus, inundation could lead to loss of production in the rice perimeters.

The Project will ensure that the crops and infrastructure are climates resilient by integrating into its design climate change resilience initiatives focusing on reducing the inundation of rice fields. The initiatives will involve changes in the engineering designs of some of the tidal perimeters to control run-off from the upland into the rice fields and to release the overflow from the water bodies and direct rainfall away from the rice fields. The engineering designs will also protect ecosystems at risk from other natural or anthropogenic hazards.

In addition, the Project will encourage farmers to adhere strictly to the farming calendar to mitigate the inundation of crops; adopt improved farming technologies and facilities which will minimize post-harvest losses; include capacity building for farmers to make them responsive and able to analyze risks properly. By improving access roads, the Project will reduce transportation costs and thus improve farmers' incomes to reduce poverty and enhance the resilience of the farmers.

5.6 POTENTIAL RISKS ASSOCIATED WITH VARIOUS SUB-PROJECTS COMPONENTS AND MITIGATION MEASURES

Subsequently, Consultants who will develop sub-project ESIA/ESMPs will use the generic scenarios expressed in the ESMF to develop greater detail mitigation and monitoring measures of the respective subprojects. Typically, the implementation of SADFONS will involve investments in the following types of activities, and consequently, sub-projects:

- Agriculture and land development (including mechanization, land clearing, and burning, irrigation schemes in rice, cassava, and vegetable farming; and inputs (fertilizer and other agrochemicals),
- Civil works (including construction of post-harvest infrastructure- construction of warehouses, refurbishing of existing warehouses, bulking and storage facilities for rice and cassava; construction of rice and cassava mills and facility for fruit and vegetable cleaning, sorting, grading, packaging, and storage built.

Please note that the Policy and Regulatory Framework specified in Chapter 3 of the ESMF will guide the development of the report, and the impact assessment is based on the Project's adherence to these requirements.

5.6.1 Component 1: Support to enhancing smallholder agricultural productivity and market access

5.6.1.1 Sub-Component 1.1. – Strengthening of Sustainable Crop Production and Intensification

The activities linked to this sub project concern:

- Support to land development and land preparation for rice cultivation in lowland areas
- Support to agricultural mechanization service centers
- Expansion/Establishment of farmer e-registry for delivery of extension and advisory services.

Positive Impacts

There are various positive impacts from strengthening of sustainable crop production and intensification of arable farming, ranging from climate change mitigation (i.e. improved soil carbon emissions as a result of reduced GHG emissions from nitrification); increased efficiency in fertilizer and pesticides use possibly contributing to reduced nitrification and human health impacts or the application of crop cover contributing to lower soil erosion and improved biodiversity; transferring of know-how, innovation, investments in latest technologies); creation of social infrastructure that builds trust among individuals and agencies

Risks and Negative impacts

Land clearance and reclamation for cultivation - Whenever new or rehabilitated lands are brought into agricultural production, there are major impacts, and some of these are irreversible: loss of the natural resource cleared or reclaimed; soil erosion; declining soil productivity.

The proposed project would involve irrigation works for supply of water to farmlands and agriculture value chains (e.g. construction of processing facilities for cassava, local level value addition, limited use of agro-chemicals,) are likely to have negative environmental and social impacts, which however are expected to be small scale, site specific and largely reversible.

While nitrogen (N), phosphorus (P) and potassium (K) fertilization replenishes some of the nutrients removed by intensive production, many mineral nutrients are inadequately replenished, with negative implications for soil health and nutritional security.

There is also the likelihood that intensification can lead to some non-agricultural land to cultivation, and negative impacts include increased greenhouse gas (GHG) emissions from soils and the removal of carbon sinks (vegetation biomass); and increased use of N fertilizer and the loss of provisioning services to land-based communities who depend on non-agricultural landscapes for food, medicine, fodder, fuel, fibre, cultural identity and spiritual value. Non-agricultural landscapes also support agriculture. Thus, the expansion of agricultural activity into previously uncultivated landscapes could have substantial detrimental outcomes.

Mitigation measures to manage these risks and negative impacts

- To design and manage whole agricultural landscapes better (for both food and environmental services);
- Integrated management and monitoring of soil quality;
- Adequate land use planning in consultation with host communities based on free, prior and informed consent regarding land conversion;
- Promotion of agroforestry practices in order to retain carbon sinks;
- Capacity building for knowledge and skills transfer; and
- The Environmental Management Plan for the development of the ESIA must be able to suggest mitigation measures including soil conservation and sustainable land management practices intended to maintain productivity; minimize environmental damage from loss of vegetative cover, increased runoff, soil erosion and siltation.

5.6.1.2 Sub-Component 1.2 - Value Addition and Market Linkages

The activities linked to this sub project concern:

- Improving access to market information - Market information system (linked to the e-registry)
- Supporting micro-hubs for primary processing of cassava;
- Improving storage and reducing harvest and post-harvest losses (Aggregation centres)
- Training of producers, haulers, aggregators and marketers on sanitary and phytosanitary (SPS) issue relating to Rice, Cassava and Vegetables production

Positive Impacts

- Value addition and market linkages allow for poor farmers acquiring the technological, institutional and market capabilities that allow them (resource-poor rural communities) to improve their competitiveness and move into higher-value activities;
- Contribute to increase revenue for farmers and poverty reduction; and
- Acquisition of new skills and knowledge

Risks and negative impacts

- Unsustainable interventions (often the initiatives of external actors), which are insufficiently linked to markets can reverse any gains made during project interventions;
- Potential impacts to the environment arising from pollution of water, soil and air quality from cassava processing activities; and
- Land degradation from farming activities.

Mitigation measures to manage these risks and negative impacts

- Promote inclusive stakeholders' participation and cooperation in the chain, an inclusive policy process, which must include the lead firms, and a pragmatic and non-ideological approach towards value chain restructuring
- Need to conduct feasibility studies that leads to selecting an appropriate value chain to develop, with suitable demand requirements:
- Provide capacity building for environmental management and monitoring

5.6.2 Component 2: Institutional Strengthening and Capacity Building

5.6.2.1 Sub-Component 2.1 – Strengthening Participatory Farmer Advisory Services

The activities linked to this sub project concern:

- Training of lead farmers
- Training on the use of ICT based advisory services
- Strengthening the capacity of farmer / agricultural producer organizations (in financial management, accounting, business plans development and operations management)
- Implementation of community-based nutrition promotion activities, including appropriate Infant and Young Child Feeding Practices, and hygiene sensitization through capacity strengthening of the Community Health Workers in Southeast Liberia.

Positive impacts

- Increased capacity and knowledge of farmers for production, financial resource management; and
- Community empowerment

Risks and negative impacts

Potential that capacity built is not utilized

Mitigation measures to manage these risks and negative impacts

Conduct feasibility to ensure that capacity building is demand driven

5.6.2.2 Sub-Component 2.2 – Support to National Food Safety and Security

The activities linked to this sub project concern:

- Support to developing / updating policy frameworks and governing food safety and protection
- Support to regulatory body on food safety, national Inter-ministerial Committee on food safety policies

Positive impacts

- Improve nutrition, food safety and security
- Enhanced cross-sectoral policy framework for food security and nutrition

- Strengthening human and institutional/system capacity
- Enhance mobilization and political commitment

Risks and negative impacts

- Limited resources for implementing policy framework due to low budget allocation from the government once the project is closed
- gaps in data, information and analysis on the contributions that different sectors make to food security, nutrition, and sustainable agriculture;

Mitigation measures to manage these risks and negative impacts

- identify bottlenecks and opportunities for improving policy and program impact;
- advocate and promote the development of human and organizational capacities for food security, nutrition and sustainable agriculture; as well as resource allocation within the national budget
- Provide support for evidence-based and inclusive policy dialogue and stakeholder coordination; n promoting more investment and improving resource allocation in line with the priorities spelled out in the national policies.

5.6.2.3 Sub-Component 2.3 – Strengthening the Capacity of MOA In Investment Planning And Implementation

The activities linked to this sub project concern:

- Support to the establishment of a unified M&E system at MoA
- Strengthening the capacity of MoA staff (following TNA, training on specific technical areas, including CBA of agricultural investments, agricultural statistics; CSA and sustainable NRM; price monitoring and crop budgets, etc.)

Positive impacts

- Improved performance of programs and project
- M&E system will serve as a means for demonstrating results as part of accountability to stakeholders

Risks and negative impacts

There is a risks that capacity built may not be retained due to low budgetary support

Mitigation measures to manage these risks and negative impacts

- Advocate with stakeholders including the MOA authorities to ensure that capacity built is mainstreamed into the agency overall program and budget
- Conduct feasibility to ensure that capacity building is demand driven

5.6.2.4 Sub-Component 2.4 – Capacity Development of Agricultural Research Institutions

The activities linked to this sub project concern:

- Multiplication of improved seeds and planting materials;
- Promotion of fortified, certified rice, cassava and vegetable planting materials production;
- Procure equipment for soil lab at CARI;

6 screen houses are constructed / rehabilitated.

Positive impacts

- Contribution to knowledge that can enhance planning and implementation of agriculture projects
- Provides capacity that enables institutions to overcome the challenges of food security, nutrition, increasing incomes and livelihoods of small famers while limiting the negative impacts on the environment.
- Bring about changes in local land and natural resource management modes
- Genetic Improvement
- Allows institutions to respond to new challenges

Risks and negative impacts

- There is a risks that capacity built may not be retained due to low budgetary support
- Pollution from use of agrochemicals - polluting water bodies and surrounding environment including ground waters from use of agrochemicals in crop during planting season.

Mitigation measures to manage these risks and negative impacts

- Advocate with stakeholders including the MOA authorities to ensure that capacity built is mainstreamed into the agency overall program and budget;
- Formulate an integrated Pest Management Plan.
- Screen the agrochemicals to be used so that they meet AfDB requirements;
- Sensitize and capacity build all users and ensure guided Monitoring & Evaluation (M&E) for reporting and compliance; and
- Cautious use of chemicals, both fertilizers and pesticides because this way the project would either minimize or prevent eutrophication, groundwater contamination, nitrate accumulation, and check pesticide resistance in non-target species which can result from excessive or indiscriminate application of these agrochemicals.

Table 27: General impacts of the proposed project activities associated with the use of agrochemicals and mitigation measures

Impact Issue	Potential Impact	Mitigation Measures
Water pollution	The use of agrochemicals may affect both ground and surface water through leaching and runoff High concentrations of nitrates and phosphates can lead to eutrophication in rivers, lakes, and coastal waters. High levels of nitrogen and phosphorus cause the depletion of oxygen in lakes and reservoirs through excessive algal and bacterial growth (eutrophication), eventually reducing aquatic life	Ensure that dressings do not exceed recommended doses Reduce leaching through appropriate choice of fertilizer to suit soil conditions, split applications, and fertilizer placement Reduce runoff through the incorporation of fertilizer into the soil, the timing of applications to avoid erosive rains, and soil and water conservation measures Limit nitrate use in sensitive watersheds serving urban areas Select non-ammonium sources of nitrogen such as urea Carry out liming (usually to pH 5.5 for tropical crops) Explore the potential for increasing production without the use of chemical fertilizers, especially using indigenous technologies, including organic fertilizers, and supporting integrated soil fertility systems Promote community education on improving indigenous practices to maximize production, avoiding chemical fertilizers in favor of local options that are available on the farm • Support crop management practices that increase the nutrients available to crops, including by: • using more organic and less inorganic–fertilizer • increasing the efficiency of fertilizer use through appropriate fertilizer selection, timing, and split applications • increasing nutrient recycling using crop residues and livestock grazing after crop harvest (mixed farming) • using nitrogen-fixing trees, where feasible (agroforestry) • improving rotations (e.g., the inclusion of legumes, multi-cropping)
Hazards to humans and animals	Improper application of pesticides, overuse, and neglect of safety periods between application and harvest often result in high	Promote the use of IPM (Integrated Pest Management) For general use, the formulated product should be of a low enough concentration Use low-toxicity formulations: from least toxic to most toxic, the options are granule, dust, wet-table powder,

	residues in harvested crops and processed food Agrochemical residues persist in contaminated clothing Pesticides may move off target and poison fish, cattle, beneficial insects, pollinators, and soil organisms	flow-able, emulsifiable concentrate, ultra-low volume, and fumigant
		Use low-concentration granular, seed dressings, bait formulations, and pheromone traps, which generally present the least hazard to users and are especially suitable for small-scale farmers unfamiliar with pesticide use Protective clothing, including masks, gloves, and boots, should be provided or promoted, especially for pesticides that are absorbed through the skin Unless it is washed, protective clothing can become saturated with pesticides
Pest resurgence and resistance	Misuse of pesticides can cause elimination or suppression of the natural enemies that keep insect pest populations under control. Suppression leads to outbreaks of secondary pests previously not considered important Misuse of pesticides can lead to the build-up of resistance in insect pests, pathogens, and weeds	Training should be provided on the safety, use, and cost-effectiveness of pesticides; a range of actors will require education: users, operators, and retailers,
Loss of bees and other beneficial insects	Pesticides can kill bees and other beneficial insects that are essential for the pollination of indigenous plants, honey production, etc., thus causing negative impacts on the food production, livelihoods, and incomes of poor rural communities	

Table 28: General impacts of the proposed project activities associated with Climate Change and proposed mitigation measures

Impact Issue	Potential Impact	Mitigation Measures

Prolonged dry spells and drought, and erratic rainfall pattern		Increase access to seeds adapted (e.g., drought resistance seeds) to local conditions Promote good agriculture practices such as sustainable land management for increased agricultural yields Use of climate-smart agriculture techniques and skills (conservation techniques), use of short-cycle species, enhance the utilization of river and groundwater Use early maturing and deep flooded crop varieties
Excessive rainfall and stormwater run-offs	Inundation and flooding of rice fields, cassava, and vegetable farmland resulting in plants submerged and loss of crops	Facilitate monitoring and early warning systems for floods and drought events Build capacity for agricultural planning and extension services to facilitate dissemination of climate information to farmers Smallholder farmers must respect and adhere to the local farming calendar Update infrastructure design standards Support flood protection barriers along water bodies
High post-harvest losses Loss of productivity due to lack of storage facilities	Post-harvest losses lead to increased poverty; as a result, if a decrease in the incomes of smallholders	Build the capacity of delivery institutions and farmers on post-harvest techniques and skills Develop quality storage facilities to reduce postharvest losses Provide simple machinery (post-harvest handling, processing, and packaging)

CHAPTER SIX: PUBLIC CONSULTATION

6.1 INTRODUCTION

Stakeholders consulted from September 2 to November 11, 2020 include relevant County Agriculture Coordinators (CACs), Local Government Authorities, Community Leaders, and Community Based Organizations (CBOs). It will be noted, however, that in developing this ESMF, extensive consultations, especially within the project beneficiary counties and areas of influence, could not be fully carried due to the COVID-19 pandemic restriction and the deplorable road conditions in accessing some of the beneficiary communities. Thus, in the start-up meetings during the inception period of this contract, it was agreed that visits should be made to a selection of the project areas in order to generate a clearer understanding of the project for the development of the ESMF. Nonetheless, considering the need for compliance with national laws, as well as World Health Organization (WHO) advice, measures were taken to identify project activities for which engagement is critical and cannot be postponed without having a significant impact on project timelines. Large public meetings were avoided, and instead, consultations with local and national government agencies, on one-on-one consultation, or in small-group sessions were conducted, including telephone conversations, where possible. The summary of the consultations is attached as Annex I.

This strategy also provided the communities the opportunity to participate in the entire process in the development of the ESMF report, and thus contributed to both the design and implementation of the resultant ESMPs as well as highlight potential roles and responsibilities of farmers, during both the baseline survey period and the in community-level monitoring of ESMF implementation, which is one way to enhance their participation and promote sustainability of the Project. The Figure below describes the stakeholders' consultation exercise undertaken during the development of the ESMP.

Figure 14: Consultation with the Development Superintendent of Grand Gedeh County (Left), and Farmers of Fetuah Town, Grand Bassa County (Right)

6.2 SUMMARY OF PUBLIC CONSULTATION

Stakeholder consultations were undertaken during the preparation of this ESMF as follows:

6.2.1 Meeting with the Project Beneficiary Communities

There were series consultative meetings with the Project Affected Communities (details of the meetings are discussed in annex one of this report) and the summary of the comments are as follows:

The residents of the PACs disclosed that some of the challenges encountered during the farming season are fluctuation in the water levels, especially over flooding as a result of poor construction of dams during the implementation of the SAPEC project; animals such as birds and groundhogs hampering crop production; Scarcity of water supply during the dry season; Effects of season variation on crop production; amongst others.

The following are summary of recommendations from the project beneficiary communities.

- Capacity building of farmers by introduction to mechanized farming methods;
- The project should focus on lowland and vegetable farming;
- Farmers should be trained by means of the farmers-field school;
- The project should encourage construction of boreholes to facilitate the water supply system, especially during the dry season;
- Farming should be empowered with requisite farming equipment (rain boot, raincoat, cutlasses, hoe, etc.);
- Institution of a monitoring system to guide the monetary expenditure system of farmers;
- The project should consider the farming season as to guide implementation;
- Hands-on or practical training, such as the application of fertilizer and operation of farming machinery, should be conducted for farmers;
- Timely delivery of farming tools and planting materials to farmers;
- Food for work system should be implemented. and
- Further environmental assessment should be conducted during the wet season to generate actual data of the project environment.

6.2.2 Meeting with Local Authorities and Governmental Ministries

As per the consultant's scope of work, stakeholder consultations were conducted with local authorities in the project beneficiary counties as well as ministries and agencies that are associated with the proposed project.

The rationale was to generate comments and recommendations that will enable FAO and the Ministry of Agriculture to make inform decisions regarding the implementation of the proposed project. Some of the stakeholders contacted were, the Environmental Protection Agency of Liberia, County Agricultural Coordinators (CACs) of Grand Bassa, Montserrado, Bomi and Grand Gedeh; Development Superintendents of Bomi and Grand Gedeh Counties etc.

Summary of feedbacks from the consultative meetings are as follows (details of the meetings are appended to the report as Annex one):

- There were criteria set by MOA in determining the Project's Beneficiary Communities;
- The project will be implemented in the framework of environmental sustainability;
- Challenges hindering agriculture production in Liberia are; labor availability, deplorable road conditions, etc.
- The EPA noted that the Agency will fully corporate and provides guidance and/or required information to enhance the project implementation;
- That lessons learned from past project, e.g., "the SAPEC project among others" where full environmental requirements were not adhered to, be considered to avoid reoccurrence;
- Capacity building and logistical support be provided during project implementation in order to enhance full monitoring;
- Ensure that all subprojects are in compliance with regulatory mandate in acquiring all require environmental permits;
- That the EPA be fully involved in decision making during project implementation;
- Inter-sectorial and/or institutional coordination has been a challenge during implementation of donor funded and GoL projects.
- Ensure that Monitoring Committee are set-up at every level and/or stage of the project, to include national, local, and CBOs amongst others.
- The proposed project should consider appropriate education for farmers relative to the implementation of the project;
- There has been no recorded land dispute in all of the targeted beneficiary communities and its areas of influence;
- The project should consider farm to market road construction and rehabilitation to enable farmers sell their products; and
- Building the capacity of responsible line ministries and agencies as well as local farmers and farmers' cooperative to enhance the sustainability of the project.

CHAPTER SEVEN: FRAMEWORK ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (F-ESMP)

7.1. GENERIC ENVIRONMENTAL AND SOCIAL MEASURES BY SUBPROJECT TYPE

The risk and impact management measures identified during the performance of the ESIA will be detailed in the environmental and social management plans (ESMPs) of the various sub-projects. The Pesticide Management Plan (PMP) should be integrated into the ESMP. In addition, the PMU must include in the contracts of works companies and in the contract of groups of producers and infrastructure managers, the obligation to implement environmental and social measures.

Likewise, the project should implement an information policy to ensure the involvement and participation of the various stakeholders, and the grievance redress mechanism (GRM) developed in this ESMF. Each construction companies must have environmental and social experts (EES) who will develop and implement a site ESMP in order to minimize, among other things, pollution and nuisances as well as the health and safety of workers and surrounding populations. Also, each control missions must have environmental and social experts (ESAs) to ensure the monitoring of the implementation of environmental and social measures by the construction companies.

7.2. ENVIRONMENTAL AND SOCIAL ASSESSMENT AND APPROVAL PROCESS FOR SUB-PROJECTS ACTIVITIES

This section describes the process that will guide the development and approval of the ESIA reports of all the sub-projects to be implemented under the Smallholder Agriculture Development for Food and Nutrition Security in Liberia (SADFONS).

The process is guided by the Environmental Protection Management Law, 2003, and the Environmental Protection Management agency procedural guidelines, 2006. The EIA Regulations are the key legislative regulations to which the proposed sub-projects' ESIA Reports must abide and comply with. EPA is the authority in the country with the main responsibility for enforcing this Regulation. The Regulations prescribe the requirements to produce an ESIA. The Agency also is mandated to carry out compliance monitoring of ESMP implementation. For this role, a possible option could be for a local institution, firm, or individual to be given the responsibility of monitoring, after due consultation with the EPA.

7.2.1. Assessment Procedure

- Determine whether sub-projects are likely to have potential negative environmental and social impacts (screening);
- Identify appropriate mitigation measures for activities with adverse impacts;
- Incorporate mitigation measures into the sub project design;
- Review and approve sub project proposals; and
- Monitor environmental and social impacts and concerns during implementation

7.2.1.1 STEP 1: SCREENING AND SUB-PROJECT CATEGORIZATION

Based on the outcome of the screening, any sub-project that is considered as Category A or B would require an ESMP prepared to guide its implementation.

In view of the types of planned activities, SADFONS will essentially fall under Category B (requires an ESIA/ESMP); this is essentially equivalent to the AfDB's category II and would equally require to be cleared by the AfDB after complying with the Bank's OS-1. This policy provides guidance on the environmental assessment procedures for AfDB-funded projects. However, in the process, where policy discrepancy exists, whichever is more stringent will prevail. Sub-projects requiring EPA's clearance will only commence when an environmental permit has been received from the EPA. The steps below will be followed by the PMU to procure approval for the sub-projects.

The Agency shall categorize the sub-project by placing it at the appropriate level of environmental assessment. The results will be communicated, with reasons, which could be any of the following:

- Objection to the sub-project
- No objection to the sub-project and no further reporting required, or Category C; i.e., equivalent to AfDB's Category III Project. In this case, the sub-project has only minor environmental and social risks; SADFONS may move to implementation in accordance with pre-approved standards or codes of practices or pre-approved guidelines for environmental and social management
- Preliminary Environmental and Social Impact Assessment (Category B), i.e., equivalent to AfDB Category II Project
  Environmental and Social Impact Assessment (ESIA) (Category A), i.e., equivalent to AfDB Category I Project

7.2.1.2 STEP 2: CONDUCT ENVIRONMENTAL AND SOCIAL ASSESSMENT STUDIES

For EPA's Category B, or AfDB's Category II sub-projects, for which the decision is the conduct of an ESIA, stand-alone ESIA reports will be prepared. The ToR is prepared using issues identified during the screening and scoping exercise. The impact mitigation measures provided in this ESMF may provide some basis for the design of the ToR. The ESIA will identify and evaluate potential environmental impacts for the proposed activities, evaluate alternatives, and design mitigation measures. The preparation of the ESIA will be done in consultation with stakeholders, including beneficiary farmers groups. Public consultations are critical in preparing a proposal for the activities of the projects likely to have impacts on the environment and population. The time-line for the duration of the ESIA/ESMP report development is determined by the PMU. Guidelines for the development of the ESMP, and indicates the Content of the ESIA report are in Annex 5a.

The ToR will be prepared by PMU with approval of EPA. The ESIA will be conducted by a consultant approved by the EPA.

7.2.1.3 STEP 3: REVIEW AND APPROVAL OF THE ESIA

Upon submission of the ESIA report by the Consultant, the PMU will submit the draft ESIA report to EPA for review; and after to the AfDB and FAO for review. The review period is within 30 working days from the date of submission. This process is aimed at:

- Assisting EPA in screening/reviewing all EIS Environmental Impact Statements (EIS), ESMPs, and other related reports;
- Allow the AfDB and FAO and to ensure the taking in account of their respective environmental and social politics in the ESIA / ESMP;
- Making recommendations to the Executive Director of EPA for final decision-making;
- Making recommendations on the adequacy or otherwise, of the assessment and any observed gaps; and
- Advising on the seriousness of such gaps and to recommend whether the mitigation measures as proposed can be accepted, and under what conditions, or not to be accepted and the reasons, as well as provide guidance on how any outstanding issue/areas may be satisfactorily addressed.

Comments and pertinent views generated during the review period are forwarded to the PMU and Consultant to incorporate for final review.

7.2.1.4 STEP 4: DISCLOSURE / DISSEMINATION OF ESMF/ESIA/ESMPS

Disclosure of the ESMF (and subsequently, the ESIAs/ESMPs) is a requirement of the AfDB and FAO, as well as Environmental Protection and Management Law, 2003.

The ESMF has been prepared in consultation with relevant local and international guidelines. Copies of this ESMF, like other safeguard instruments (such as ESIAs, ESMPs) that would be subsequently prepared for the project and its sub-projects, will be made available to the public by MOA. MOA will disclose the ESMF as required by the Liberia EIA public notice and review procedures as well as the African Development Bank Disclosure Policy on the African Development Bank's external website.

Copies of other safeguards instruments (such as ESIAs/ESMPs) should be disclosed in like manner. Where the draft ESIA report is found acceptable, EPA will notify PMU to submit ten hard copies and an electronic copy, following submission of which MOA shall be issued an Environmental Permit for implementation of the project.

The invitation for Public comments shall state the:

- nature of the project;
- location of the project;
- anticipated negative and positive impacts of the project;
- proposed mitigation measures to respond to the negative impacts;
- review period and selected centers; and
- Contact information as e-mails for comments from stakeholders and the public.

The general public hearing shall be held within such period as the Agency in consultation with MOA may determine, but which period shall not be less than thirty working days and not more than forty working days of receiving comments. In addition to the national level, the AfDB will disclose the entire ESMF report for at least 30 days before taking the proposed project to the Board for approval. FAO will also disclose the entire ESMF before the Board.

7.2.1.5 STEP 5: RELEVANT CLAUSES TO BE INTEGRATED INTO CONTRACTORS' CONTRACTS

Very often, Contractors implementing projects such as the SADFONS do not adhere to guidelines as indicated in ESMPs, and thus do not implement the recommended mitigation measures for project sustainability. The Contractors referred to in this report include any person, firm, or Consultant engaged to carry out service (design and construction and installation or any associated works, etc.).

The PMU will ensure the integration of recommendations and other environmental and social management measures in bidding documents, request for information and price and project implementation files. The costs related to environmental and social measures must be included in the estimated detail and the price schedule.

The Contractor will be responsible for ensuring compliance with all the relevant laws as well as managing the potential environmental, social, health, and safety impacts of all Project activities specified in all the approved environmental documents or reports such as the ESMF/ESMP. The Project should ensure, for example, that gender-based violence/sexual exploitation and abuse/violence against children.

Codes of Conduct and EHS Guidelines and Contract clauses should be included in Contractors' agreements as part of SADFONS bidding documents. In this regard, the Contractor should engage the services of a Health, Safety, and Environment specialist and a Community Liaison Officer to ensure proper application and compliance with principles and prerogatives in these Clauses.

7.2.1.6 STEP 6: IMPLEMENTATION OF ENVIRONMENTAL AND SOCIAL MEASURES

The Contractor will be responsible for the implementation of all environmental and social-related activities under the subproject, in accordance with environmental and social directives and clauses contained in works contracts as contractual components. Each Contractor is obliged to follow the ESMF and ESMP provisions during project implementation, including preparation and delivery to implementing agencies for approval of the site-specific implementation plans. The construction Contractor will make a proposal for environmental/social protection, including the safety of persons associated with the works and the public during a preconstruction period. Also, promoters of subproject should implement the environmental and social measures during exploitation phase, according to their specifications or convention with PMU.

The proposal will be reviewed and approved by implementing agencies. In this regard, attention will be given to:

- Taking all reasonable steps to protect the environment on and off-site to avoid damage or nuisance to implementing persons or property arising from its operations;
- Maintaining conditions of safety for all Implementing persons entitled to be on-site, and
- Provision of all lights, guards, fencing, warning signs, and watching for protection of the works and other property and for the safety and convenience of the public.

During the implementation of the subprojects, a Community Liaison Officer (CLO), employed by the Contractor will establish communication with the local residents affected with the project and will be responsible for informing them about all project activities, especially related to environmental and social impacts of the project and planned mitigation measures. The Contractor will also be responsible for familiarizing themselves with the following "Chance Finds Procedures" in case culturally valuable materials are uncovered during excavation or any project activities, namely:

- Stop work immediately following the discovery of any materials with possible archaeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities and implementing agencies;
- Protect artifacts using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts; Prevent and penalize any unauthorized access to the artifacts; and
- Restart works only upon the authorization of the relevant authorities.

7.2.1.7 STEP 7: ENVIRONMENTAL AND SOCIAL MONITORING AND SURVEILLANCE OF THE IMPLEMENTATION OF ESMPS

The aim of monitoring is to:

- Improve environmental and social management practices
- Check the efficiency and quality of the environmental processes
- Provide the opportunity to report on the safeguards results, impacts, and proposed mitigation measures

The supervision of the activities will be ensured by the Environmental and Social Safeguard Specialist (ESSS) of PMU, with the support of the Safeguards Specialist of the African Development Bank. The ESSS will play an interface role between the different actors involved in the implementation and monitoring / surveillance and will verify the effectiveness of compliance with environmental and social requirements

Proximity monitoring of the implementation of environmental and social measures will be carried out by the Safeguards specialists of the supervision contractor which will be appointed for this purpose.

Environmental monitoring (external monitoring) will be carried out by EPA with its branches in the counties. The evaluation will be carried out by independent Consultants, mid-term and at the end of the project.

The annual environmental and social compliance Audits: Systematic of environmental and social assessment information on the degree of compliance of the project with the environmental and social conditions of the loan, with the environmental and social policies of the AfDB and FAO or with any other defined criterion. They will be carried out each year by an independent consultant recruited by the Project Management Unit.

Monitoring of compliance: During implementation, it is important to check if the recommended mitigation measures are being carried out effectively to ensure the project is environmentally friendly. In the implementation of the different sub-projects, it is important that visits to Project sites are carried out to ascertain whether the proposed mitigation measures are being implemented. During the operational and decommissioning phases of the various sub-projects, compliance monitoring shall equally be carried out. Monitoring of compliance of the ESMF/ESMPs, according to the laws of Liberia, is the responsibility of the EPA. At the level of work sites, the supervisor contractor follow-up the compliance of the work on the field. In addition, the beneficiary communities are the full-time watchdogs that should internally monitor the activities of the implementing partners locally.

Impact monitoring: This implies monitoring the implementation of the ESMF/ESMP of the Project, i.e., whether these are being implemented by the Contractor(s) as indicated in the respective documents. These reports will be an integral part of the bidding documents that will be provided to the Contractor(s). This will be the responsibility of the Project's ESS. The Project should ensure that the Contractor(s) submits report on work progress and any challenges in implementing the safeguards documents. For cost-effectiveness and ease of monitoring and evaluation, the ESMF/implementation and monitoring should be mainstreamed in the main Project management system at all levels submitted to the AfDB and FAO. The monitoring results should be copied to MOA for their records.

Monitoring of cumulative impact: These types of impacts will essentially be the impacts of the proposed project on the environmental and social resources within its area of influence in relation to the other existing (or planned) development projects or investments in the Project's area of influence. These will often include infrastructure within farmlands that could belong to project beneficiaries. This requires collaboration among these sectors in the planning and implementation mentation of their respective sectoral plans at both national and sub-national levels to address cumulative impacts in a coordinated and harmonized manner.

7.2.1.8 STEP 8: Reporting

For better monitoring of the implementation of the ESMF, the following reporting system is proposed:

- Periodic monthly or detailed implementation reports produced by the safeguard's specialists of the contractors for the works and sent to the supervision contractor and to

the PMU. This requirement will be specified in company contracts as well as the obligation to transmit these reports to the supervision contractor.

- Periodic (quarterly, half-yearly and annual) implementation monitoring reports to be produced by the supervision contractor and sent to the PMU; this requirement will be specified in the mission contracts as well as the obligation to transmit these reports to the PMU;
- Follow-up reports prepared by EPA will be shared regularly (annually) to the PMU;
- A quarterly report on the implementation of the framework ESMP and the ESMPs as part of the execution of the project progress reports will be sent to the AfDB by the PMU.
- Annual or detailed monitoring and surveillance reports on the implementation of the framework ESMP and the ESMPs produced by the PMU and will summarize the results of the quarterly reports as well as the results of performance audits.

These reports should reflect the status of implementation of the measures enacted as well as the problems encountered.

7.2.2. Public communication and consultation mechanism/plan

This section presents the approach to be taken by the Project Management Unit (PMU) in order to conduct stakeholder consultation and communication in the process of developing sub-project ESIAs/ESMPs, in line with AfDB's OS 1 and the Liberia EPA standards. It describes the process of public consultation and disclosure that must be undertaken in the design, development, and implementation of the Project.

This ESMF has been prepared in order to guide project planners, implementers, and other stakeholders to identify and mitigate the environmental and social impacts of the proposed project. This framework will apply to any project activity within the SADFONS. Successful implementation of this ESMF will depend to a large extent on the involvement and participation of local communities. Specifically, it is recommended that:

- Environmental and Social awareness and education for the key stakeholders and affected communities must be an integral part of the ESMF implementation.
- Line Ministries and Agencies associated, Community Based Organizations and the project beneficiary farmers should be adequately trained to implement the proposed project, and where required to develop and to implement appropriate Environmental and Social Management and Monitoring Plans.

The Project should also sensitize and train all relevant stakeholders on their expected roles and responsibilities to promote consistency and efficiency. Stakeholder engagement is an essential criterion and an important strategy for an integrated environmental and social analysis process, the project design, and its implementation. Views of the project interested and anticipated beneficiary persons have been fully taken into account during the Environmental and Social Management Framework (ESMF) preparation and shall continue to form a basis for further design and implementation of the subprojects throughout the project life span. The purpose of the stakeholder consultation is to identify the views of local communities, major institutions, and

other stakeholders and to assess any mitigation measures which may be undertaken to minimize any adverse impacts of the proposals under consideration.

Subject to the approval of PMU, information about the project will be shared with the public to enable meaningful contributions and enhance the success of the project. The different channels for communication and consultation are Meetings, filling of questionnaires/application forms, public readings, and explanations of project ideas and requirements. Publication in print and electronic media, preferably local newspapers, notice boards near project sites, posters in strategic locations, and many public places. The means of communication must also take into consideration the literacy levels in the rural communities by allowing enough time for responses and feedback and putting messages in the local language(s). It is a requirement that appropriate mechanisms for ensuring full involvement and participation of the public is accorded priority and should be a continuous process from screening, scoping, during Environmental and Social Impact Assessment (ESIA)/Environmental Impact Assessment (EIA) Report preparation and during ESIA/EIA review and finalization.

Objectives of consultation/public engagement: Consultation/public engagement is essential because it affords the concerned stakeholders the opportunity to contribute to both the design and implementation of the project activities and reduce the likelihood of conflicts. Thus, opportunities are created to:

1. Gather their inputs, views, and concerns; and take account of the information and views of the public in the project design and in decision making.
2. Obtain local and traditional knowledge that may be useful for decision-making;
3. Facilitate consideration of alternatives, mitigation measures, and trade-offs;
4. Ensure that important impacts are not overlooked, and benefits maximized;
5. Reduce conflict through the early identification of contentious issues;
6. Provide an opportunity for the public to influence the designs and implementation in a positive manner;
7. Improve transparency and accountability in decision-making; and
8. Increase public confidence in the project.

It will be emphasized that the approach to be adopted in the consultation process will be guided by the following principles:

- ✓ **Free:** Engagement will be free of external manipulation or coercion and intimidation;
- ✓ **Prior**: Engagement will be undertaken in a timely way and prior to decisions being made so that views expressed can be taken into account; and
- ✓ **Informed:** Relevant and understandable Project information will be disclosed to help stakeholders to understand the risks, impacts, and opportunities of the Project.

Stakeholders identification : The stakeholders are defined as all people and institutions that have an interest in the planning and execution of the project, potentially affected communities; traditional leaders, Non-Governmental Organizations (NGOs)/Community Based Organizations (CBOs), Local Government officials, Ministries and Agencies, local/social and professional groups,

e.g., individual farmers, farmers' cooperative, etc. Stakeholder Identification and Analysis Criteria used in the selection of stakeholders to be consulted will be based on the level of the different stakeholders' potential involvement in the Project. In this Project, the following stakeholders should be consulted, and is further detailed out in the Tables below:

Beneficiary communities: These include the people or communities located in the proposed project area of influence, particularly those individual farmers and farmer cooperatives, who are subject to actual or potential direct project-related risks and/or adverse impacts on their physical environment, health, or livelihoods

Local and national government agencies: These include central and local government institutions whose support is critical to the success of the Project. Continuous engagement with these regulatory and public service authorities is often required. The Ministry of Agriculture is involved directly with the project; therefore, it will participate in the capacity building and training activities offered by the Project. On the other hand, local governmental authorities in the project area of influence may have long-established relationships with beneficiary communities and other local and national stakeholder groups, and therefore can play a role, for example, in convening and facilitating discussions between the Project and stakeholders. This category of stakeholders will include the Ministry of Agriculture (MOA), The Ministry of Gender, Forestry Development Authority, The Environmental Protection Agency, etc.

Traditional leaders: Traditional leaders (such as Town Chiefs, village leaders, etc.) can play the same role as local and national government agencies in helping the Project establish a relationship with the beneficiary communities, as well as in providing information

Community-Based Organizations (CBOs): These can be sources of local knowledge, sounding boards for project design and mitigation, conduits for consulting with sensitive groups, and partners in planning, implementing, and monitoring various project-related programs. These will include the following:

- ✓ Willekama Farming Group - Grand Bassa County;
- ✓ Kukatonnoh - Montserrado County;
- ✓ Falamah Cooperative – Bomi County;
- ✓ Measuagoon Agriculture Group Bomi County;
- ✓ ARIS – Bomi County;
- ✓ United Madia Groups - Bomi County;
- ✓ Kalafadaya – Bomi County;
- ✓ Jarwodee Swamp Cooperative (JARSCO) – Grand Gedeh County;
- ✓ Podeken Women Group – Grand Gedeh County;
- ✓ Podegbeh Women Group - Grand Gedeh County;
- ✓ Amanu Farmer Cooperative - Grand Gedeh County;
- ✓ CAFA - Grand Gedeh County;
- ✓ SABALN - Grand Gedeh County; and
- ✓ Other CBOs and FBOs in the project area of influence who are not reflected in this ESMF.

The CBOs will be consulted in view of their in-house capacity in managing rural agriculture extension projects; the consultations will provide the opportunity for consensus-building about the way forward, including the definition of their respective potential roles and responsibilities in the ESMF/ESIA/ESMP process. The meetings will enable the identification of their strength and weaknesses in relation to their potential roles and responsibilities in the implementation of the ESMF/ESMPs.

Vulnerable groups or persons: The group's or person's vulnerable status can be determined by identifying its likelihood of facing harder conditions as a result of the project, based on specific factors such as a group's gender, economic status, ethnicity, religion, health condition, etc.

Table 29: Stakeholders Identification Guide

Who?	How to identify them
People living in the vicinity of the proposed works.	- Field Survey - Identify the local government area(s) that the proposed corridor of work falls within. - Review available data to determine the stakeholder profile of the whole stakeholder or relevant group. - Use identified groups and individuals to tap into stakeholder networks to identify others. - Women should be represented and specific women groups identified (It is important that women be consulted in a safe space where they are free to speak without interference from males colleagues)
Individual people who own properties (farms or structures) that will be directly or indirectly affected.	Advertise in local newspapers and community radio station, telling people that they may be affected and asking them to register interest in attending meetings or receiving further information
Governmental Ministries and Agencies	Constitutional Responsibility/ministerial mandate

Stakeholder/public involvement in ESMF: The preparation of the ESMF involved stakeholders' consultation in the project beneficiary Counties. The major stakeholders identified and consulted September 2 to November 11, 2020, consisted of various government Ministries and Agencies, Counties Agricultural Coordinators (CACs), Community leaders, Community Based Organizations (CBOs), etc. It is, however, considered that the stakeholder involvement initiated by the ESMF would be built upon at the various project levels in the project beneficiary Counties. This will afford the Project Management Unit to:

- Clarify the project's objectives in terms of stakeholders' needs and concerns;
- Identify feasible alternatives (in particular alternative locations) and examine their relative merits in terms of environmental, social, and economic factors; and

- Identify and prioritize environmental and social issues and establish the scope of future studies and/or site-specific management plan; and
- Identify processes for continued stakeholders' involvement.

Stakeholder Engagement Plan (SEP): Since stakeholder consultations and engagement is a continuous process, it is expected that ongoing engagement activities will be managed by FAO and MOA through the Project Management Unit as the Project moves into the implementation phase. Continuous consultation can be facilitated with the aid of a Stakeholder Engagement Plan (SEP), attached as Annex III; it includes the cost of SEP implementation. The SEP is scaled to the project risks, impacts, and development stage and is tailored to the characteristics and interests of the affected communities. The Plan provides a formal commitment, defines responsibilities, and ensures that adequate funds are made available to carry out the process of consultation. It includes a timetable for the different stages of the consultation process, a description of any consultations that have already taken place, a budget, a definition of the reporting procedures, and a description of institutional responsibilities for consultation. The engagement process or consultation can take a number of forms, which will vary depending on the context and the individuals/groups subject to the consultation. Examples of consultation activities include:

- **Community meetings:** these are usually the starting point of consultations within the community. They are a more formal, larger-scale consultation grouping, to which all community members are invited to disseminate key messages and introduce key themes and topics, which will later be considered in more detail through smaller group discussions. However, during these meetings, certain groups or categories of persons (vulnerable person/groups) might be unwilling to express their perspectives in such a formal setting Focus group: these are small group discussions facilitated by a moderator who directs the conversational flow to the particular topic or issue under consideration. This method creates a more natural context for consultation and discussion, and it creates the possibility for participants to express their views with ease and confidence. Sometimes, it will be necessary to hold sessions with different groups (such as with only women, especially where they would feel more free and relaxed to express their views and concerns without fear of reprisal from the men).
- **Key informant interviews:** these are one-on-one interviews with particular individuals who may have particular or specialized knowledge about the topic under discussion. The interviews are usually semi-structured, with particular questions framing the discussion, but with the capacity to allow the interviewee to elaborate on the topic; indeed, sometimes other topics may be covered during the interview that is not necessarily identified by the interviewer in advance of the interview. In the context of agricultural inputs and technologies (seeds, fertilizer, farming systems, etc.) key informants will normally include agronomists and experienced agricultural extension personnel, etc.
- **Household surveys**: these are structured questionnaires that are administered at the household level, usually with households that are likely to face direct socio-economic impacts from a project. The surveys tend to cover a broad range of topics, including basic demographics, health and education status, economic livelihood activities, resource

dependence, asset base, etc. They provide a high-level picture of the impacted community and produce largely quantitative statistical outputs.

7.2.3. Capacity building for implementation of ESMF

This section is intended to identify the capacity building needs of the various institutions and persons that will be involved in the implementation of the ESMF/ESMPs, and it prescribes the approaches and methods that could be employed. The competence of the various actors, i.e., their ability to carry out their respective design, planning, approval, permitting, monitoring, and implementation roles, will, to a large extent, determine the success and sustainability or otherwise of the Project. For instance, the objectives and provisions of this ESMF cannot be achieved in the absence of relevant competencies in environmental and social management within PMU and other stakeholders. The following sections provide recommendations based on the identified needs for the potential Project beneficiaries and implementers.

The proposed project is expected to enhance the capacity of public sector institutions, such as MOA, MOGSCP, EPA, FDA, that are aligned with the project to ensure its objective. The proposed project will also concentrate on developing the capacity of the project beneficiaries, mostly farmers and farmers' cooperative, to be involved with ESMF implementation.

The first step identified in the capacity building needs of the project is viewed as being more than training; it also involves organizational development, elaboration of relevant management structures, processes, and procedures, not only within organizations but also the management of relationships between the different organizations and sectors (public, private and community) that will be involved in the Project. Capacity building also includes human resource development and involves the process of equipping individuals with the understanding, skills, and access to information, knowledge, and training that will enable them to perform effectively. In the development of the report, it became clear that the proposed institutions that will be involved in the project will need to have their capacity enhanced; farmers will equally need to be trained in specific farming skills, mostly in the form of training and farmer-field school. Training workshops on the implementation of the ESMF/ESMPs, and AfDB safeguard policies would be organized for staff of the PMU (especially the Project Coordinator, and ESS).

Farmer's cooperative and individual farmers will need to be trained in appropriate methods of application of agrochemicals, since inappropriate methods of use can result in unacceptable toxic residues on agricultural products and unnecessary financial burdens because of over application. In this regard, appropriate management of their use (timing, dosage, mode of application, etc.) is necessary to reduce to acceptable levels the environmental risks they pose. In addition, the farmers will be trained in IPM approaches including use of biological controls such as predators, parasites and pathogens to control pests. The training program should aim to provide attendees with general understanding of environmental and social management issues, safeguard processes, relevant environmental policies and legislation, and the basic approach to implementing the

guidelines provided in ESMF/ESMPs. Others will include the use of appropriate tools such as the screening forms, health and safety management, and internal monitoring and evaluation procedures. In addition to the above, and in order to comply with best practices and international standards, Contractors and laborers should be provided with information, knowledge and skills, focusing not only on the construction phase but also operational phase of the Project.

Table 30 shows the costs of the training measures.

Table 30: Costs of the training measures

Thematic	Level (national, county)	Target Stakeholders	Number of sessions	Quantity	Unit Cost (US Dollars)	Total Cost (US Dollars)
Component 1 : Support to enhancing smallholder agricultural productivity and market access						
Training Module 1 Sub-component 1.1 – Strengthening of sustainable crop production and intensification	County	Farmer Cooperatives CBOs related to farming and forestry related activities Local County Authorities	1	6 (each project beneficiary County)	2,000	18,000
Training Module 2 Sub-component 1.2 - Value Addition and Market Linkages	County	Farmer Cooperatives CBOs related to farming and forestry related activities	1	6 (each project beneficiary County	2,000	18,000
Component 2: Institutional Strengthening and Capacity Building						
Training Module 3 Sub-component 2.1 – Strengthening participatory farmer advisory services	County	Farmer Cooperatives CBOs related to farming and forestry related activities	1	6 (each project beneficiary County	2,000	12,000
Training Module 4 Sub-component 2.2 – Support to national food safety and security	National	MOA EPA Minstry of Commerce and Industry (MOCI) MOGSCP	2	-	3,000	6,000
Training Module 5	National	MOA	2	-	1,500	3,000

Sub-component 2.3 – Strengthening the capacity of MoA in investment planning and implementation						
Training Module 6 Sub-component 2.4 – Capacity development of agricultural research institutions	National	CARI	2	-	1,500	3,000
Training Module 7 Focus on AfDB Safeguards policy, FAO ESS and National Environmental and Social Law	National County	PMU EPA CARI Farmer Cooperatives CBOs related to farming and forestry related activities	-	-	-	PM because these thematic will be integrated into each module above
Total Cost (US Dollars)						**60,000**

7.2.4 Grievances redress mechanism (GRM)

A Grievance Redress Mechanism will be implemented to ensure that all complaints from local communities are dealt with appropriately, with corrective actions being implemented, and the complainant is informed of the outcome. It will be applied to all complaints from affected parties. The PMU will maintain a Complaints Database, which will contain all the information on complaints or grievances received from the communities or other stakeholders. This would include the type of complaint, location, time, actions to address these complaints, and final outcome. It is in this regard that the Bank's OS-1 requires that a "credible, independent and empowered local grievance and redress mechanism" be established in the Project. The Project, therefore, needs to ensure that any kind of complaints, suggestions, feedback from stakeholders, and project beneficiary communities are captured, acknowledged, documented, and addressed within a standard business time. Thus, a process that involves a grievance redress mechanism (GRM) needs to be instituted to ensure that community members, project beneficiaries, and all relevant project stakeholders are able to raise their concerns regarding project-related activities.

The PMU shall set-up a grievance redress committee that will address any complaints during project implementation. The mechanism will essentially comprise the following.

7.2.4.1. GRIEVANCE RESOLUTION COMMITTEE (GRC)

In view of the above, a Grievance Resolution Committee (GRC) will need to be set up by the PMU to inform and coordinate the relevant stakeholders and to provide resources for resolution

activities. The Committee will maintain all records from complaint to final decision for future reference. It will also ensure that public participation and consultation is always a part of the process to promote understanding and prevent unnecessary complaints and disputes.

The GRC will be mandated to deal with all types of grievances arising at the community level due to the proposed project and its sub-projects. The GRC members will comprise of qualified, experienced, and competent personnel who will be able to interact and gain the trust of the complainants in their communities. The GRC should consist of both male and female representatives. They should be able to accept complaints, provide relevant information on the process, discuss the complainants' situations with the concerned person, and explore possible approaches for resolution.

The Grievance Redress Committee will be responsible for:

- Communicating with the complainant;
- to recommend to the project implementer solutions to such grievances from complainant;
- to communicate the decisions to the complainant; and
- to communicate back the decisions to the complainant.

7.2.4.2 Structure and Protocols for Reporting and Managing Grievances

The PMU will set up Grievance Redress Committees to look into grievances at various levels as follows:

Table 31: Levels of Grievance Redress

Level	Composition and responsibilities of GRC
First Level GRM: GRC at the Site/Community Level	Composed at the community level, easily accessible to community people, community leaders, and representatives of women shall be part of the committee among other identified persons. This committee will be expected to report to the PMU
Second Level of GRM: GRC at the project Level	This committee shall comprise of members including the Project Coordinator, Environmental and Social Safeguard Officer, among others, and other local authority representatives from within the project area of influence.
Third Level of GRM: GRC at County level	The Local Governmental Authorities will be required to intervene in grievances beyond the project level resolution
Court Redress of Grievances	The Court is the final instrument for the resolution of all grievances that might not be addressed at the previous three levels

7.2.4.3. Grievance Redress Process

The structure or steps of the grievance mechanism will include:

- Have multiple and accessible uptake stations to receive complaints (text number, website/address, suggestion boxes, hotline, others);

- Receive, register and acknowledge the complaint in the logbook;
- Screen and establish the foundation of the grievance and, if needed, facilitate a referral;
- Implement and monitor decision/conclusion to redress grievance;
- Notify the complainant of the result and obtain a response if the resolution is satisfactory; If not, inform the complainant of the escalation process and document;
- Advice for a judicial proceeding as last resort if necessary;
- Document the experience for future reference; and
- Assess/review the performance of the system and make adjustments as necessary.

A step-by-step process, with the duration of each stage from the reception of the complaint to the notification of the resolution, with suggested timeframe and responsibilities, is indicated in Table 32 below. The recommended implementation timeline for addressing grievances is also shown below.

Table 32: Implementation Timeline for Grievance Response

Step	Process	Description / Required Action	Time-frame	Responsible Agency/Person
1	Receipt of complaint	Document date of receipt, name of the complainant, nature of the complaint	One day	Secretary to GRC at the project level
2	Acknowledgment of grievance	By letter, email, phone	1-5 days	Environmental and Social safeguard officer of PMU
3	Screen and Establish the Merit of the Grievance	Visit the site; listen to the complainant/community; assess the merit	5-10 days	GRC & Environmental and social safeguard officer & the aggrieved complainant or his/her representative
4	Implement and monitor a redress action	Where a complaint is justified, identify and carry out the redress	12-14 days or at a time specified in writing to the aggrieved	Project Coordinator to coordinate the implementation of redress action
5	Extra intervention for a dissatisfied scenario	Review the redress steps and conclusions, provide intervention solution	Ten days of receiving a status report	Project Coordinator and GRC to review and react
6	Judicial adjudication	Take a complaint to the court of law	No fixed time	The Complainant
7	Performance review	Stakeholder Meetings	No fixed time	The Proponent

7.2.4.4 Community Expectations When Grievances Arise

The members of the community will expect that their grievances will be addressed by the Project Management Unit through especially at the local level, which we will aim to achieve through the GRC. When local people present a grievance, they generally expect to receive one or more of the following:

- A concession in recognition of their problem;
- An honest response to questions about the project activities;
- An apology;
- Compensation when applicable;
- Modification of the activities that caused the grievance; and
- Some other fair remedy

7.4.2.5 Cost of the Implementation of GRM

Table 33 shows the cost of the implementation of GRM. The cost is 34,000 United States (US) dollars.

Table 33: Cost of the implementation of GRM

Section	**Nature of expenditure**	**Estimated cost**	**Quantity**	**Provisions (US dollars)**
Support for complainants or their representatives	- Travel, catering and accommodation costs (if necessary) - Reimbursement of communication costs (telephone)	3,000	-	2,000
Logistical support to the actors designated in the collection of complaints	- Computer tools (scanner, ink cartridges ...) - Telephone and internet connection package	2,000	5 persons	10,000
Field missions of GRC (processing of complaints in 1st level)	- Mission costs (3 provisional missions per sub-component) - Fuel	2,000	6 sub-components	12,000
Logistical support to the actors of GRC (2nd level) for handling complaints	- Telephone and internet connection package - Travel, catering and accommodation costs (if necessary)	5,000	-	5,000
Monitoring-evaluation and archiving system	Feeding of the monitoring database - evaluation of the PCU and computer backups NB. Existing system as well as dedicated human resources	5,000	-	5,000
Total cost (FCFA)				**34,000**

7.2.5 Performance indicators for the monitoring of the implementation of the Framework ESMP

Tables below describes the monitoring Program with suggested frequencies and indicators to monitor ESMF implementation.

Table 34: Strategic indicators to be followed by the PMU

Operational Safeguards	Status	Item	Indicators/environmental and social aspects
OS1 : Environmental and social assessment	**Triggered**	Procedure	Effectiveness of environmental and social screening of subprojects and validation by AfDB and EPA
			Effectiveness of the recruitment of a Environmental and Social Specialist within the PMU to support the monitoring of ESMF indicators Implementation of GRM

Table 35: Indicators to be monitored by the EPA

Operational Safeguards	Status	Item	Indicators/environmental and social aspects
OS1 : Environmental and social assessment	**Triggered**	Procedure	Validation of ToRs for sub-projects requiring environmental and social assessments by DEEC and AfDB Level of environmental and social performance of operations Public health and safety Control of pollution

Table 36: Indicators to be followed by construction companies and their subcontractors

Operational Safeguards	Status	Item	Indicators/environmental and social aspects
OS4: Prevention and control of pollution, hazardous materials and efficient use of resources	Triggered	**Pollution, Nuisance and Waste**	Number of localized pollutions per site and per month
OS5 : Working conditions, health and safety	Triggered	**Health and safety of workers**	Documentation of work accidents and incidents

		Working conditions / workers' rights	Information of employees on their conditions of employment and associated social rights (working hours, wages, overtime scheme, leave ...) and the GRM
		Condition of work	Treatment of migrant workers comparable to non-migrant workers who are in similar conditions
		Health and safety of workers	Provision of free services: medical care (routine care, medical examinations, emergency care, etc.), drinking water, numerous toile

Table 37: Indicators at level of Counties

Operational Safeguards	Statuts	Item	Indicators/environmental and social aspects
OS5 : Working conditions, health and safety	Triggered	Recruitment of local workers	Number of local workers recruited by companies and control mission, and by promoters
		Consideration of vulnerable people	Access in infrastructures for people with reduced mobility Number of people with reduced mobility benefit of the project

Table 38: Monitoring indicators for ESMP measures, in particular by the PMU / Control Mission

Operational Safeguards	Status	Item	Indicators/environmental and social aspects
OS1 : Environmental and social assessment	Triggered	procedure	Considering adaptation and mitigation measures in the ESIA, especially in terms of sizing of works

Table 39: Project Monitoring Plan - Indicators and Roles

Impact	Proposed mitigation measure	Implementation tool	Monitoring Indicators	Means of verification	Monitoring frequency	Responsibility	Cost (US$)
Physical and Biological Impact Assessment							
Air/noise pollution	Use local routes away from sensitive areas Site construction facilities away from sensitive areas Use equipment fitted with abatement devices (e.g. mufflers, noise enclosures); good maintenance regime Prohibit working at night working if possible Observe seasonal sensitivities (e.g. breeding seasons) Institute speed controls and other traffic calming measures to reduce excessive acceleration around settlements/sensitive receptors	Part of contract agreement with contractor Contractor's maintenance program or plan for equipment/ machinery Contractor's Plan on speed limits on unpaved roads through communities: should be ≤50km/hr and near or at project site should be	Maintenance plan implementation Grievances recorded	Independent checks by project engineers and ESS Maintenance records verified by project engineers and PMU Self-check by Contractor	Construction stage	Contractor (s) and PMU	Contractors' budget

Water Pollution	Control construction vehicles' movements and prohibit vehicle washing in watercourses, and similar practices Do not hamper drainage of surface water; avoid works in areas prone to flooding especially during rainy season Avoid over extraction of ground water in vegetable sub-projects Reduce runoff through incorporation of fertilizer into soil, timing of applications to avoid erosive rains, and soil and water conservation measures Select non-ammonium sources of nitrogen such as urea	Industry-specific standards, particularly the Environment Health and Safety (EHS) Guidelines AFDB's OS-4 Construction site management plans	Visibility of oil and other pollution materials on water bodies Reports based on implementation of Actions Plans	Number of times oil and other polluting material seen on water bodies Quantity of non - ammonium sources of nitrogen used in Project activities	Regular Monthly report Occasional checks and observations by project engineers PMU Periodic reports on performance by Contractor	Contractor (s) and PMU	Contractors' budget
Solid waste generation and disposal	Develop waste management plan including for hazardous waste; cleared vegetation, packaging, excess aggregate and disused equipment, etc.	Part of contract agreement with Contractor Contractor's waste management plan; Industry-specific standards, particularly the EHS Guidelines	Number of waste bins Final disposal records	Periodic reports	Monthly	Contractor(s) and PMU	Contractors' budget

Loss, fragmentation and degradation of habitat, and severance of animal migration routes and pathways	Carefully locate all project components, with advice from DPWM and wildlife specialists Establish buffer zones around conservation areas, watercourses, and other locations identified as ecologically sensitive Rehabilitate cleared areas with native species, and ecosystem restoration in habitats of conservation value Develop a long-term monitoring program and corrective actions as necessary	AfDB's OS-3	Presence of sensitive habitat Area rehabilitated Long-term monitoring and corrective plans and actions	Activity and site visitation Reports	Pre-construction, and construction maintenance	Contractor and PMU	Contractor's Budget
Impact on fauna	Demarcate and avoid areas of conservation interest (high value species, feeding or breeding sites, migration routes, etc.) where possible Carry out wildlife rescue and translocation where appropriate, under expert supervision	AfDB's OS-3	Presence of sensitive habitat Minutes of meetings with MOA, FDA and EPA Number of rescued and translocate fauna	Activity reports	Construction	Contractor/PMU	Contractor's budget

Pesticide hazards to humans and animals	Promote the use of integrated pest Management Use low-concentration granular, seed dressings, bait formulations, and pheromone traps Use suitable Personal Protective Equipment (PPE). Train all construction workers in safe methods of working	Industry-specific standards, particularly the EHS Guidelines	Reports based on the implementation of Actions Plans	Health and safety incident register Grievance records	EHS Guidelines under implementation Spot checks and observations by project engineers Periodic reports on performance by the contractor to project engineers	Contractor and PMU	Contractor's budget
Social Impact Assessment							
Marginalization of women and other vulnerable groups	Provide women and vulnerable groups with labor and time-saving machinery Target the women and other vulnerable groups in the allocation of Project resources and benefits	ESMF	Number of women benefiting from Project activities Number of women and other vulnerable groups trained in various skills Number women farmers/production schemes supported with purposive services (extension, mechanization, marketing and/ or financial)	Per Survey assessment report	During Project operation	PMU	5,000

Physical and economic displacement of people and assets	Avoid occupation of areas inhabited or regarded as of high value by communities (e.g., horticulture) where possible Develop and implement a resettlement action plan (RAP) in accordance with AfDB's OS-2 if properties and assets are affected by the Project operation	AfDB's OS-2	Number of PAPs	RAP Number of PAPs resettled	Before start of Project	PMU	-
Interaction between workforce and local communities	Implement a health management system for the construction workforce, Carry out training and awareness training for the workforce and their dependents on HIV/AIDS and other sexually transmitted illnesses, and communicable diseases, including malaria Carry out health awareness-raising campaigns for communities on similar topics	ESMF; Industry-specific standards, particularly the EHS Guidelines	Health and safety incident register Grievance records Number of training and awareness sessions held Number of women and other vulnerable groups that participated	Spot checks and Observations by ESS/Contractor	Construction and operation	Contractor and PMU	Contractor's Budget

Labor and working conditions	Employment practices and working conditions should conform to ILO standards and national regulations Institute a clear and comprehensive health and safety reporting and grievance procedure system freely available to all of the workforce	Industry-specific standards, particularly the EHS Guidelines ESMF	Comprehensive health and safety reporting and grievance procedure	Periodic onreports by performance ESS/Contractor	Construction and operation	Contractor and PMU	Contractors' budget
Economic Development and Employment	Contractor to develop an Employment Plan, with clear employment requirements and procedures for the construction and operational/ maintenance workforce Institute fair and transparent hiring and staff management procedures	Industry-specific standards, particularly the EHS Guidelines ESMF	Employment Plan	Periodic onreports by performance ESS/Contractor	Construction and operation	Contractor PMU	Contractor's Budget

Impacts on cultural heritage	Carefully select routes and siting of all project components, taking account of results of community consultations or specialist surveys Develop a Cultural Heritage Management Plan covering tangible and intangible (e.g. local traditions and practices) cultural heritage Implement a "Chance Finds" procedure during construction	Cultural Heritage Management Plan Pre-construction surveys/Chance Finds procedure	Cultural resources existing Number of infrastructure encountered Incidence register	Cultural Heritage Management Plan Periodic reports based on implementation of Plan	Pre-construction and construction and repairs/ recovery	Contractor PMU	Contractor's budget
						Total	5,000

7.2.6. ESMF implementation arrangements

The implementation of the ESMF is the responsibility of the MOA through PMU to be put in place. This section describes the implementation arrangements of the ESMF and subsequent site-specific ESMPs. PMU Governmental institutions are to benefit from the Project, and their regulatory and advisory roles will be needed, recognized, and utilized when necessary. For example, those public institutions that are important at the preparatory stage (mainly for technical advice and regulatory information provision) will include the EPA, who will be responsible for sub-project screening and categorization, and eventually monitoring the implementation of the sub-projects ESMPs; Forestry Development Authority who will be responsible for all forest-related issues; Ministry of Agriculture (MOA) who will provide support in the selection of agricultural fields; the local authorities such as the offices of the Superintendents, and beneficiary Community-Based Organizations are also relevant in project planning. Local government authorities have long-established relationships with beneficiaries' communities and, therefore, can play a role, for example, in convening and facilitating discussions between the Project and stakeholders.

The stakeholder roles and responsibilities in ESMF Implementation are presented below:

Project Management Unit (PMU): The daily management of the project will be vested in a dedicated Project Management Unit (PMU). The staff of the PMU will include an Environmental and Social Safeguards Specialist (ESSS) who will be responsible for the follow-up of the implementation all aspects of the ESMF/ESIA/ESMPs of the Project.

- **Project Coordinator:** the coordinator will oversee the Project's implementation. He will be responsible for initiating the ESIA/ESMP process of subprojects that require clearance from EPA.
- **Environmental and Social Safeguards Specialist (EESS) of the PMU:** He will provide progress reports on all environmental issues and activities, including implementation of the ESMF and ESMPs. Progress reports will be submitted to the FAO and AfDB. The ESSS will ensure integration of environmental and social mitigation measures in the bidding documents, ensure that the contractor prepares his ESMP, gets it approved, and integrates the relevant measures in the works breakdown structure or execution plan. The ESSS will ensure that contract documents contain environmental and social safeguard clauses that contractors must fully implement.

Contractors: The Contractors will be responsible for implementation of all environmental and social related activities under the subproject. Each Contractor is obliged to follow the ESMF and ESMP provisions during project implementation, including preparation and delivering to implementing agencies for approval of the site specific implementation plans. Construction Contractor will make proposal for environmental/social protection, including safety of persons associated with the works and the public, during a preconstruction period. The proposal will be

reviewed and approved by implementing agencies (MOA) through the supervision contractor. In this regard, attention will be given to:

- Taking all reasonable steps to protect the environment on and off-site to avoid damage or nuisance to implementing persons or property arising from its operations,
- Maintaining conditions of safety for all Implementing persons entitled to be on site, and
- Ensure separate, safe and easily accessible facilities for women and men working on the site.

Supervision Contractors: Supervision Contractor will in charge to make sure that the construction contractor has implanted efficiently the ESMP on the work site. For this purpose, it will include on in its team an environmental and social specialist to follow-up the construction contractor. It will ensure that the contractor prepares his ESMP, gets it approved, and integrates the relevant measures in the works breakdown structure or execution plan. It will produce a quarterly report base on the monthly report of the construction contractor and submit it regularly to the PMU.

Farmers or Beneficiaries: these are the direct beneficiaries of the proposed project. They will receive training and farming tools from the project proponent as well as cultivate the land for which the proposed project will be implemented.

Environmental Protection Agency (EPA): The; EPA will be responsible for overall external monitoring of the implementation of this ESMF and subsequent ESMPs. It will provide technical support and participate in training and sensitization of stakeholders (if requested) to enhance understanding of the national environmental and social safeguard instruments. The Agency has a monitoring and supervisory role and shall be responsible for confirming the results of the screening process, reviewing and clearing subproject-specific safeguard instruments, and conducting compliance monitoring within the context of the national laws and regulations, as well as the AfDBs' policies and procedures.

Food and Agriculture Organization (FAO): FAO will make supervision mission to follow up on the implementation of the ESMP as well as monitor and ensure the successful implementation of the project.

African Development Bank (AfDB): AfDB will monitor and ensure the successful implementation of the project.

Table 40: Roles and Responsibilities for Implementation of the ESMF

No	Activities	Responsibility	Monitoring
1	Identification and/or siting of the sub-projects	PMU	Local authority MOA

2.	Screening, categorization, and identification of the required instrument	PMU	Project Beneficiary Local Authorities EPA
3	Approval of the classification and the selected instrument	PMU	MOA EPA AfDB
	Preparation of the safeguard document/instrument (ESIA, Environmental Audit and ESMP, etc.) in accordance with the national legislation/procedure and the AfDB policies requirements)		
4	Preparation and approval of the Terms of Reference	PMU	MOA, FAO, AfDB
	Preparation of the report	Consultant	PMU EPA
	Report validation and issuance of the permit (when required)	PMU EPA FAO AfDB	PMU
	Publication of document	PMU FAO AfDB	PMU EPA
5	Implementation of other safeguards measures (ESMP)	Beneficiaries Contractors	Supervision contractor PMU
6	Environmental and social monitoring and surveillance	Supervision contractor EPA	FAO AfDB
7	Implementation of GRM	PMU	FAO, EPA, AfDB
8	Information, sensitization and communication activities	PMU Consultants	Local authority EPA Relevant line Ministries and Agencies
9	Public consultation on project safeguards performance and disclosure	PMU	CBO Relevant line Ministries and Agencies EPA

10	Building Farmers' capacity in safeguards management	PMU	Consultant Relevant line Ministries and Agencies EPA
11	Mid-term Audit, Annual Audit and Completion Audit	Consultants	PMU AfDB FAO

Project Management Unit (PMU)

7.2.6 Estimated Cost for Implementation of the ESMF

The proposed budget for implementation of the ESMF is indicated in Table 41 below.

Table 41: Proposed budget for the ESMF implementation

#	ITEM	UNIT	COST (US$)	TOTAL (US$)	SOURCE OF FUNDING
1	Preparation of subproject ESIA/ESMPs Although, ESIA in Liberia is site specific, a pragmatic assessment would be considered. One ESIA Report will be prepared for each project beneficiary communities, since there are similarities in the project environment and the nature of the sub projects for various sites in the respective counties.	6 reports One report for each of the six project beneficiary Counties	20,000	120,00	Project Funds
	Capacity Building (training)	-	-	60,000	Project Funds
	Implementation of the consultation and communication	Lump sump	20,000	20,000	Project Funds
	Implementation of specific ESMPs	Lump sump	-	75,000	Project Funds
	Implementation of GRM	-	-	34,000	
	Monitoring ESMF Implementation	4 trips	5,000	20,000	Project Funds
	Mid-term audit of Environmental and Social performance	Lump sump	12,000	12,000	Project Funds
	Annual audit of Environmental and Social performance	6 reports One report for each of the six project beneficiary Counties	10,000	60,000	Project Funds
	Completion audit of Environmental and Social performance	Lump sump	18,000	18,000	Project Funds

	Total	**419,000**

REFERENCES

1. AfDB Country Strategy Paper for Liberia
2. African Development Bank Group African: Safeguards and Sustainability Series: Integrated Safeguard System Guidance Materials
3. Environmental And Social Management Framework (ESMF) for Rural Access & Agricultural Marketing Project (RAAMP) in Abia, Akwa-Ibom, Bauchi, Kano, Katsina, Kebbi, Kogi, Kwara, Ogun, Ondo, Oyo, Plateau And Sokoto, Nigeria
4. Environmental and Social Management Framework (ESMF) for The Gambia Agriculture and Food Security Project (GAFSP)
5. EPA (2018) National Policy and Response Strategy on Climate Change. Republic of Liberia. August 2018
6. Environmental Protection Management Law of Liberia, 2003
7. Environmental Protection Agency of Liberia Procedural Guideline, 2017
8. Global Agriculture and Food Security Program (GAFSP) Public Sector Window 2019 Call for Proposals; Smallholder Agriculture Development for Food and Nutrition Security
9. GOL (2018b) An Act To Establish The Land Rights Law Of 2018. Republic of Liberia. July 11, 2018.
10. GOL, FAO and EU (2019) Policy effectiveness analysis to improve resource allocation, investment and development decisions in support of FNS&SA. Draft. April 2019
11. https://doi.org/10.1007/s12571-015-0478-1
12. MOA (2015) National Food Security and Nutrition Strategy. A Multi-sectorial Strategy for the Government of Liberia. Updated and Revised. June 2015
13. MOH (2008) National Nutrition Policy. Republic of Liberia. October 2008
14. Reynolds, T.W., Waddington, S.R., Anderson, C.L. *et al.* Environmental impacts and constraints associated with the production of major food crops in Sub-Saharan Africa and South Asia. *Food Sec.* **7**, 795–822 (2015).
15. UN Convention on Biological Diversity (CBD) (1992)
16. UN Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) (1979)
17. UN Convention on the Rights of Persons with Disabilities (CRPD) (2006)
18. UN Framework Convention on Climate Change (UNFCCC) (1994)
19. United Nations (2001) Convention to Combat Desertification (CCD) (1994)
20. USAID (2009). Environmental Guidelines for Small-Scale Activities in Africa.
21. USAID 2016: Food security desk review for Liberia, WFP 2013
22. WB IFC (2007) EHS General Guidelines
23. World Bank (2010). Environmental and Social Management Framework (ESMF).
24. World Bank Systematic Diagnostic for Liberia: 2018; **Liberia: Nutrition profile. USAID: 2018

ANNEX IA: RECORD OF STAKEHOLDER CONSULTATONS

Stakeholder Contacted and Venue	Dates	Objective
The representative of MOA & FAO, Ministerial Complex	September 02, 2020	**Introduction and objectives of the project** In his opening remarks, the Consultant, Mr. Godwin K. Senagah gave a brief background of the proposed project; that is, the Government of Liberia has secured conditional approval of funding from GAFSP Steering Committee and African Development Bank to support the development of Agriculture in the country. The project development objective is to improve food and nutrition security and reduce poverty of the targeted rural population in Liberia. This will be achieved through increased agricultural productivity and production of smallholder farmers (with a focus on food crops such as rice, cassava, and vegetables); improved smallholders' value addition, market access, and income; and strengthening the capacity of the government institutions, farmers and producer organizations. The Program supports resilient and sustainable agriculture that benefits and empowers poor and vulnerable smallholder farmers, particularly women and youth. Also, the project objectives are fully aligned with and support the LASIP II development priorities. He further deliberated that the project will be implemented by the Food and Agriculture Organization through the Ministry of Agriculture. This means, therefore, that in implemented the Project, the physical, biological, and social environment of the Project areas will potentially be impacted, although all efforts will be made to avoid or minimize the impacts as much as possible. He informed the meetings that where impacts are inevitable, the assessment shall be carried out to ensure that the appropriate mitigation measures are recommended and implemented He concluded by noting that once implemented, the Project will contribute to providing a ready market and job creation for the smallholder farmers especially women and the youth; build farmers' capacities through the farmers-field school program, train farmers on modern and mechanized farming methods and overall, improve the living standards of the small holder farmers. **Rationale of the Public Consultations**
EPA County Inspector, Zwedru City, Montserrado County	September 18, 2020	
Development Superintendent, Grand Gedeh County Administrative Building	September 18, 2020	
Development Superintendent, Bomi County Administrative Building	September 22, 2020	
Jawordee Town, Grand Gedeh County	September 18, 2020	
Zleh Town, Grand Gedeh County	September 18, 2020	
Work and See Community, Grand Gedeh County	September 19, 2020	
Banana Farm, Bomi County	September 21, 2020	
Kamada Town, Bomi County	September 21, 2020	
Moore Town, Bomi County	September 21, 2020	
Falamah Cooperative, Bomi County	September 22, 2020	

Destiny and Kukatonnoh Women Groups, Montserrado County	September 23, 2020	The Consultant informed the meetings that the rationale for the public consultations is for information sharing with stakeholders (including the implementation partners) to seek their opinion, learn from their experiences of similar past projects, hear their concerns to help in better planning of the proposed project activities. That from the consultations an ESMF report will be developed which will be used by future consultants to develop sub-project ESIA/ESMPs to address the potential negative environmental and social impacts that may be caused by the Project.
Dewain Town, Grand Bassa County	September 24, 2020	
Fetuah Town, Grand Bassa County	September 24, 2020	
Remarks and comments received at the meetings		
Stakeholder (s)		**Feedbacks, concerns, remarks, and recommendations**
The representative of MOA and FAO		There were criteria set in determining the Project's Beneficiary Communities; The project will be implemented in the framework of environmental sustainability; Irregularities adequately disseminating the project information between FAO and MOA; The project is GAFSP funded; Actual areas (land Size) of the project areas of intervention will be given to the ESMF consultant after consultation with relevant authorities; and Challenges hindering agriculture production in Liberia are; labor availability, deplorable road conditions, etc.
Perry Z. Newray, EPA Grand Gedeh, and River Gee Counties Inspector		The proposed project should consider reconstructing the dam and/or irrigation scheme in Jarwordee; Proper irrigation mechanism should be carried in various project areas to ensure the feasibility of the proposed project; Farmers education is needed to prevent the hunting of animals around farming plots; The project should encourage the education of farmers on environmental and occupational health and safety, especially during the farming season. Provision of safe drinking water for farmers should be considered; Facilities should be erected on various farming plots to accommodate farmers during the wet season; The dam should be built on larger bodies of water to enhance the purpose for which it was constructed; and

	There should appropriate decommissioning exercise at all project sites after constructing activities.
Peter T. Neeo, Sr, Grand Gedeh County Acting Superintendent	The proposed project should consider appropriate education for farmers relative to the implementation of the project; There has been no recorded land dispute in all of the targeted beneficiary communities and its areas of influence; The project should consider farm to market road construction and rehabilitation to enable farmers sell their products; and Building the capacity of responsible line ministries and agencies as well as local farmers and farmers' cooperative to enhance the sustainability of the project.
Amos M. Cooper, Bomi County Development Superintendent	Aside from Gangama Town, all other beneficiary communities listed by the consultant were not considered or visited during the assessment exercise conducted by MOA, FAO, and the County Development Office. There is a need to reconsider the previous communities visited because they are already informed about the project. There has been no concrete land conflict reported in most of the project areas; however, land dispute between the people of Moore Town and Sime Darby is current undergoing resolution. Liberia land Authority and the Environmental Protection Agency has been in touch with farmers; and Barmah Town practices traditional activities. They share a common boundary with Moore Town
Jawordee Swamp Cooperative (JARSCO), Podoken and Podegbeh Women Groups, and residents of Jawordee Town	**General Comments** Current land use is for farming purpose; The water table for lowland farm is sometimes low; There are over 500 hectares of land currently available for farming purpose; Some projects, such as the SAPEC, request for more land space for implementation and later cultivate on less; There usually prior agreement with project implementing Agencies before land acquisition;

	There are other agriculture projects that are currently being implemented in the community; for example, OXFAM is implementing the WAPP project and also assisting women in the community; Liberia Agriculture and Relief Organization (LARO) is implementing for German Agro; There were substandard farming that was carried out by the SAPEC project resulting in the damage of the Swamps; farming activities implemented by the SAPEC project was substandard and not durable; **Some of the challenges** encountered during the farming season are fluctuation in the water levels, over flooding as a result of poor construction of the dam; animals such as birds and groundhogs hampering the crop production; and No land dispute with surrounding communities. **Recommendation includes the following:** Provision of tools for farmers (rain boot, raincoat, cutlasses, hoe, etc.); Capacity building of farmers by introduction to mechanized farming methods; Provision of farmers – field school; and Further environmental assessment should be conducted during the wet season to generate actual data of the project environment;
AMANU Farmer Cooperative, SABALA, CAFA Community Based Organizations Zleh Town, Grand Gedeh County.	**General Comments** 75% of the 100 hectares of land in the community is already being used for farming activities; The farmland is owned by the community; All of the 100 hectares of land water deficiency especially during the dry season; There is a need for the construction proper irrigation strategy on the farmland; There has been no land conflict with surrounding communities; There are critical habitats surrounding the farmland; The farming site is in proximity to residential areas; and Challenges with farming activities include poor construction of the dam, inadequate water supply to farmland, and crops being destroyed by animals, usually buffalos. **The recommendation includes the following:**

	The project should focus on lowland and vegetable farming; Farmers should be trained by means of the farmers-field school; The project should encourage construction of boreholes to facilitate the water supply system, especially during the dry season; Farming should be empowered with requisite farming equipment; and A mechanized farming method should be encouraged.
Work and See Farmer Cooperative	**General Comments** Cooperative is involved with lowland rice farming; Currently have 75 hectares of land with 95% already under cultivation; however, some of the lands have not been laid out; Some resident of surrounding communities (City Hall Community, Garlo village, ERZ community, etc.) are encroaching on the 75 hectares; constructing houses and other infrastructures; The site is a communal land; The current membership of the cooperative is 97; Women usually work on an individual plot of land; Vacant farmland is usually purchased for L$ 250.00. **Challenges** Swampland is seasonal; Scarcity of water supply during the dry season; Over flooding during the wet season; Poor construction of the dam; Poor irrigation system; and Intruders are usually into the farmland destroying the bunds; **Recommendations** Improve irrigation system; Availability of farming equipment;

	Proper monitoring of the project implementation by MOA and line ministries and agencies; Intruder should be cautioned from the farmland; Supply of required farming materials; and Reconstruction of the Dam.
Kalifadaya women Group, Banana Farm, Bomi County	**General Comments** 60 farmers make up the cooperative; The cooperative covered 13 communities; Most of the land in the proposed project area is community land; Only communal land will be given for the project implementation and will not be given in patches; The anticipated land for the project implementation is free from conflict and close to secondary forests; MOA has a minimum intervention with farmers for the past three years; Agriculture activities in the area involve swamp rice farming, vegetable and cassava production; and Aside from EPA, there has been no intervention from any ministry or agency. **Challenges** Effects of season variation on crop production; Excessive wind; and Over flooding, especially during the wet season. **Recommendations** Road improvement; Provision of required farming tools; Creation of farm to market link; Logistical support to the farmer cooperative; Provision of shelter on various farmland, especially during the wet season;

	Regularity and efficiency in logistical supplies to farmers;
United Madia Group, Kamada Town, Bomi County	**General Comment** Farmer cooperative comprises of 42 farmers; The proposed project site is community land and a young bush; No land dispute with members of the community; The proposed site is not in patches and is old farmland; The proposed site is not in proximity to protected areas or area of ecological sensitivity; and The proposed project site is a mixture of wetland and upland. **Challenges** Destruction of crops by animals; and Effects of crop production as a result of climate change **Recommendations** Road improvement; Provision of required farming tools; and Logistical support to the farmer cooperative.
Measuagoon Agriculture Group, Moore Town, Bomi County	**General Comment** Farmer cooperative comprises of 110 farmers; Farmers are involved with rice, cassava, and vegetable cultivation; The proposed site was previously selected by FAO for a project that wasn't implemented. Some of the lands are currently used for poultry. The proposed project site comprised of seasonal wetland, swampland, and high bush **Challenges** Scarcity of water source in the proposed project area; and Deplorable farm to market road condition; Lack of effective farming tools; Inadequate supply of farming logistics; and

	Delay in receiving donations from partners or NGOs, especially crops, hinders agricultural productivity. **Recommendations** Institution of food for work program; Training and capacity building of farmers through the farmers- field school; and The proposed project should meet all of its required objectives;
Falamah Cooperative, Bomi County	**General Comment** Bushfallowing is the most common farming practice by the cooperative; and No land dispute with members of the community; **Challenges** Effects of season variation on crop production **Recommendations** Road improvement; Provision of required farming tools; and Logistical support to the farmer cooperative.
Destiny Women Group, and Kukatonnoh Women Group in Tuan Town, Montserrado County	**General Comment** The majority of the farmers are women; Hire workers to brush the farm; Some of the anticipated farmland for the implementation of the project is community land, while others are private land. Some of the lands are currently under cultivation **Challenges** Destruction of crops by animals; and Effects of crop production as a result of climate change **Recommendations**

	Training and capacity building of farmers through the farmers- field school; Provision of required farming tools; and The proposed project should meet all of its required objectives;
Williekama Farming Group, Dewain Town, Grand Bassa County	**General Comment** Cooperative comprises of 60 members; Lowland for the project implementation will be given in patches; No traditional bush in proximity to the proposed project area; and No land dispute with anticipated farmland for the implementation of the project. **Challenges** Destruction of crops by animals; and Effects of crop production as a result of seasonal variation; and Lack of farming tools. **Recommendations** The project has to consider the farming season as to guide implementation Hands-on or practical training, such as the application of fertilizer and operation of farming machinery, should be conducted for farmers; Provision of farmer-field school; and Extension of the current warehouse facility
Kwapageah Farmers Group, Fetuah Town, Grand Bassa County	**General Comment** Cooperative comprises of 40 members; The vegetation of the proposed project site comprises of high bush and intermittent wetland; Minimum water source at the proposed project site; Current activity at the site is farming; No land conflict with surrounding communities; No traditional bush at the proposed project site Lowland for the project implementation will be given in patches;

	No traditional bush in proximity to the proposed project area; and No land dispute with anticipated farmland for the implementation of the project. **Challenges** Lack of farming tools; Lack of storage facility; Lack of shelter on farmland; **Recommendations** Institution of a monitoring system to guide the monetary expenditure system of farmers; The project should consider the farming season as to guide implementation; Hands-on or practical training, such as the application of fertilizer and operation of farming machinery, should be conducted for farmers; Provision of farmer-field school; and Timely delivery of farming tools and planting materials to farmers; and Food for work system should be implemented.
Ministry of Commerce and Industry	Pending Consultation
Environmental Protection Agency of Liberia	**General Comment, Recommendations and Challenges** Meeting was held with the Department of Compliance and Enforcement; (attendance attached in annex X); Acknowledged receipt of the communication introducing the ESMF Specialist; Noted that the Agency will fully corporate and provides guidance and/or required information to enhance the project implementation; It was noted that the project will be supported by the EPA in terms of providing technical guidance ensuring environmental requirements are dully adhered to prior to and during operational phases of the project; Emphasized that inputs and recommendations will be provided upon submission of the required reports to the EPA for review;

	That lessons learned from past project, eg., "the SAPEC project among others" where full environmental requirements were not adhered to, be considered to avoid reoccurrence; Capacity building and logistical support be provided during project implementation in order to enhance full monitoring; Ensure that all subprojects are in compliance with regulatory mandate in acquiring all require environmental permits; That the EPA be fully involved in decision making during project implementation; Noted that inter-sectorial and/or institutional coordination has been a challenge during implementation of donor funded and GoL projects. Ensure that Monitoring Committee are set-up at every level and/or stage of the project, to include national, local, and CBOs among others.

ANNEX IB: RECORD OF SITE VISITATION

Item	Consultation	GPS Position and partial View of proposed project site
Jawordee **Grand Gedeh County**	 	 GPS Position: 29N UTM 0545427/0674631 – low land farm  GPS Position: 29N UTM 0545166/0674828 – upland farm

Zleh Town **Grand Gedeh County**		 GPS Position: 29N UTM 0563102/0688412 – low land farm

Work & See **Grand Gedeh County**	 	 GPS Position: 29N UTM 0597071/06707333 – low land farm  Position: 29N UTM 0598030/0671217 – nonfunctional dam

Banana Farm
Bomi County

GPS Position: 29N UTM 0303354/0761195 – Upland Farm

GPS Position: 29N UTM 0303354/0761195 – Upland Farm

Kamada Town **Bomi County**		 GPS position: 29N UTM 0295470/0762561

Moore Town Bong County		 GPS position: 29N UTM 0289544/0751513
Dewain Town Grand Bassa County		 GPS position: 29N UTM 0428075/0696828

Tuan Town Bensonville Montserrado County		 GPS position: 29N UTM 0324618/0715357

ANNEX IC: LIST OF RELEVANT PROJECT PERSONNEL CONTACTED DEVELOPMENT OF THE ESMF

Name	Community/Organization	County	Contact Number
Amos M. Cooper	Development Superintendent	Bomi County	0770036009
Amos Zeon	County Agricultural Coordinator (CAC)	Montserrado County	0777653373
Joyce Kolvah	County Agricultural Coordinator (CAC)	Grand Bassa County	0886531868 / 0777531868
Hon. Peter T. Neeo, Sr	Acting Superintendent	Grand Gedeh County	0777975852
Leesay J. Mensah	County Agricultural Coordinator (CAC)	Bomi County	0779087263
Isaac Karn	AMANU Farmers' Cooperative	Grand Gedeh County	0880490225
Elizabeth Archie	United Madia Group	Bomi County	0778999413
Eric B. Seh	Measuagon farmer Cooperative	Bomi County	0777379393
Lorpu Varmah	Kukatonnoh Women Group	Montserrado County	0888156115
Comfort Jallah	Destiny Women Group	Montserrado County	0776366834
Kennedy	Falamah Cooperative	Bomi County	0770137187

ANNEX II: SAMPLE CHANCE FIND PROCEDURE FOR THE PROTECTION OF PHYSICAL CULTURAL RESOURCES.

The Ministry of Culture, Information and Tourism, and the Ministry of Internal Affairs are responsible for the protection of Physical Cultural Resources.

This Chance Find Procedure shall be applied in case previously unknown culturally valuable materials are unexpectedly discovered during the implementation of the Proposed Project:

1. Delineate the discovered site or area;
2. In the case of chance find of any material with possible archaeological, historical, paleontological, religious, or other cultural value, all work at and around the find, feature, or site must be stopped immediately.
3. The discovery will be clearly demarcated and secured from unauthorized access, and all found remains will be left where they were found**.** Protect artifacts and implement measures to stabilize the area, if necessary.
4. Notify the PMU of the findings which in turn, immediately notifies the Ministry of Internal Affairs for the necessary assessment, recording, and next course of action to take.
5. Restart construction works only upon authorization of the relevant authorities:
6. Stop the construction activities in the area of the chance find
7. Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a nightguard shall be present until the responsible local authorities and the equivalent takeover;
8. Notify the supervisory Engineer who in turn will notify the PMU, who in turn will notify the national authority responsible for Antiquities immediately (within 24 hours or less);
9. Responsible local authorities and the national authority for Antiquities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the national authority of Antiquities (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historical, scientific or research, social and economic values;
10. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding are irremovable remain of cultural or archaeological importance), conservation, preservation, restoration, and salvage;
11. Implementation for the authority decision concerning the management of the finding shall be communicated in writing and
12. Construction work could resume only after permission is given from the responsible authority for Antiquities concerning the safeguard the heritage.

These procedures must be referred to as standard provisions in construction contracts, when applicable. During project supervision, PMU shall monitor the above regulations relating to the treatment of any chance finds encountered.

ANNEX III: STAKEHOLDER ENGAGEMENT PLAN FOR THE PROPOSED PROJECT

Activity	Identified Stakeholders	Justification for Consultation	Period/Frequency	Communication Method	Responsibility	Estimated Cost (US $)
Disclose ESMF	AfDB; FAO; beneficiary communities; Traditional leaders; CBOs, MoA, FDA	Financing the proposed project in compliance with Bank requirements Ensures compliance with sub-project ESMPs to mitigate negative impacts of the proposed project Communities to determine if their concerns and views are integrated into ESMF	Upon approval of the ESMF report	Bank's website; FAO website; national dailies; Local radio stations; and distribution of ESMF documents	AfDB; FAO; MOA	20,000
Sub-project ESIA/ESMP preparation	AfDB; FAO; beneficiary communities; local and national agencies; traditional leaders; CBOs	In compliance with Bank requirements Ensure that community concerns and views are considered and integrated into ESIA/ESMP Ensure that impact mitigation measures are implemented and monitored for compliance Health and safety issues are integrated into ESMPs	During ESIA/ESMP preparation	During site visits; consultation and public participation; interviews; e-mail; telephone; literature review	Consultants	Included in Consultants' fees
Consultation before the start of construction works (e.g., Storage facilities (e.g., Warehouses); Farmers-Field School Boreholes for farmland; feeder roads to project sites: Cassava & Rice processing facilities	Community members; Traditional leaders; PMU; CBOs	Information sharing on the planning of works Create awareness on the potential impacts of works and method of mitigating impacts Inform and build capacity on grievance redress mechanism (GRM) Build capacity of stakeholders including project beneficiaries on implementation of ESMPs	One week before commencement of works	Radio announcement; newspaper announcement; local and traditional means of communication	SADFONS (Environmental. and Social Safeguards Specialists), Consultants	3,000
Start of construction works as noted above	Beneficiary communities; Traditional leaders; CBOs- Private sector actors	Information on the schedule of works and progress Awareness creation on potential impacts and mitigation measures	During the implementation of the works	Community meetings; Stakeholder meetings; periodic progress reports	PMU Contractors	5,000

		Review ESMPs and mitigation measures Training on implementation of ESMPs; training on Codes of Conduct and Action Plan for Implementing ESHS and OHS Standards, and Preventing Gender-Based Violence; Training on GRM				
End of construction works and decommissioning of construction equipment	Project beneficiary communities; Traditional leaders; CBOs	Information on the schedule of works and progress; Awareness creation on potential impacts and mitigation measures; Review ESMPs and mitigation measures; Training on implementation of ESMPs; training on Codes of Conduct and Action Plan for Implementing ESHS and OHS Standards, and Preventing Gender-Based Violence; and Training on GRM	Decommissioning period	Community meetings; Stakeholder meetings; periodic progress reports	SADFONS; Contractors, Consultants	3,000
Commissioning and handing over of sub-projects (roads, boreholes, and processing facilities	Affected communities; Traditional leaders; CBOs Private sector actors; Contractors	Information sharing Identification of roles and responsibilities; Awareness creation on expectations; Training of operators/farmers/cooks	Before commissioning of facilities and infrastructure	Radio announcement; local and traditional means of communication; Training workshops	FAO, MOA, Consultants,	3,000
Operation and Maintenance (O&M) of sub-projects	Beneficiary communities; MOA	Roles and responsibilities Review GRM	During the period of O&M	Stakeholder meetings; training	MOA, FAO	**20,000**

ANNEX IVA: GENERAL ENVIRONMENTAL MANAGEMENT CONDITIONS FOR CONSTRUCTION CONTRACTORS

General

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) or Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy, and plan to fully consider relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the PMU to fulfill his obligation within the requested time, the PMU reserves the right to arrange the execution of the missing action by a third party on account of the Contractor.
2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore worksites to acceptable standards, and abide by any environmental performance requirements specified in an EMP. In general, these measures shall include but not be limited to:

Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health, and the protection of workers and communities living in the vicinity of dust-producing activities

- ✓ Ensure that noise levels emanating from machinery, vehicles, and noisy construction activities (e.g., excavation, blasting) are kept at a minimum for the safety, health, and protection of workers within the vicinity of high noise levels and nearby communities.

- ✓ Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels are maintained and/or re-established where they are disrupted due to works being carried out.
- ✓ Prevent bitumen, oils, lubricants, and wastewater used or produced during the execution of works from entering into rivers, streams, irrigation channels, and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.
- ✓ Prevent and minimize the impacts of quarrying, earth borrowing, piling, and building of temporary construction camps and access roads on the biophysical environment, including protected areas and arable lands; local communities, and their settlements. In as much as possible, restore/rehabilitate all sites to acceptable standards.
- ✓ Upon discovery of ancient heritage, relics, or anything that might or believed to be of archaeological or historical importance during the execution of works, immediately report such findings to the PMU so that the appropriate authorities may be expeditiously contacted for fulfillment of the measures aimed at protecting such historical or archaeological resources.

- ✓ Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
- ✓ Implement soil erosion control measures in order to avoid surface runoff and prevents siltation, etc. (i) Ensure that garbage, sanitation, and drinking water facilities are provided in construction workers camps. (ii) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long-distance transportation.
- ✓ Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.

4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan/strategy to ensure effective feedback of monitoring information to project management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.

5. Besides the regular inspection of the sites by the PMU for adherence to the contract conditions and specifications, the PMU shall appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. County environmental authorities may carry out similar inspection duties. In all cases, as directed by the PMU, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy of rehabilitation measures carried out on the biophysical environment and compensation for socio-economic disruption resulting from the implementation of any works.

ANNEX IVB: SAMPLE HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT PLAN (HSE-MP)

1. Within six weeks of signing the contract, the Contractor shall prepare an HSE-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's HSE-MP will serve two main purposes:
    - For the Contractor, for internal purposes, to ensure that all measures are in place for adequate HSE management, and as an operational manual for his staff.
    - For the PMU to ensure that the Contractor is fully prepared for the adequate management of the HSE aspects of the project, and as a basis for monitoring of the Contractor's HSE performance.

2. The Contractor's HSE-MP shall provide at least:
    - a description of procedures and methods for complying with these general environmental management conditions and any specific conditions specified in an EMP;
    - a description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
    - a description of all planned monitoring activities (e.g., sediment discharges from borrow areas) and the reporting thereof; and the internal organizational, management, and reporting mechanisms put in place for such.
3. The Contractor's HSE-MP will be reviewed and approved by the PMU before the start of the works. This review shall demonstrate if the Contractor's HSE-MP covers all of the identified impacts and has defined appropriate measures to mitigate any potential impacts.

HSE Reporting

4. The Contractor shall prepare bi-weekly progress reports on compliance with these general conditions, the project EMP, if any, and his own HSE-MP. An example format for a Contractor HSE Report is given below. It is expected that the Contractor's Reports will include information on:
    - HSE management actions/measures taken, including approvals, sought from local or national authorities;
    - Problems encountered in relation to HSE aspects (incidents, including delays, cost consequences, etc.; as a result thereof);
    - Lack of compliance with contract requirements on the part of the Contractor;
    - Changes of assumptions, conditions, measures, designs, and actually works in relation to HSE aspects; and
    - Observations concerns raised, and/or decisions taken with regard to HSE management during site meetings.
5. It is advisable that reporting of significant HSE incidents be done "as soon as practicable." Such incident reporting shall therefore, be done individually. Also, it is advisable that the Contractor keeps his own records on the health, safety, and welfare of persons and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. Example formats for incident notification and detailed report are given below.

Training of Contractor's Personnel

6. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own HSE-MP, and are able to fulfill their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the HSE-MP. General topics should include:
    - HSE in general (working procedures);
    - Emergency procedures; and
    - Social and cultural aspects (awareness-raising on social issues).

ANNEX IVC: SAMPLE HSE REPORT FORMAT

Contract:

Period of reporting:

HSE management actions/measures:

Summarize HSE management actions/measures taken during the period of reporting, including planning and management activities (e.g., risk and impact assessments), HSE training, specific design and work measures taken, etc.

HSE Incidents:

Report on any problems encountered in relation to HSE aspects, including its consequences (delays, costs) and corrective measures are taken. Include relevant incident reports.

HSE compliance:

Report on compliance with Contract HSE conditions, including any cases of non-compliance.

Changes: Report on any changes of assumptions, conditions, measures, designs and actual works in relation to HSE aspects.

Concerns and observations: Report on any observations, concerns raised, and/or decisions taken with regard to HSE management during site meetings and visits.

Signature (Name, Title Date):

Contractor Representative

ANNEX IVD: SAMPLE FORMAT: HSE INCIDENT NOTIFICATION

Provide within 24 hours to the Supervising Engineer

Originators Reference No:

Date of Incident:

Time:

Location of incident:

Name of Person(s) involved:

Employing Company:

Type of Incident:

Description of Incident:

Where, when, what, how, who, operation in progress at the time (only factual)

Immediate Action:

Immediate remedial action and actions are taken to prevent reoccurrence or escalation

Signature (Name, Title, Date):

Contractor Representative

ANNEX V: INDICATIVE FRAMEWORK FOR ASSESSING AND MAINSTREAMING GENDER

Preamble

Liberia made several commitments to ensure that gender issues are not only a part of the national discourse but also that they are integrated into policies and development programs. , To this end and as part of project preparation, a gender study and consultations with communities should be conducted to assess the challenges and opportunities for the mainstreaming of gender concerns in the use of access to, and maintenance of roads.

Objective

- Ascertain how to promote women's participation in the project and, in particular, in road maintenance activities.
- Determine under what conditions women could participate in the community-based road maintenance activities

As part of project preparation, a gender study and consultations with communities should be conducted to assess the challenges and opportunities for the mainstreaming of gender concerns in the use of, access to, and maintenance of the projects.

Focus/Scope of the Study

In particular, the study should provide information on:

- **Women's transport needs**: aims to assess women's farming needs and identify ways to address such needs.
- **Women's voice in community consultation**: aims to identify mechanisms to ensure women's preferences are reflected in community consultations, whether for consultations on social safeguards or farming activities.
- **Women's participation in community-based maintenance**: aims to identify context-specific entry points and mechanisms (e.g., quotas) for women's participation in the maintenance of farming activities.
- **Project impact on women's livelihoods**: recommend indicators or give indications on sex-disaggregation of existing indicators to reflect the project's direct and indirect impact on women's livelihoods.

ANNEX VA: GUIDELINES FOR THE PREPARATION OF ESMP

The ESMP for sub-projects should be user friendly, practical, and action-oriented, specifying measures to be taken to address the negative environmental impacts. It should also specify the actions, resources, and responsibilities needed to implement the agreed actions and details on key social and environmental management and monitoring performance indicators.

Further, the ESMP should ensure that the costs of implementing the ESIA report recommendations are budgeted into the total proposed project costs. The ESMP should cover the following aspects:

1. **Summary of Impacts**: Anticipated adverse environmental and social impacts should be identified and summarized, and the appropriate mitigation measures.
2. **Description of Mitigation measures:** The mitigation measures proposed for the various impacts should be described in relation to the corresponding impacts while stating the conditions under which they are required.
3. **Consultations:** Adequate description of the public participation and consultations should be done and justified.
4. **Description of monitoring program:** A detailed monitoring program should be described in the ESMP, listing environmental performance indicators, and their link with impacts and mitigation measures. The ESMP should also describe the parameters to be measured, methods to be used, sampling location and frequency of measurements, detection limits, and a clear definition of thresholds that indicate the need for corrective measures. Monitoring and supervision schedules should be clearly stated and agreed to ensure timely detection of needs for remedial action and also provide information on the level of compliance with ESMP in accordance with the relevant safeguards. These arrangements must be clearly in the project implementation/operations manual to reinforce project supervision.
5. **Legal requirements and bidding/contract documents**: The ESMP should be incorporated in all legal documents to enforce compliance by all Contractors participating in the proposed projects. The ESMP should be summarized and incorporated in the bidding and contract documents.
6. **Institutional arrangements:** The ESMP should clearly County who is responsible for monitoring, execution of remedial action, and the reporting order and format to allow for a defined channel of information flow. It should also recommend institutional strengthening for relevant agencies and the funding authorities for the various activities.
7. **Capacity Development and Training**: To support timely and effective implementation of environmental project components and mitigation measures, the ESMP draws on the assessment of the existing capacities and role of the various actors on-site. If necessary, the ESMP recommends the establishment or expansion of such units and the training of staff to allow the implementation of recommendations. Specifically, the ESMP provides a specific description of institutional arrangements, i.e., who is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most ESMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.
8. **Implementation Schedule**: The frequency, timing, and duration of mitigation measures and monitoring should be stated in the implementation schedule. Links between mitigation measures and the development of relevant institutions and legal requirements of the project should be stated.

9. **Reporting**: The order of information flow as it concerns monitoring reports should be clearly defined. The relevant officers to receive these reports should be those who have the authorities to facilitate the implementation of the results of the monitoring. These reports should also be communicated to the Bank via media to be agreed upon and specified in the ESMP. Adequate arrangements should be made by the Bank to facilitate the circulation of the ESMP through the selected means.

ANNEX VB: STEPS FOR ENVIRONMENTAL ASSESSMENT (EA) (LIBERIA'S ESIA PROCEDURAL GUIDELINES, 2017)

The Environmental Protection and Management Law of Liberia (EPML) (2003), Part III Section 6 Count I calls for the conduct of an Environmental and Social Impact Assessment prior to the commencement of all projects and activities specified in Annex I of said Law. The screening determines whether the proposed sub-projects requires a further EA (EIA/ESIA) or not. If it is determined that the project requires an EA, then the scoping is carried out to determine the coverage or scope of the EA study. The necessary steps in conducting an EA are listed below:

Step 1: Scoping and Terms of Reference

- a process to identify issues relevant for EA consideration and determine assessment methods to be used.
- Terms of Reference (ToR) for the EA study is normally prepared as an output of the scoping exercise. The ToR needs to be approved by the Environmental Protection Agency of Liberia (EPA), Food and Agriculture Organization (FAO), and the African Development Bank before proceeding with the EA.

Step 2: Baseline Data Collection

Baseline data pertaining to the physical, biological, cultural domain is collected to describe the status and trends of environmental factors against which predicted changes could be compared and evaluated.

Step 3: Identify Environmental Impacts

The EA exercise will identify potential impacts and assess its significance. The categories of impacts, direct, indirect, or cumulative, should be indicated.

Step 4: Design Mitigation Measures

The mitigation measures should include analysis of project alternatives, compensatory measures, corrective measures, and preventive measures.

Step 5: Public Consultation and Participation

The EA should consider public perspective and include them in the entire assessment process and should start early in the process.

Step 6: Develop an Environmental Management Plan (EMP)

The EMP should be developed primarily to document key environmental issues likely to arise from project implementation, prescribe mitigation measures to be integrated in the project design, design monitoring, and evaluation schedules to be implemented during

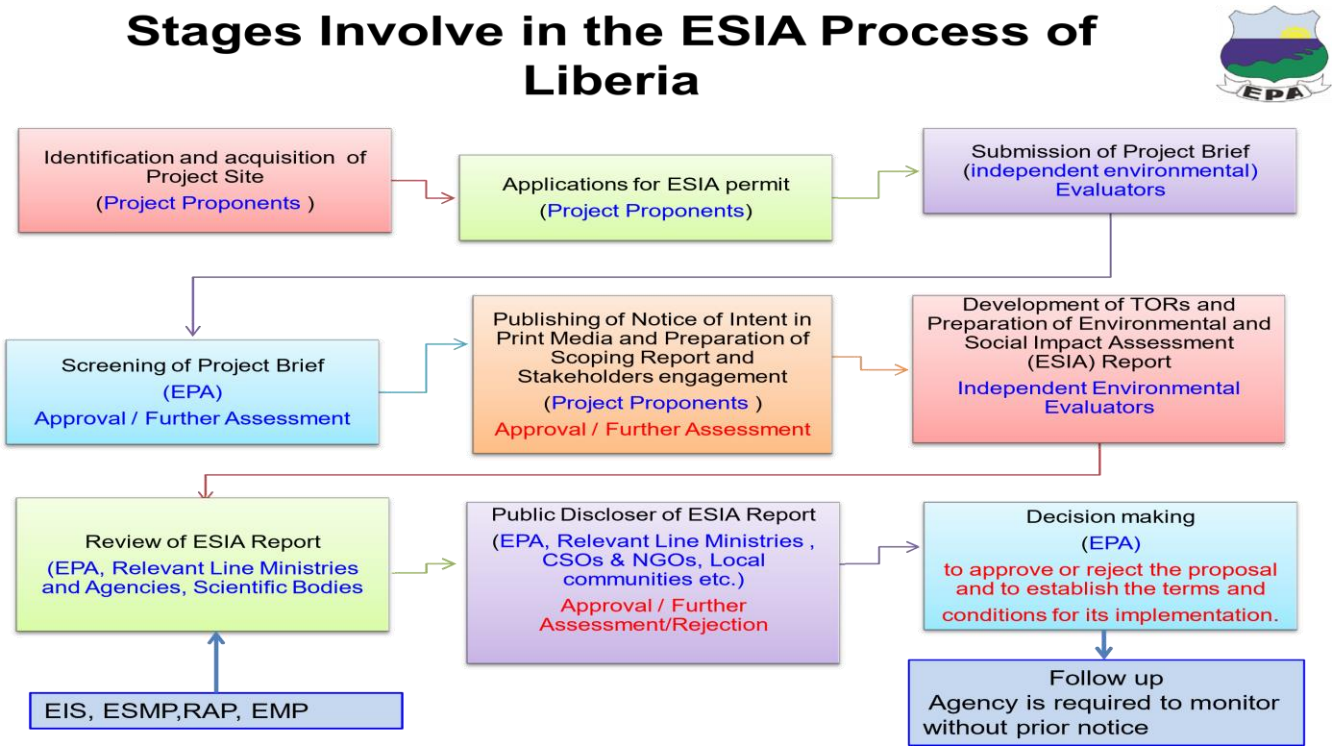
project construction and operation, and estimate costs required for implementing mitigation measures. This plan must be reviewed by the project management and approved before any construction activity is initiated by the sub-project.

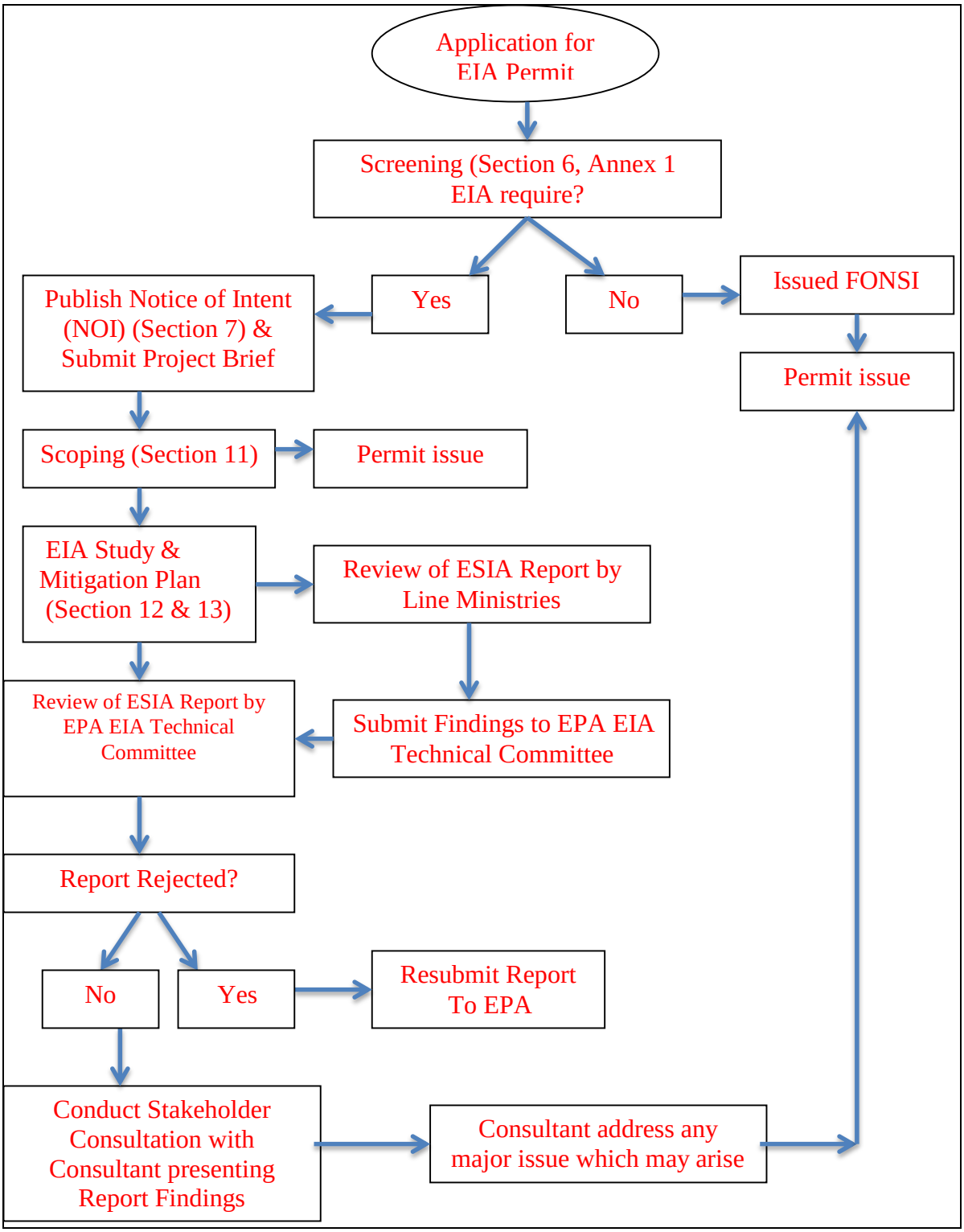
Step 7: Prepare the EA Report

An EIA/ESIA report should be prepared in line with the Environmental Protection Agency of Liberia (EPA) and the African Development Bank Format.

Step 8: Clearance

All EIA/ESIAs or EMP will be sent to the African Development Bank for review and clearance to ensure compliance with relevant policies, procedures, and guidelines.




Application for EIA Permit
Screening (Section 6, Annex 1 EIA require?
Yes
No
Issued FONSI
Permit issue
Publish Notice of Intent (NOI) (Section 7) & Submit Project Brief
Scoping (Section 11)
Permit issue
EIA Study & Mitigation Plan (Section 12 & 13)
Review of ESIA Report by Line Ministries
Review of ESIA Report by EPA EIA Technical Committee
Submit Findings to EPA EIA Technical Committee
Report Rejected?
No
Yes
Resubmit Report To EPA
Conduct Stakeholder Consultation with Consultant presenting Report Findings
Consultant address any major issue which may arise

ANNEX VC: DESCRIPTION OF ESIA COMPONENTS

This section provides detail description of the various components of the ESIA report.

Environmental Impact Statement

The Environmental Impact Statement (EIS) is the document produced after studying the potential environmental impacts of a proposed project. The EIS will provide all relevant details on the project and its effect on the environment. This document should provide a summary level of detail adequate to allow the average reader to make an informed decision on the project. This document will include a broad range of data, including information on the developer, schedule, and the detailed description of the project, regulatory framework, and review of alternatives, environmental management plans, socioeconomic factors, environmental impacts, mitigation, monitoring, and reclamation.

The completion of the EIS requires gathering necessary resource information, conducting field investigations, and using scientific methods to evaluate potential interactions between the environment and activities associated with the undertaking. The EIS would be accompanied by supporting appendices, the baseline study report, and the environmental assessment that will provide technical detail on specific issues, assumptions, and modeling projections. These supporting documents would be more technical.

An EIS must be written by an experienced professional with expertise in environmental issues of specific concern to the undertaking. It is the proponent's responsibility to prepare the EIS through an independent environmental evaluator at the cost of the proponent. The EIS should be prepared in a well-organized document in order to provide reviewers with enough information to understand what is being proposed and the environment in which the project is to be located. The EIS could be achieved by an independent consulting firm chosen by and paid for by the proponent. The proponent can be provided with a list of reliable and unanimous consulting firms that will act as a third party without prior intentions or unintended biases.

Contents of the Report

The Environmental and Social Impact Assessment (ESIA) report should contain a brief introduction explaining the need for the conduct of the project. There may be other applicable criteria of the project that may have to be reviewed. However, in order to avoid delay in the review process, the proponent should ensure that all sections listed below are included in the report.

1. Executive summary
2. Introduction or overview of the project
3. Policy, legal and administrative framework
4. Detailed project description
5. Description of the potentially affected Environment including specific information necessary for identifying and assessing the environmental effect of the proposed project of activities
6. Impact Prediction and Evaluation
7. Socio-economic analysis of project impacts

8. Economic Information regarding the project
9. Environmental Management Plan and Mitigation Measures
10. Identification of Alternatives
11. Environmental Management and Training
12. Monitoring Program
13. Public Participation
14. A Statement of the degree of irreversible damage and an explanation
15. A description of the best available technology
16. An emergency response plan
17. An indication of any difficulty encountered in the ESIA
18. Conclusion and Recommendations
19. List of References
20. Annexes

ANNEX VD: SOME PROJECTS ACTIVITIES REQUIRING AN ENVIRONMENTAL IMPACT ASSESSMENT MANDATORY LIST

Agriculture

- Cultivating natural and semi-natural not less than 25ha;
- Water management projects for agriculture (drainage, irrigation);
- Large scale mono-culture (cash and food crops)
- Pest control projects (i.e. tsetse, army worm, locusts, rodents' weeds) etc;
- Fertilizer and nutrient management;
- Agricultural programs necessitating the resettlement of communities:
- Introduction of new breeds of crops;
- Aria1 spraying

Livestock and range Management

- Large scale livestock movement
- Livestock market
- Introduction of new breeds of livestock
- Introduction of improved forage species
- Fencing
- Provision of public water supply (water points, wells)
- Ectoparasite management (cattle dips, area treatment)
- Intensive livestock rearing units
- Livestock routes

Forestry Activities

- Timber logging and processing
- Forest plantation and afforestation and introduction of new species
- Selective removal of single commercial tree species
- Pest management

Fisheries Activities

- Medium to large scale fisheries
- Artificial fisheries (aqua-culture for fish, algae, crustaceans, shrimps, lobster or crabs)
- Introduction of new species in water bodies

Wildlife

- Creation of national parks and game reserves
- Introduction of new species
- Wildlife catching and trading
- Hunting
- Wildlife ranching and farming
- Zoo and sanctuaries

Waste Treatment and Disposal

- a) Toxic and Hazardous Waste
- Construction of Incineration plants
- Construction of recovery plant (off-site)
- Construction of waste water treatment plant (off-site)
- Construction of secure landfills facility
- Construction of storage facility (off-site)
- Collection of transportation of waste
- **b) Municipal Solid Waste**
- Construction of incineration of plant
- Construction of composting plant
- Construction of recovery-cycling plant
- Construction of municipal solid waste landfill facility
- Construction f waste depots
- Collection of transportation
- **c) Municipal Sewage**
- Construction of waste water treatment plant
- Construction of marine out fall
- Nigh soil collection transport and treatment
- Construction of sewage system

Water Supply

- Canalization of water courses
- Diversion of normal flow of water
- Water transfer scheme and reservoirs
- Abstraction or utilization of ground and surface water for bulk supply
- Water treatment plants

Health Projects

- Vector control projects (malaria, bilharzias, trypanosomes etc)

Land Reclamation and Land Development

- Rehabilitation of degraded lands

- Coastal and land reclamation
- Dredging of bars, gerygones, dykes, estuaries etc.
- Spoil disposal

Multi-sectoral Projects

- Agro-forestry
- Dispersed field-tree inter-cropping
- Alley cropping
- Living fences and other linear planting
- Windbreak;/shelter belts
- Integrated conservation and development programmes e.g. protected areas
- Integrated Pest Management (e.g. IPM)
- Diverse construction-public health facilities schools, storage building, tree nurseries,
- facilities for ecotourism and field research in protected areas, enclosed latrines, small
- enterprise, logging mills, manufacturing furniture carpentry shop, access road, well
- digging, camps, dams, reservoirs
- River basin development and watershed management projects
- Food aid, humanitarian relief

General

- a) any activity out of character with its surroundings;
- b) any structure of a scale not in keeping with its surroundings;
- c) major changes in land use

ANNEX VIA: LIST OF BANNED PESTICIDES[15]

1. Aldrin
2. Chlordane
3. DDT (dichloro-diphenyl-trichloroethane)
4. Dieldrin
5. Endrin
6. Heptachlor
7. Toxaphene
8. Chlordimeform
9. Mercury Compounds
10. Lindane
11. Parathion
12. Methyl Parathion
13. Methyl bromide
14. Hexachlorobenzene

[15] *PMP for Integrated Pest Management for Liberian REDISSE Project*

ANNEX VIB: LIST OF APPROVED INSECTICIDES

Organochlorines Insecticides	Organophosphorus Insecticides	Carbamates	Pyrethroids
Endosulfan Helptachlor Lindane (Restricted to use on Cocoa only)	Organophosphorus Diazinon Dichlorvos (DDVP) Chlorpyrifos Chlorpyrifos – Methyl Dicrotophos Dimethoate Monocrotophos Perimiphos – Ethyl Perimiphos – Methyl Ethion Rugby (Cadusofas) Malathion Temeguard (Temephos) Isazofos Parathion Methyl Phosphamidon	Carbaryl Carbofuran Propoxur Carbosulfan Furathiocarb Temik (Aldicarb)	Lambda Cyhalothrin Cypermethrin Deltamethrin Phenothrin Permethrin Tetramethrin Cyfluthrin Allethrin

ANNEX VI: BASIC CHECKLIST WHICH CAN BE USED TO COMPILE THE DESCRIPTION OF THE ENVIRONMENTAL SETTING

1. Basic Land conditions

a. Geological Conditions

- Major land formations (valleys, rivers, mountains, plains etc.)
- Geological structures (faults, folds, sub-strata, etc)
- Geological resources (minerals, oil, & gas, etc.)
- Seismic hazards (earthquakes, faults, liquefaction, tidal wave, etc.)
- Slope stability and landslide potential

b. Soil Conditions

- Soil type (clay, sandy, silt, loams, etc.)
- Soil conservation service, classification
- Hazard potential (erosion, subsidence or expansiveness)

- Natural drainage rate
- Sub-soil permeability
- Run-off rate
- Effective depth
- Inherent fertility
- Suitability for method of sewage disposal
- Suitability for landfill

c. Archaeological value of site

- The amount and quality of information already on record
- The ground covers
- The visibility of various classes of site
- The anticipated use of data

2. Biotic Community Conditions

a. Plant

- General type of dominant species
- Densities and distributions
- Animal habitat value
- Historically important specimen
- Watershed value
- Man-introduced species
- Endangered species (location, distribution and conditions)
- Fire potential (chaparral, grass, etc.)
- Timber value
- Specimen of scientific or aesthetic interest

3. Watershed Conditions

- Water quality (groundwater and surface water)
- Source of public or private water supply on-site
- Watershed importance (on-site and surrounding area)
- Flood plain importance (on-site and surrounding area)
- Water run-off rate
- Streamside conditions (habitat conditions and stream flow rate)
- Location of wells, springs
- Marshlands, lakes, ocean frontage importance

5. Social Economic Condition

- Environmental Protection Agency
- Livelihood Activities
- Type of Human Settlement
- Gender
- Religion and Cultural Activities Human Capital (Education & Health)
- Physical Capital (infrastructure, Safety & Security)

- Resettlement

ANNEX VII: ISSUES TO BE CONSIDERED WHEN PREPARING THE TERMS OF REFERENCE

1. Ecological consideration, including

a. **Biological diversity**

i) Effect on number, diversity, breeding sites, etc. of flora and fauna
ii) Breeding populations of fish and game; and
iii) Effects on the gene pools of domesticated and wild sustainable yield.

b. **Sustainable use including**

i) Effects of soil fertility;
ii) Nutrient cycles;
iii) Aquifer recharge, water run-off rates, etc;
iv) Aerial extent of habitats; and
v) Bio-geographical processes.

2. Social, economic and cultural considerations including:

a) Effects on generation or reduction of employment in the area;
b) Social cohesion or disruption (resettlement);
c) Immigration (including induced development when people are attracted to a development site because of possible enhanced economic opportunities);
d) Communication - roads opened up, closed, re-routed; and
e) Local economic impacts.

3. Landscape

a) Views opened up or closed.
b) Visual impacts (features, removal of vegetation, etc.).
c) Compatibility with surrounding areas.
d) Amenity opened up or closed e.g. recreation facilities.

4. Land Use

a) Effects on land uses and land potential in the project area and in the surroundings areas.
b) Possibility of multiple uses.

5. Water

a) Effects of surface water quality and quantity.
b) Effects on underground water quality and quantity.
c) Effects on the flow regime the water course.

6. Air Quality

a) Effects on the quality of the ambient air of the area.
b) Type and amount of possible emissions (pollutants).

ANNEX VIII C: GENERIC CHECKLIST OF POTENTIAL IMPACTS OF THE PROPOSED PROJECT.

The following checklists were used as guidance in the data collection process for the development of this ESMF.

Data Collection tool

A	**PROJECT NAME**			
	Project Location (County, District, Town)			
	Date of Screening			
B	**DESCRIPTION OF ACTIVITY**			
	Land area to be taken by project activity, in hectare			
	Any existing property to be affected, and by how much (total, partial demolition etc.)			
	Any plans for construction, movement of earth, changes in land cover			
C	**PRELIMINARY ENVIRONMENTAL INFORMATION**			
		Yes	**No**	**Comment**
	Is there adjacent/nearby critical natural habitat?			
	Are there activities at the project site?			
	What is the current land use?			
	Will the proposed activities have any impact on any ecosystem services, biodiversity issues or natural habitats?			
	Will there be restrictions or loss of access to public facilities or resources?			
	Will there be water resource impacts?			
	Will there be vegetation and soil impacts?			
	Will the air quality or noise impacts?			
	Are there any new or changing river basin management planning or activities?			
	Any cultural heritage/sacred sites in the project area?			
D	**PRELIMINARY SOCIAL INFORMATION RELATIVE TO THE PROJECT AREAS**			
		Yes	**No**	**Comment**
	Has there been litigation or complaints of any environmental nature directed against the proponent or subproject?			
	Will the subproject require the acquisition of land?			
	What is the status of the land holding required by the project (customary, lease, community lands, etc.)?			

	Is there evidence of land tenure status of landowners and/or occupants			
	Are there outstanding land disputes?			
	Has there been proper consultation with stakeholders?			
	Is there a grievance process identified for PAPs and is this easily accessible to these groups/individuals?			
	Will there be any changes to livelihoods?			
	Will any restoration or compensation be required with Affected persons?			
E	**IMPACT IDENTIFICATION AND CLASSIFICATION**			
			Comment	
	Natural Habitats	**LOW** (No natural habitats present of any kind)		
		MEDIUM (No critical natural habitats; other natural habitats occur)		
		HIGH (Critical natural habitats present; within declared protected areas)		
	Water Resources	**LOW** (Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues)		
		MEDIUM (Medium intensity of water use; multiple water users; water quality issues are important)		
		HIGH (Intensive water use; multiple water users ; potential for conflicts is high; water quality issues are important)		
	Natural hazards	**LOW** (Flat terrain; no potential stability/ erosion problems; no known flood risks)		
		MEDIUM (Medium slopes; some erosion		

		potential; medium risks from floods)		
		HIGH (Mountainous terrain; steep slopes; unstable soils; high erosion potential; flood risks)		
	Land tenure	**LOW** (No conflicts, disagreements around use of land)		
		MEDIUM (Process of land regularization and rights to natural resources being worked out with clear communication and grievance process in place)		
		HIGH (Land conflicts historically unresolved, community/ persons being evicted, settlers loosing rights and no transparency or grievance redress available)		
F	**SUMMARY OF SITE SENSITIVITY**			
			Tick appropriately	**Comment**
	[A]	**HIGH**		
	[B]	**MEDIUM**		
	[C]	**LOW**		
G	**IMPACT MITIGATION**			
	Impacts Identified			
	Mitigation options			
H	**DETERMINATION OF ENVIRONMENTAL CATEGORY BASED ON SCREENING**			
			Tick appropriately	COMMENT
	Requires an ESIA			
	Requires preparation of Additional E&S information to support ESMF			
	Does not require further environmental or social due diligence			

Irreversible, Negative and Potential Impacts of the Proposed Project

POTENTIAL IMPACTS	Estimated Magnitudes
EFFECTS ON HUMAN BEINGS, BUILDINGS AND MAN-MADE FEATURES:	
Change in population arising from the development, and consequential environmental effects	
Visual effects of the project on the surrounding area and landscape	
Levels and effects of emissions associated with project implementation	
Levels and effects of noise from the project implementation	
Effects of the project on local roads and transport	
Effects of the project on public health and safety	
EFFECTS ON FLORA, FAUNA	
Loss of, and possible damage to, habitats and animals species.	
Loss of ,and possible damage to, geological, paleontological and physiographic features	
EFFECTS ON LAND	
Physical effects: change in local topography, erosion control problems	
Effects of chemical emissions and deposits on sol from project machinery	
Land use effects: quality and quantity of Agricultural land taken up	
• Deprivation of mineral resources	
• Waste disposal	
• Effects on surrounding land uses including agriculture	
EFFECTS ON WATER	
Effects of the project on the drainage pattern of the project area	
Changes in ground water level, water courses ,flow of underground water	
Effects of pollutants on water quality	
EFFECTS ON AIR AND CLIMATE	
Level of concentration of gaseous emissions and their environmental effects	
Particulate matter	
Offensive odors	
General climatic changes	
Effects on the ambient temperature of the Project Area	
SOCIAL ISSUES & OTHER INDIRECT AND SECONDARY EFFECTS ASSOCIATED WITH THE PROJECT	
Social issues associated with the project such as Gender-Based Violence, Labor Influx, Social conflicts, etc.	
Effects from traffic (road, air)related to the Project	

Effects arising from the extraction and consumption of materials, water, energy, or other resources by the Project	
Effects of other activities associated with the Project, e.g., inflation, chance finds, roads safety	
Issues for people with disabilities, etc.	
Secondary effects resulting from the interaction of separate directs listed above	

*Magnitude=low, medium, or high

This list includes direct and indirect, secondary, cumulative, short, medium and long-term, reversible, and irreversible.

ANNEX IX: CONSULTANT'S TERM OF REFERENCE OF ESMF

As part of the assignment, the Consultant is required to visit all the project sites and engage with the relevant stakeholders of the program (in-country consultations and field visits) where subprojects will be proposed, approved, and implemented. The Consultant is also required to undertake a detailed analysis of the environmental and social risks posed by the proposed project interventions and incorporate their findings into an ESMF report that will be used in managing environmental and social risks arising out of the project. The ESMF should be in-line with the guidance provided in the AfDB Integrated Safeguards System. The Individual Consultant's Scope of Work for the development of the ESMF includes the following:

1. Review the Integrated Safeguards System of the African Development Bank with emphasis on the requirements for an ESMF.
2. Undertake a gap assessment of national policies and regulations and the (AfDB) environmental and social safeguards policies and standards
3. Summarize the project and subprojects environmental and social impacts.
4. Prepare an overview of the legislative, regulatory, and administrative framework within which the project will operate in Liberia, with a focus on requirements applicable to the planning/design, approval, and implementation of subprojects.
5. Collect the environmental and social baseline information at national and regional levels of the areas where the project will be implemented
6. Outline procedures for conducting an appropriate level of environmental and social assessment of subprojects, consistent with the bank's Operational Safeguards, identifying the impacts to be managed or mitigated.
7. Prepare procedures for identifying and screening environmental and social issues of subprojects during project implementation (screening checklists and identification of cumulative, indirect, and induced impacts, in line with relevant AfDB E&S, safeguards standards, and other applicable standards). Screening has the following purposes:
    a. screen subprojects for the potential environmental and social risks and impacts;
    b. Determine the specific instrument(s) to be prepared for each subproject. A checklist is often useful in screening E&S issues. In this section, the screening checklist should be described, and the mechanics of its use on subprojects are to be presented. The actual screening checklist should be presented as an Annex of the ESMF.
8. Prepare procedures for preparing and approving site-specific safeguard instruments. These procedures should include:
    a. A framework of actions to guide the development of an Environmental and Social Management Plans of subprojects (including identification of mitigation measures;

b. The objective of each measure, its specific implementation requirements and responsibilities, its' technical and operational requirements, including timing, the targets to be achieved, and performance indicators for monitoring and supervising the adequacy of safeguard implementation.
c. The chance find procedures and management plans to identify and avoid impacts on physical, cultural resources in line with AfDB OS 2 requirements.
d. Generic safety measures for infrastructure and construction activities.

9. Determination of institutional capacity for implementing the ESMF. This should include an analysis of the authority and capability of the relevant institutions at local, district, county, and national levels and their capacity to manage, monitor, and supervise the implementation of the ESMF. Also to be included is a description of the institutional arrangements for project implementation with a focus on points of accountability (who will do what) for specific functions on environmental and Social safeguards. This would include a clear definition of roles and responsibilities of project staff and associated agencies in subproject implementation and application of environmental and social review, preparation, and implementation of safeguard instruments, monitoring, and evaluation but also training, staffing, budgeting, and financial support.
10. Outline the requirements for consultation with local communities and stakeholders, both during subproject preparation and ESMP development and during subproject implementation.
11. Outline the grievance redress mechanism to provide stakeholders and potentially affected communities and households avenues to provide feedback or grievances and receive responses with regard to the implementation of sub-projects throughout the life of the projects.
12. Outline the requirements for monitoring and subproject supervision to ensure that the Management measures are satisfactorily implemented, and that the agreed targets for environmental and social protection are achieved. A supervision plan should be prepared with guidance on thresholds or triggers for initiating corrective action and safeguard performance indicators to enable the Bank to evaluate compliance with safeguards and determine the need for corrective actions. As well, including the scope, timing, and responsibilities for reporting on the ESMF. This should include specific actions to be taken by the borrower or client to report promptly on failure to implement measures successfully or to meet the desired targets and remedial actions.
13. Where needed, outline the requirements for capacity strengthening or training deemed appropriate for the government agency involved in the ESMF implementation or monitoring. This may include the establishment or expansion of an environmental and social management unit within the borrower organization. Other elements may include technical cooperation programs, equipment and supplies procurement, and organizational changes.
14. Where needed, outline the requirements for technical assistance to communities, service providers, and public sector institutions to support the implementation of the ESMF. This may involve supporting studies examining, for example, changing access to natural resources or potential impacts upon a protected area.
15. Summarize the in-country disclosure and approval requirements as well as those of the AfDB and FAO as applicable to the projects under the program.
16. Based on the assessments above, outline an estimated budget for the implementation of the ESMF for subprojects.

ANNEX X: RECORD OF STAKEHOLDERS' CONSULTATION ATTENDEES

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: Grand Bassa County
VENUE: DEWAIN
DATE: September 24, 2020
TIME: 11:50

Willetema Women Association

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
1. Alfred Binda	Rural woman	—	
Yatta Binda	Chairlady	0776	YATTA
Lexington Humphrey	✓	0778[illegible]	J.A
Junior David	✓	—	
Rufus Johnny Cooper	MOA	—	
Joyce Kolvah.	MOA	—	
Richard Yuwah	Liberian woman		

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: Bomi County
VENUE: Bomana Farm
DATE: September 21, 2020
TIME: 11:14am

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Leesay J. Mensah	MOA/CAC	0779087263	
MoModu Grey	(YPC)/CEO	0777647517	
Helwa Grey	Farman	0776577492	H. G
John Saah	Farmar	0881793884	
Verney Balleh	"	0776524564	
Bomah Darley	Farmer	0770018214	
B. Jerry Saydee	"	0888772924	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: Grand Bassa County
VENUE: Dewan Town
DATE: Sept 24, 2020
TIME: 11:45 am

WELLEKAMA WOMEN ASSOCIATION

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Flomo Binda	Wellekamah Luewein Rural Town)	—	
Watchee Kwennah	farmer	—	
Mary FARR	"	—	MF
Hannah Nadeh	"	—	

Work Force
Men 10 – Women 50

September 18, 2020

GAFSP PROJECT – ESMF

STAKEHOLDERS CONSULTATION

EPA REPRESENTATIVE – GRAND GEDEH COUNTY

Name	Institution/position	Contact	Signature
1. Perry Z. Newray	LEPA/County Head Grand Gedeh/River Gee	0886496476 0776161464	
2. Joseph C. Kamaty	MOA Technician	0880948957	
3. Godwin K Senagah	ESMF Specialist/FAO	0886844556	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: Grand Bassa County
VENUE: Fetuah Town
DATE: Sept 24, 2020
TIME: 1:25pm

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Martha Yarkpawolo	Teacher	0775152662	
Angeline Flomo	Farmer	N/A	A.F
Junior Kolleh	Farmer	N/A	
Papa Kiamue	Farmer	N/A	
Jacob Jimmy	Student	0775598369	J.J
Kiamue Farwood	Farmer	N/A	
Emmanuel Yarkpawolo	Farmer	N/A	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: Grand Bassa County
VENUE: Fetuah Town
DATE: September 24, 2020
TIME: 1:25pm

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Amos K. Jimmy	Elder	0779058871	
John Yarkpawolo	Elder	—	
Samuel Jimmy	Young Elder	0775536693	S.J.
Moses T. Kiamue	Teacher	0778875777	
Solomon Yarkpawolo	Farmer	0777564608	
Ben Koimore	Town Chief	0775872276	
James Gbellemah	Farmer	—	
Mary Gbellemah	Farmer		

GAFSP PROJECT - ESMF

STAKEHOLDER CONSULTATION - JARWODEE

ATTENDANCE

DATE: SEPT. 18, 2020

NAME:	INSTITUTION/POSITION	CONTACT	SIGNATURE
1. ALBERT S. BLITAYE	MIA SECRETARY act. SUPT.	0888981727 0777003598	[signature]
2. Oretha KULEE	Farmer	0886916609	[signature]
3. JOHN KARR	Farmer ~~0886 30 4294~~	0886 304294	JK
4. Jerry G. Karr	farmer Chairman	0888607064 0778863373	[signature]
5. Hitlar Gee	Farmer		HG
6. Victoria Totaye	"		VT
7 Vivien Blitaye	"		VB
8 Joanna Glay	"		JG
9 David Zleh	"		DZ
10 Moses Zumeh	"	0881189612	MZ
11 Doris Gbeyer	Chairlady		
12 Jefferson Gbarjolo	Farmer Youth	0888045912	J. Gbarjolo
13 Sampson J. Karr	" Ass. farmer	0555710580	
14 Charles Beh	" Farmer Co Chair		[signature]
15 D. Kelvin Zarty	" " Sec	0880295387	[signature]
16 Madison Totaye	" Youth	0555311123	[signature]
17) Z. Lincoln Gbarjolo	" "	0888074295	[signature]
18. G. Melvin Zorway	" "	~~0886-492667~~	[signature]
19 MARK T-Zawng	" "	088833[illegible]	MTZ
20) STEPHEN Weagba	" "	0881443755	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: ~~BOMA COUNTY~~
VENUE: RAMADA Twin
DATE: 09/24/20
TIME: 2.15pm

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Roberta J. Vincent	~~FAMM~~	0880658985	
Gretude Salifu	~~united~~ madiah	0770728014	
James G Morris	~~united~~ madiah		
George Fusu	united madiah		
Zuannah Kamara	united Madiah	0880011408	
patricia Kifa	united madiah		
Elizabeth Archie	united Madiah	0778199413	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: BOMA COUNTY
VENUE: Red Cross Center
DATE: September 22, 2020
TIME: 9.45am

CONSULTATION WITH THE DEVELOPMENT SUPERINTENDENT

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
Amos M. Cooper	MIA Dev. Supt.	0770036009	
Leesay J. Mensah	MOA/CAC	0779087263	

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

CBO - Membership 10
Location - Tiah Town
Bentol

REF: Montserrado County
VENUE: Bentol
DATE: September 22, 2020
TIME: 3:40pm
Ku KATIAMNOH – CBO

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
AMOS G E Zeon	CAC/MOA Montserrado	0886-635-373 0777-635-373	
Lormu Varmon	Konfaforon CBO	0886-15-61-15	Lormu
Esther Kortea	CBO member	077-50-74-441	E. Kortea
Everly George	CBO - member	0777-43-82-51	E. George
Sernea Kollie	CBO - Member	0776-527-350	S. Kollie
Lormu Flomo	CBO - member	N/A	L/Flomo
Thomas Paynes	CBO - member	0770-218-808	T. paynes

GAFSP PROJECT - ESMF
STAKEHOLDER'S CONSULTATION - WORK & SEE
ATTENDANCE
DATE: Sept. 19, 2020

NAME:	INSTITUTION/POSITION	CONTACT	SIGN.
1. Joseph C Kamara	MOA Technician	0880948957	
2. Yahaya Trawally	Work & See Chairman	0886460219	
3. Lassana S. Kenneh	Work&See Member	0555255273	
4. Mafata Kamara	Work and See member		
5. Sekou Kamara	Work&See member	0889602215	
6.			
7. Kavamor Kemneh	Work and See member		
8. Adama Sedeboy	W and See member		
9. Sakorba Bility	W. and See member		
10. Mohamed Trawally	Work and See Field assist.	0886366620	
11) Amadou Soumarrow	Work and See member		
12) Mohamed Konneh	Work&See member		
13) Abou Trawally	Work&See member	0888711072	
14. Anssou Donzoh	Work&See member		
15. Youssou Konneh	Work&See member		
16. Morrise Kenneh	Work&See member		
17. Mamafin Kromah	Work and See member		
18. Gofine Konneh	Work&See member		
19. Sedekie Kamara	Work and See member		
20. Mohamed Sangaree	Work and See "		
21. Felie Kromah			

GAFSP PROJECT – ENVIORNMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

STAKEHOLDER'S CONSULTATION

REF: EPA CONSULTATION
VENUE: EPA
DATE: Oct. 20, 2020
TIME: 9:00 AM

CONSULTATION WITH DEPT. OF COMPLIACE AND ENFORCEMENT

ATTENDANCE LOG

NAME	INSTITUTION/ POSITION	CONTACT & EMAIL	SIGNATURE
John K. Jallah Jr	EPA / Manager of Compliance	0888121715 jjallah@epa.gov.l	
Edward G. Wingbah	EPA/Asst Manager	0886576150 ewingbah@epa.gov.lr	
R. Baiyezeah W. Brown	EPA/Asst. Manager Technical	0886536831 rbrown@epa.gov.lr	
GREGORY ROBERT MORRIS	ENVIRONMENTAL ANALYST	0881439248 morrisgregoryr@gmail.	

ANNEX XI: SAMPLE OF LETTERS SENT TO STAKEHOLDERS

منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Agricultura y la Alimentación

8th Floor, One UN House
Pan African Plaza
1st Street, Sinkor
Monrovia, Liberia

E-Mail: FAO-LR@fao.org

Telephone: (Direct) +231-776737530
+231-776737525

THE OFFICE OF THE FAO REPRESENTATIVE IN LIBERIA

Our Ref.: CA 7/1

Your Ref.:

16 September, 2020

Dear Hon. Dobayou,

I present my compliments and would like to inform you that **MR. GODWIN K. SENAGAH** has been contracted by Food and Agriculture Organization of the United Nations ("FAO") as its Environmental & Social Management Framework (ESMF) consultant for the Smallholder Agriculture Development for Food and Nutrition Security Project in Liberia.

Mr. Senagah is responsible for developing a framework safeguards instrument to be used for the implementation of the Project.

The ESMF is a statement of the policy, principles, institutional arrangements and procedures that the project proponents will follow in each subproject in addressing environmental and social issues. As part of the assignment, the Consultant is required to visit all the project sites and engage with the relevant stakeholders of the program (in-country consultations and field visits) where subprojects will be proposed, approved and implemented.

Based on the above, Mr. Senagah is conducting an appraisal of the proposed project areas and/or activities in order to undertake a detailed analysis of the environmental and social risks posed by the proposed project interventions and incorporate their findings into an ESMF report that will be used in managing environmental and social risks arising out of the project.This exercise will require a wide range of consultations and participation of affected communities.

In this light, Mr. Senagah will be visiting your office in order to apprise you of the studies as well as generating inputs and comments to inform the decision making process. We will appreciate your kind cooperation and understanding.

Please accept the renewed assurances of our highest consideration.

Best regards.

Sincerely yours,

Mariatou Njie
FAO Representative in Liberia

Hon. Randall Dobayou
Acting Executive Director
Environmental Protection Agency
3rd Street, Sinkor
Monrovia-Liberia

cc: Mr. Godwin K. Senagah, Consultant