



*Ministry of Agriculture, Forestry
and Food Security*

**WEST AFRICA AGRICULTURAL
TRANSFORMATION PROGRAMME
(WAATP-SIERRA LEONE)**

**Environmental and Social Framework
(ESMF)**

FINAL VERSION

Prepared by
Project Coordination Unit
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LIST OF ACRONYMS

| | |
|---------|--|
| AfDB | African Development Bank |
| EPA- SL | Sierra Leone Environmental Protection Agency |
| ESIA | Environmental and Social Impact Assessment |
| ESMF | Environmental and Social Management Framework |
| ESMP | Environmental and Social Management Plan |
| GoSL | Government of Sierra Leone |
| MAFFS | Ministry of Agriculture, Forestry and Food Security |
| NaFFSL | National Federation of Farmers of Sierra Leone |
| NARC | Njala Agricultural Research Centre |
| NCoS | National Centre of Specialization |
| PCU | Project Coordinating Unit |
| PPE | Personal Protective Equipment |
| RARC | Rokupr Agricultural Research Centre |
| RCoE | Regional Centre of Excellence |
| RPF | Resettlement Policy Framework |
| SLARI | Sierra Leone Agricultural Research Institute |
| SLeCAD | Sierra Leone Chamber for Agricultural Development |
| TLRC | Tecko Livestock Research Centre |
| WAAPP | West Africa Agricultural Productivity Programme |
| WAATP | West Africa Agricultural Transformation Programme |
| WB | World Bank |
| WECARD | West and Central African Council for Agricultural Research and Development |

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Executive Summary

Introduction

The Project Development Objective (PDO) of the WAATP is to accelerate adoption of agricultural improved technologies and innovations by small scale producers and contribute to improve enabling environment for regional market integration in the ECOWAS region and enable the Governments to respond promptly and effectively to eligible emergencies.

In addition to the two value chains (Rice and Cassava) supported under WAAPP, WAATP is expected to support the livestock value chain (mainly poultry and small ruminants). The emphasis of WAATP will be the wide dissemination and mass adoption of technologies of Rice and Cassava developed under WAAPP; while for poultry and small ruminants the focus will be on promoting the adoption of proven technologies developed by other countries.

Objectives of ESMF

The objective of this assignment is to undertake a detailed Environmental and Social Management Framework (ESMF) focusing on key activities outlined under the project components. The ESMF sets out the principles, rules, guidelines, and procedures to assess the environmental and social risks and impacts and propose preventive and mitigation measures to enhance the sustainability of the project. The specific project intervention areas are not known at the time of preparation and the ESMF will provide guidance for further screening and Environmental Assessment as may be determined from the screening results.

Project beneficiaries and components

The primary project beneficiaries include agricultural producers and processors, women groups, SMEs, youth, and other value chain actors. Additional beneficiaries will include research institutions, public and private advisory services, government institutions, and regional institutions fostering agricultural development and markets development across West Africa. The program will target at least 50 percent of women and at least 30 percent of youth and young adults (18 – 35 years).

The proposed project has five primary components and together with their sub headings are as follows:

- Component 1: Strengthening the new model of Innovation delivery in West and Central Africa
 - Sub-Component 1.1: Support to NCS/RCE development/strengthening
 - Sub-Component 1.2: Strengthening of adaptive research (R&D)
- Component 2: Accelerating mass adoption of improved technologies and innovation
 - Sub- component 2.1: Demand driven market based mass adoption of technologies and innovations
 - Sub- component 2.2 Strengthening the seed sector
 - Sub- component 2.3 Jobs for Youth
- Component 3: Policies, Markets and Institutional Strengthening
 - Sub- component 3.1 Regional policies and regulations

- Sub component 3.2 Regional markets development for targeted products
- Sub component 3.3 National and Regional Institutional capacity building
- Component 4: Contingent emergency response
- Component 5: Project management, learning, monitoring and evaluation
 - Sub- component 5.1 Harmonized coordination and management
 - Sub- component 5.2: M&E, Knowledge management communication

The Components 1 and 2 will involve provision of infrastructure and other services which may be accompanied by some environmental and social concerns and therefore subject to screening, even though these are anticipated to be of minor to moderate significance. These are described as follows:

Component 1

Procurement of works

NCoS Infrastructure/ equipment

- Upscaling of electricity provision preferably with solar sources of electricity
- Upscaling of water supply systems including solar powered pumping machines
- Reinforcement wall to contain erosion of biological sciences laboratory
- Rehabilitation of library facilities
- Provision of high speed internet facility
- Upgrading of research facilities (screen houses and soil laboratories)
- Rehabilitation of deep water tank system

NARC- Cassava Infrastructure/ equipment

- Upgrading electricity provision to office and laboratories
- Upgrading water supply, filtration and distillation systems to office/ laboratories and residential sites
- Provision of high speed internet facility
- Rehabilitation and upgrading of cassava processing centre for production of high quality cassava flour

TLRC- Poultry and small ruminants

- Construction of poultry houses
- Construction of small ruminant houses
- Provision of high speed internet facility

Research (trials, data collection and analysis, evaluation and documentation)

- Screening of mangrove varieties for biotic and abiotic stress, including the use of the deep water tank system
- Maintenance of mangrove and lowland breeding lines
- Bio- fortification of rice (high zinc etc)
- Integrated soil fertility management
- Screening for stress tolerance and varietal improvement using marker assisted technology
- Integrated Pest Management

- Integrated soil fertility management (deep placement of urea super- granules in mangrove rice)

Component 2

Scaling up of technology dissemination

- Establishment of demonstration trials through Farmer Field Schools (FFSs) and Farmer Business Schools (FBSs) for rapid dissemination of released technologies

Introduce and demonstrate (and promote) new improved technologies

- Rice production and post- harvest and marketing
- Cassava production and post- harvest and marketing
- New improved technologies for poultry and small ruminants

Diversification of farm/ rural activities

- Commercial vegetable production
- Establishment of hatchery facility for the production of fingerlings for fisheries and aquaculture

National seed system

- Rehabilitation and equipping the seed certification laboratory
- Rice seed production
- Decentralized cassava planting material production

National Policy, Regulatory and Institutional Framework

The key Sierra Leonean agricultural policies as well as environmental and other statutory laws and regulations to guide WAATP from conceptualization of the proposed project to implementation and monitoring as well as decommissioning include the following:

- Agricultural Policy
- The Land Policy, 2005;
- Environmental Protection Agency Act, 2008 and the EPA (Amendment) Act, 2010;
- The Local Government Act, 2004;
- The Constitution of Sierra Leone, 1991;

Some of the relevant institutions include the following, and mandates and interest in project are subsequently described in the report:

- Ministry of Agriculture, Forestry and Food Security (MAFFS);
- Ministry of Lands and Country Planning;
- National Federation of Farmers in Sierra Leone
- Sierra Leone Agricultural Research Institute
- Sierra Leone Environmental Protection Agency (EPA- SL);
- Non-Governmental Organisations (NGOs).

World Bank Safeguard requirements

This document is in accordance with the Environmental Protection Agency Act, 2008 and the EPA (Amendment) Act, 2010. It is also in line with the World Bank's commitment to sustainable development. Safeguards policies triggered to support the project development objectives include the Environmental Assessment (OP/BP 4.01), Pest management (OP/BP 4.09), and the Involuntary Resettlement (OP/BP 4.12).

Description of some potential impact issues

The potential environmental and social risks and impacts associated with the specific project component activities are listed below.

Sub-project activities and potential environmental and social impact issues/ concerns

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|---|--|--|
| | Environmental | Social |
| <ol style="list-style-type: none"> 1. Upscaling of electricity provision preferably with solar sources of electricity 2. Upgrading water supply, filtration and distillation systems to office/ laboratories and residential sites 3. Reinforcement wall to contain erosion of biological sciences laboratory 4. Rehabilitation of library facilities and laboratories 5. Provision of high speed internet facility 6. Rehabilitation of deep water tank system 7. Rehabilitation and upgrading of cassava processing centre for production of high quality cassava flour 8. Construction of poultry and small ruminant houses 9. Screening of mangrove varieties for biotic and abiotic stress, including the use of the deep water tank system | <p><u>Biodiversity losses</u></p> <ul style="list-style-type: none"> ✓ Fauna and flora losses from project activities and also due to poaching and land conversion in natural resource areas near project sites <p><u>Deforestation</u></p> <ul style="list-style-type: none"> ✓ Extensive agriculture leading to deforestation <p><u>Water resources and pollution</u></p> <ul style="list-style-type: none"> ✓ Pollutant discharges into local water bodies both surface and groundwater ✓ Disposal of treated wastewater ✓ Exposure to agrochemicals including pesticides ✓ Sediment movement into water bodies from poor land clearing practices <p><u>Vegetation losses, soil disturbance and Erosion</u></p> <ul style="list-style-type: none"> ✓ Site clearing ✓ Increased soil erosion due to disturbances | <p><u>Land and compensation issues</u></p> <ul style="list-style-type: none"> ✓ Clear understanding of land use and occupancy ✓ Conflicts in land claims ✓ Land acquisition and compensation issues ✓ Discrimination, lack of grievance mechanisms for land owners and users ✓ Temporary and permanent properties affected by project <p><u>Maintaining Livelihoods</u></p> <ul style="list-style-type: none"> ✓ Community acceptance of improved technologies and approaches ✓ Demand for alternative/ additional sites to carry out trials ✓ Adequate, documented and transparent compensation for affected persons in order to vacate or release land for trials ✓ Disruption of work programs from rehabilitation and upgrading works <p><u>Security and Safety</u></p> <ul style="list-style-type: none"> ✓ Safety and security of laboratory and field workers |

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|---|--|---|
| | Environmental | Social |
| <p>10. Maintenance of mangrove and lowland breeding lines</p> <p>11. Bio- fortification of rice (high zinc etc)</p> <p>12. Screening for stress tolerance and varietal improvement using marker assisted technology</p> <p>13. Integrated Pest Management</p> <p>14. Integrated soil fertility management (deep placement of urea super-granules in mangrove rice)</p> <p>15. Establishment of demonstration trials</p> <p>16. Rice and cassava production and post-harvest and marketing</p> <p>17. New improved technologies for poultry and small ruminants</p> <p>18. Commercial vegetable production</p> <p>19. Establishment of hatchery facility for the production of fingerlings for fisheries and aquaculture</p> <p>20. Rice seed production</p> <p>21. Decentralized cassava planting material production</p> | <p>✓ Soil salinization, acidification</p> <p><u>Air quality</u></p> <p>✓ Site clearing and excavation works</p> <p>✓ Transport of construction materials and waste</p> <p>✓ Exhaust emissions for equipment including heavy duty trucks</p> <p><u>Vibration and Noise</u></p> <p>✓ Site clearing and excavation works</p> <p>✓ Concrete works</p> <p>✓ Cutting of roads</p> <p>✓ Disturbance to offices/ laboratory workers/local communities and general public</p> <p><u>Visual intrusion</u></p> <p>✓ Construction sites</p> <p><u>Generation and disposal of solid waste</u></p> <p>✓ Construction waste</p> <p>✓ Disposal of Obsolete chemicals and unusable equipment/ materials</p> <p>✓ Disposal of laboratory waste</p> <p>✓ Disposal of wastes generated from field trials and by laboratories</p> <p>✓ Unsafe disposal of used pesticide containers</p> <p><u>Pesticide management</u></p> <p>✓ No integrated approach to limiting crop pests: elimination of the natural</p> | <p>✓ Invasion of privacy of host communities and their households</p> <p>✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process</p> <p><u>Occupational health and Safety</u></p> <p>✓ Risks related to capacity deficiencies in biotechnology and biosafety.</p> <p>✓ Lack of awareness creation programs on health and safety</p> <p>✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process</p> <p>✓ Use of pesticides and disposal of empty containers</p> <p>✓ Exposure to snake bites</p> <p>✓ Exposure to water related diseases</p> <p><u>Cultural Heritage</u></p> <p>✓ Access to local shrines</p> <p>✓ Preservation of local cultural identity and heritage</p> <p>✓ Compensation issues</p> <p>✓ Community pride and support</p> <p>✓ Community relinquishing/ sharing heritage for greater good</p> <p><u>Resource Access and Possible Restriction</u></p> <p>✓ Rights to question and have individual considerations addressed</p> <p>✓ Possible alternative options</p> <p>✓ Established grievance redress options</p> |

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|---------------------------------------|---|--------|
| | Environmental | Social |
| | <p>enemies of crop pests and consequent alteration of biological pest control methods.</p> <ul style="list-style-type: none"> ✓ Development of resistance to pesticides, encouraging increases in and reliance on chemical pesticides. ✓ Weak institutional capacity for pesticide management (control import, sale and distribution of pesticides) <p><u>Public health and safety, and traffic issues</u></p> <ul style="list-style-type: none"> ✓ Construction works ✓ Poor management of agrochemicals ✓ Waterborne diseases ✓ Poor traffic management at work sites | |

Mitigation Guidelines

These mitigation guidelines are given to address the significant impacts. The responsibilities for implementing these measures are described later in the report.

Generic Environmental and Social measures

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|--|
| <p>Water Resources and pollution</p> | <p><u>Construction stage</u></p> <ul style="list-style-type: none"> ✓ Works not to be executed under aggressive weather conditions such as rains or stormy conditions. ✓ No solid waste, fuels, or oils to be discharged into any section of a waterway. ✓ Construction to be done in phases to minimize impacts and exposure of soil. ✓ Excavated materials and silt, which cannot be used will be disposed of at appropriate sites as per the Waste Management Plan prepared by contractor and approved by the relevant authority. ✓ Temporary sediment barriers to be installed on slopes to prevent silt from entering water courses. ✓ Maintenance, fuelling and cleaning of vehicles and equipment to take place at off-site workshop with adequate leakage prevention measures <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Research teams to follow best practices in order to minimize waste and pollution of water and also will educate farmers through the agricultural extension officers |
| <p>Air quality, Vibration and Noise</p> | <p><u>Construction stage</u></p> <ul style="list-style-type: none"> ✓ The working times and construction schedule will be coordinated rationally for all the various construction and engineering companies which will be on site; ✓ Neighbouring offices and communities will be duly informed early of all demolition/constructional activities. ✓ The construction and other engineering firms will be selected for the project based on their ability to adopt acceptable engineering practices and their possession of suitable equipment holdings to ensure low noise and air quality emission; ✓ Loading and transportation of demolition debris shall be done during daytime and will avoid relatively noisy equipment operating during the night; ✓ Stock piles of debris will be covered to prevent re-suspension of dust into the air; ✓ On-site mixing of cement, sand stone and other constructional materials will be done in an enclosed space and these materials shall be stored in an enclosed yard or covered tightly; ✓ Speed limit shall be set for construction and transportation vehicle both within and outside the project site to avoid re-entrainment of dust; and ✓ A water bowser will be available on site for frequent dousing or sprinkling to suppress dust from earthworks. <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Adequate road signs to be planted on dust roads to limit vehicular speeds |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|---|
| | <ul style="list-style-type: none"> ✓ Properly designed and constructed speed ramps on access roads |
| Soil pollution | <ul style="list-style-type: none"> ✓ Research teams to follow best practices in order to minimize waste and pollution of soil and also will educate farmers through agricultural extension officers |
| Visual intrusion | <ul style="list-style-type: none"> ✓ Public to be well informed of upcoming project using appropriate signages and display boards prior to contractor accessing sites; ✓ Construction activities to be done in sections to reduce impacts of change and visual intrusions to the general public. ✓ The construction sites to be hoarded off from public view. ✓ Good housekeeping measures, such as regular cleaning, to be maintained at the construction site. ✓ Ensure an acceptable post-construction site as per provisions in the contract. ✓ Facilities will be properly designed and constructed to blend with the existing environment |
| Land acquisition and compensation issues | <ul style="list-style-type: none"> ✓ Consult affected property owners/users/ communities and seek their consent early in the project development process ✓ Allow affected persons to salvage their properties (including crops) before mobilizing to site to start work ✓ Ensure fair and adequate compensation is paid to all affected persons prior to commencement of construction activities as per the provisions of the RPF ✓ Obtain the required developmental permits from the respective authorities before start of work ✓ Government to pursue one- time payment for all land being used by various agricultural institutions. The RPF will assist to determine options, principles and approaches to follow to acquire land satisfactorily. ✓ A formal grievance redress mechanism to be established and implemented |
| Generation and disposal of wastes | <p>Apply the principles of Reduce, Recycle, Reuse and Recover for waste management through the following actions:</p> <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Excavated earth materials will, as much as possible, be re-used for back filling purposes to reduce waste ✓ Ensure that the required amounts of construction materials are delivered to site to reduce the incidence of excess material ✓ Provide bins on site for temporary storage of garbage such as lubricant containers, drinking water sachets/ bottles and carrier bags/package materials. ✓ Ensure judicious use of construction materials such as pipes, laterites, sand, etc. to reduce waste ✓ All metal scrap waste will be disposed of at sites approved by the relevant authorities or sold to approved third party agents for use by metal dealers. ✓ Contractor to work according to a prepared and agreed Solid Waste Management Plan. |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|---|---|
| | <ul style="list-style-type: none"> ✓ Project management will ensure that as part of the bidding process, contractors clearly indicate a suitable and District Council approved dumpsite for disposal of debris; ✓ Reusable building materials like roofing sheets, windows and doors, and cement blocks may be salvaged and given to the Centres for use. <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ Waste collection bins to be sited at vantage points to serve the general public ✓ Warning signs to be posted at suitable locations against littering with possible sanctions indicated ✓ Proper arrangement with waste collection companies through the Councils to regularly collect and dispose of solid waste ✓ Waste materials will be incinerated and chemicals will be collected and neutralized prior to disposal. ✓ Laboratory workers will use appropriate PPEs |
| Maintaining Livelihoods | <ul style="list-style-type: none"> ✓ Ensure appropriate compensations are paid to PAPs as defined in the RPF; ✓ Employment and other opportunities to be given to local communities as much as possible. ✓ The research centres will mostly rely on their own power sources which will be maintained regularly for reliable supply and minimize work interruption. ✓ Frequent on-the job training for laboratory staff will greatly reduce equipment down time and provide reliable results. ✓ Staff will therefore be trained to specialize in the use of particular equipment |
| Public Health and Safety, and Security Housekeeping and Sanitation | <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Works on exposed trenches and earth materials will, as much as possible, be completed before new earth dug and trenches are created. ✓ Work areas to be hoarded off adequately to avoid inquisitive trespassers especially children ✓ Warning signs to be posted around work areas to discourage trespassers ✓ Contractors to maintain adequate security at construction sites to avoid pilfering or vandalising of property ✓ Visibility to be ensured in the night time by providing adequate lighting ✓ Construction workers educated on personal and public health issues. Protection eg., condoms provided against sexually transmitted diseases ✓ On completion of the works, all temporary installations will be dismantled, all plant and equipment de-mobilized, waste and left over materials and debris removed by the contractor, and the site left clean and tidy ✓ Bulldozer, hydraulic excavator, pumps, generator, vehicles and other equipment and machinery used for the project will be relocated to new or other project sites in the country managed by the contractor. ✓ Construction workers will be provided separate sanitary facilities which will be kept clean at all times by the contractor. Free range urination/ defecation will not be allowed; |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|--|
| | <ul style="list-style-type: none"> ✓ Covered dust bins will be provided on site for collection of domestic solid waste and shall be disposed of by the contractor at the identified waste dumps. <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ Encourage community leadership to form watch committees to improve security ✓ Work with police force to provide police posts at all major project areas ✓ First aid facilities to be available at all sites with suitable arrangements with local health facilities to deal with emergencies |
| Traffic management | <ul style="list-style-type: none"> ✓ Contractors to provide traffic management plans to be approved by relevant authorities and client ✓ Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians within academic environments ✓ Works to be completed on time to minimize inconvenience to motorists and pedestrians <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Adequate road signs to be planted on access roads to limit vehicular speeds ✓ Construct properly designed speed ramps on access roads |
| Pest management | <ul style="list-style-type: none"> ✓ Pest management plan to be prepared to guide the project |
| Occupational health and safety | <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Engage experienced artisans for construction works. ✓ All workers should be given proper induction/orientation on safety. ✓ The contractors will have a Health & Safety Policy and procedures to guide the construction activities. ✓ Regularly service all equipment and machinery to ensure they are in good working condition. ✓ Ensure there are first aid kits on site and a trained person to administer first aid. ✓ Provide and enforce the use of appropriate personal protective equipment (PPE) such as safety boots, reflective jackets, hard hats, hand gloves, earplugs, nose masks, etc. ✓ Proof of competence for all equipment/machine operators will be required and established through inspection of valid drivers or operator’s license or documents. ✓ Comply with all site rules and regulations. ✓ Apply sanctions where safety procedures are not adhered to. ✓ Site meetings should create awareness on OHS. ✓ Construction workers educated on personal and public health issues. Protection eg., condoms provided against sexually transmitted diseases <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ PPEs to be provided for all field workers and usage will be enforced to provide protection against chemicals and also reptiles. |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|---|
| | <ul style="list-style-type: none"> ✓ Farmers will be educated on hazards and encouraged to use PPEs ✓ All empty agrochemical containers to be physically destroyed and properly disposed of eg. Land burial. ✓ New equipment to be introduced in the laboratories, engineering sections and for field work will represent current technology and are state of the art machines. These are expected to be safer to operate and workers will need to be sufficiently trained to master the operation of these machines. Appropriate PPEs will be provided to safeguard health of all workers. ✓ Offenders will be appropriately sanctioned; ✓ Regular training programs will be organized for staff on work place safety and health issues and effective use of equipment/machinery; ✓ Management may will institute incentive packages for departments that record least accidents |
| Cultural Heritage | <ul style="list-style-type: none"> ✓ Traditional authority responsible for sanctity of local shrines properly identified and consulted ✓ Necessary cultural rites agreed with community and performed prior to access to sites and at pre determined time periods |

Institutional implementation arrangements

The overall responsibility for project implementation lies with the Ministry of Agriculture, Forestry, and Food Security (MAFFS). Other state and non-state institutions such as the Sierra Leone Agricultural Research Institute (SLARI) and the National Federation of Farmers in Sierra Leone will have primary responsibility as implementing agencies for specific activities directly related to their areas of functional responsibility, in line with the project development objective. The existing WAAPP Project Coordination Unit (PCU) will be maintained. The PCU will be responsible for coordinating and supervising the day-to-day implementation of the project.

SLARI will provide technical leadership for Component 1. A Research Coordinator will be recruited to coordinate all of the activities of the research centers under Component 1. The overall technical leadership of Component 2 will rest with MAFFS.

Institutional arrangement for the implementation of the Framework ESMP

Under component 1, the proposed Research Coordinator (RC) will on behalf of the implementing agencies (SLARI, NARC, RARC, TERC), be directly responsible for all safeguard activities and will therefore foremost carry out the preliminary environmental and social screening of proposed projects by using the checklist suggested in **Annex 1**. S/He will be assisted by the appointed safeguard focal persons in the collaborating institutions at SLARI, NARC, RARC and TERC. If significant impacts are anticipated then the EPA-SL must be consulted and the national Environmental Assessment (EA) procedures duly followed.

When there are minimal or no impacts (as determined using the checklist), the RC must necessarily consult with the PCU Safeguards Specialist for confirmation. Once an agreement is reached, the RC may proceed with the minimum regular reporting requirements which will be discussed and agreed with the PCU.

Under component 2, the task described above for the RC will be carried out by a MAFFS appointed safeguard officer.

When there may be doubts concerning project risks and impacts, the PCU should consult the EPA- SL for guidance as provided by the Sierra Leonean EA procedures as well as the World Bank safeguards team to ensure consistency with the provisions of the policies triggered.

The formal environmental approval and permitting processes will also be guided by the SL EPA environmental procedures. All environmental assessments must be materially consistent with the applicable World Bank safeguards policies which provides guidance on the environmental assessment procedures for WB funded projects. The SL procedures (EPA, 2008) have also established a process to screen and evaluate all developments, undertakings, projects and programs which have the potential to give rise to significant environmental impacts. There is consistency with both provisions.

Those projects requiring EPA clearance will only commence when an environmental license has been procured from the EPA- SL.

Capacity building and Training and Budget

The current capacity available to implement the ESMF at the research centers and the MAFFS and other collaborating institutions is limited. There is the need to equip identified persons with the understanding, skills and access to information, knowledge and training to enable them to perform effectively as safeguard persons.

The capacity building will include training workshops and production of guidance reports and tools. The following training programs will be implemented to build the capacity of institutions and persons responsible for safeguards:

Training modules and proposed participants

| No | Training content | Participants |
|----|---|--|
| 1. | <ul style="list-style-type: none">World Bank Safeguard policies of OP 4.12 and OP 4.01;EPA- SL Environmental Assessment RegulationsESMF/ RPF | PCU/ WAATP PCU safeguard specialist, MAFFS- Extension Services, Crop Services etc. Implementing agencies- SLARI, RARC, NARC, TERC, NaFFS etc. |
| 2. | <ul style="list-style-type: none">Screening Checklist,ToR for PCU safeguard personToR for RC/ MAFFS Safeguard focal persons | RC/ MAFFS safeguard person, Implementing agencies PCU safeguard specialist |
| 3. | <ul style="list-style-type: none">Preparation of Terms of Reference for ESIA and ARAPs/ RAPs | RC/ MAFFS safeguard persons, PCU safeguard specialist |
| 4. | <ul style="list-style-type: none">Environmental and Social Management PlansGrievance redress registration and resolution formsSafeguard reporting formats | RC/ MAFFS safeguard persons, Contractors, Supervising engineers, Implementing agencies Community persons |

The participants at the training programs will therefore range from the relevant staff of the MAFFS to selected community members from site- specific project locations. For many of the community members who will be invited to attend, the purpose will be to create awareness on safeguard issues as well as for an understanding of grievance reporting and resolution procedures.

As much as possible, these training and awareness creation workshops will be decentralized to project locations and the content of the discussions will then focus on site- specific concerns. As a result, large numbers of participants at specific meetings will be avoided.

Training manuals and safeguards reporting formats will be prepared to assist the RC and the MAFFS safeguard focal point to carry out their functions. Consultants may be hired to produce manuals and checklists as and when required by the project.

The awareness creation, capacity improvement and training workshops as well as some logistic support expenses for key stakeholders involved in the implementation of proposed

interventions is estimated at **US\$460,000** over the 5- year project life as given in the table below:

Budget provisions

| # | Item | Unit | Unit Cost US\$ | No | Total Cost US\$ | Source of financing |
|---|------------------------------------|--|----------------|---------|-----------------|---------------------|
| 1 | Preparation of specific ESIA | No ESIA reports/ research site (for 3 sites) | 45,000 | 3 | 135,000 | Project funds |
| 2 | Capacity Building | No of training workshops/ year for 5 years | 15,000 | 2 | 150,000 | Project funds |
| 3 | Implementation of specific ESMP | Purchase of equipment eg. PPEs/ year | 10,000 | 5 years | 50,000 | Project funds |
| | | Cost of meetings/ year | 12,000 | 5 years | 60,000 | Project funds |
| 4 | Mid-term audit of ES performance | No | 30,000 | 1 | 30,000 | Project funds |
| 5 | Completion audit of ES performance | No | 35,000 | 1 | 35,000 | Project funds |
| | Total | | | | 460,000 | |

Monitoring and Evaluation

The monitoring indicators at the ESMF level include reports confirming the dissemination of both ESMF and RPF documents as well as capacity building and training activities. At the sub-project activity level, this will encompass Screening reports, permits obtained and ESMP documents prepared.

Disclosure

WAATP and EPA-SL will make copies of the ESMF available in selected public places as required by law for information and comments. Public notice in the media will serve that purpose as well as disclosure at the World Bank website.

The notification will be done through newspaper advertisements and provide:

- Brief description of the Project;
- List of venues where the ESMF report is on display and available for viewing;
- Duration of the display period; and
- Contact information for comments.

Grievance management and redress mechanism

Court cases are known to be cumbersome and take a long time before settlements are reached and usually one party is still not satisfied. It is therefore proposed to adopt a simple procedure for affected persons to be able to follow easily, and which will provide aggrieved people with an avenue for amicable settlement without necessarily opening a Court case.

As with the WAAPP, this Project may have limited potential adverse impacts on people and the environment. However, in general, identifying grievances and ensuring timely resolution is still very necessary. As such the ESMF has developed a grievance management process to

serve as a guide during project implementation. The grievance management guide is provided in the table below.

Grievance Mechanism

| Steps | Process | Description | Time frame | Other information |
|-------|--|--|------------------------|--|
| 1 | Identification of grievance | Face to face; phone; letter, e-mail; recorded during public/community interaction; others | 1 Day | Email address; hotline number |
| 2 | Grievance assessed and logged | Significance assessed and grievance recorded or logged (i.e. in a log book) | 4-7 Days | Significance criteria Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions |
| 3 | Grievance is acknowledged | Acknowledgement of grievance through appropriate medium | 7-14 Days | |
| 4 | Development of response | -Grievance assigned to appropriate party for resolution -Response development with input from management/ relevant stakeholders | 4-7 Days 10-14 Days | |
| 5 | Response signed off | Redress action approved at appropriate levels | 4-7 Days | Senior management staff of SALCAB should sign off |
| 6 | Implementation and communication of response | Redress action implemented and update of progress on resolution communicated to complainant | 10-14 Days | |
| 7 | Complaints Response | Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary | 4-7 Days | |
| 8 | Close grievance | Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law | 4-7 Days | Final sign off on by MAFFS |

1 INTRODUCTION AND BACKGROUND

The West Africa Agricultural Transformation Program (WAATP) focuses on consolidating achievements under WAAPP. More specifically, the key priority areas of WAATP are: (i) consolidating the capacity of the National Center of Specialization (NCoS) on mangrove, with the technologies, equipment, human capacity and infrastructure necessary to transform it into a Regional Center of Excellence (RCoE) for mangrove; (ii) up-scaling the dissemination and mass adoption of the technologies developed under WAAPP; (iii) strengthen the seed sector system to ensure sustainable seed production and multiplication; (iv) Mainstreaming the cross-cutting issues such as climate change, nutrition; and (v) promote Youth empowerment and employment.

In addition to the two value chains (Rice and Cassava) supported under WAAPP, WAATP will also support the livestock value chain (mainly poultry and small ruminants). The emphasis of WAATP will be the wide dissemination and mass adoption of technologies of Rice and Cassava developed under WAAPP; while for poultry and small ruminants the focus will be on promoting the adoption of proven technologies developed by other countries.

From the regional perspective, Sierra Leone is showing comparative advantages in mangrove rice research, as well for increased field productivity for improved post-harvest technologies (i.e. parboiling processes). Therefore, consolidation of currently rehabilitated R&D systems should enable Sierra Leone to further strengthen the capacities of the National Center of Specialization (NCoS) for mangrove rice and its transformation into a Regional Center of Excellence (RCoE) within the overall cluster for rice. Thus, WAATP will ensure Sierra Leone's contribution to regional technology development, especially in the area of mangrove rice, but also the country to benefit from technical innovations developed by NCoS/RCoE of other WAATP participating countries in the region. Overall, the regional dimension of WAATP would include activities related to transfer of know-how and technologies for rice and other key commodities, with technical support of the West and Central African Council for Agricultural Research and Development (CORAF/WECARD). WAATP will ensure that results generated under WAAPP will be shared regularly with other WAATP countries during regional wrap-up implementation support mission meetings, contributing to strengthening regional integration in Mano River Union and WAATP countries.

This document is in accordance with the Environmental Protection Agency Act, 2008 and the EPA (Amendment) Act, 2010. It is also in line with the World Bank's commitment to sustainable development. Safeguards policies triggered to support the project development objectives include the Environmental Assessment (OP/BP 4.01), Pest management (OP/BP 4.09), and the Involuntary Resettlement (OP/BP 4.12).

1.1 Purpose and Objectives of the ESMF

The objective of this Environmental and Social Management Framework (ESMF) is to focus on key activities outlined under the project components within the national context, to provide the basis for assessing, analyzing and evaluating environmental and social impacts of research and development activities. Subsequently the ESMF will define appropriate mitigation measures by either avoiding, eliminating, or reducing such adverse environmental and social impacts. The ESMF will further establish provisions for estimating and budgeting the costs of any alternate measures as part of the implementation of the mitigation guidelines.

The specific project intervention areas are not known at the time of preparation and the ESMF will provide guidance for further screening and Environmental Assessment as may be determined from the screening results.

2 PROJECT OVERVIEW

2.1 Project Development Objective

The Project Development Objective (PDO) of the WAATP is to accelerate adoption of agricultural improved technologies and innovations by small scale producers and contribute to improve enabling environment for regional market integration in the ECOWAS region and enable the Governments to respond promptly and effectively to eligible emergencies.

The proposed PDO-level performance indicators are: i) number of processors who have adopted improved technologies (disaggregated by country, type and sex); ii) number of farmers adopting improved agricultural technology (disaggregated by country and sex); iii) farmers/processors adopting an improved technology generated by other countries; iv) jobs for youth created as a result of project interventions (disaggregated by country and sex); v) stakeholder platform marketing and trade Action Plans developed and implemented; vi) share of targeted beneficiaries with rating 'Satisfied' or above on project interventions.

The primary project beneficiaries include agricultural producers and processors, women groups, SMEs, youth, and other value chain actors. Additional beneficiaries will include research institutions, public and private advisory services, government institutions, and regional institutions fostering agricultural development and markets development across West Africa. The program will target at least 50 percent of women and at least 30 percent of youth and young adults (18 – 35 years).

2.2 Description of Project Components

The duration of implementation of the WAATP will be five years and the project would have five components: (i) Strengthening the new model of innovation delivery in West Africa; (ii) Accelerating mass adoption of technologies and enhancing job creation in the agricultural sector; (iii) Policies, markets and institutional strengthening; (iv) Contingent emergency response; (v) Project management, learning, monitoring and evaluation. The details of the activities are described below.

Component 1: Strengthening the new model of Innovation delivery in West and Central Africa

The component aims to continue to enhance regional linkages between and among national research entities, strengthen the National Centers of Specialization (NCoS) supported under WAAPP, and upgrade them to become ECOWAS Regional Centers of Excellence (RCoE) focusing on priority lines of research to be addressed regionally. The RCoE will play a key role in ensuring a solid link with the CGIAR research system, the private sector and the networking of national agricultural research and

extension systems to deliver, in a sustainable manner, improved technologies and innovation - which will be screened to ensure that they are climate smart and gender sensitive - for scaling up. This component will be sub-divided in two sub-components: (i) Support to NCS/RCE development/strengthening; and (ii) support to adaptive research for priority national value chains and related innovation exchange at regional level.

Sub-Component 1.1: Support to NCS/RCE development/strengthening

This component will support: i) capacity building of the RCoE network institutions in the participating countries in the domain of adaptive research, including academic training for the next generation of scientists and for research technicians; ii) provision of additional infrastructure, equipment and other supplies; (iii) complementary financing of priority research programs and grants for research activities for the NCoS/RCoE (climate smart technologies, nutrition including bio fortification, soil health, etc.) ; (iv) partnerships and technical assistance from CGIAR centers and other advanced research institutions for capacity building, technical backstopping, joint research activities; (v) annual planning and result-sharing workshops organized by each RCoE, including participation of the research system in the development of Innovation Platforms; and (vii) grants for varietal maintenance as well as the production of required breeder and foundation seed production at national level (priority commodities – rice, cassava, small livestock).

Sub-Component 1.2: Strengthening of adaptive research (R&D)

Further to supporting the NCoS, WAATP will build on WAAPP adaptive research actions especially in the areas of priority commodities such as cassava and livestock (small ruminants and poultry). Support will be provided to NARC (Njala) and TLRC (Telo) adaptive research centers in the following areas: (i) Human capacity building (ii) Infrastructure and equipment (iii) Additional support/grant to priority adaptive research and development activities (iv) Strengthening of regional and international partnerships, and (v) Breeder and foundation seed for cassava and improved livestock breeds

Component 2: Accelerating mass adoption of improved technologies and innovation

The component aims at scaling up adoption of improved agricultural technologies and innovations improving promoting innovation for youth that will accelerate productivity increases and thus contribute to higher food availability in the sub-region and enhanced regional trade flows.

Sub- component 2.1: Demand driven market-based mass adoption of technologies and innovations

This sub-component aims to address the key drivers of productivity increase and accelerate mass adoption of innovations. The sub-component will further consolidate activities already initiated under WAAPP including: i) implementation of a regional knowledge management and communication for development action plan to address information needs of farmers and value chain actors; ii) strengthening of national private and public extension services and their networking at regional level; iii) scaling up the use of ICT and innovations in outreach, such as E-extension, E-vouchers, electronic technology markets, regional geo-spatial monitoring of technology adoption, innovative rural finance tools; iv) promotion of multi stakeholder platforms, such as Innovation Platforms and alliances with the private sector and farmers' organizations as conduits for new technology mainstreaming; and v) promotion of south-south collaboration, national and regional technology fairs and events.

Sub- component 2.2 Strengthening the seed sector

As a follow-up of WAAPP support, WAATP will provide both institutional and operational support towards gradual development of a sustainable seed system in Sierra Leone and better farmer access to improved planting material.

Institutional support for national seed system To build on the adopted seed act and harmonized seed regulations supported by WAAPP, WAATP will popularize seed act (comp 3.1) and support the implementation of the institutional strengthening of the seed sector by: (i) establishing an electronic seed platform and linking it with the West African Regional Seed Platform to strengthening seed information flow (supply, demand, suppliers, supply source, price, quantity and quality, etc.); (ii) supporting the establishment and bi-annual meetings of the national seed board and varietal seed release committee; (iii) rehabilitating and equipping the seed certification laboratory (moisture content, purity analysis, germination rates & seed health testing) and the administrative building for seed certification; (iv) providing transport equipment (vehicle, motorbikes) for the seed certification agency; (v) enhancing human resources capacity development (short technical and MSc training); (vi) organizing study tours and experience exchanges with other seed companies in the region; (vii) providing specialized technical/extension and marketing services to seed producers; (viii) identifying and training FBOs as specialized seed farmer associations purposely for certified seed multiplication in the country - priority shall be given to women and youths FBOs; (ix) training functional community-based quality seed producers to ensure availability of quality seeds adapted to local conditions; and (x) establishing a network of commodity based agrodealers across the country. Furthermore, institutional support will also be provided to SMP by strengthening human resources (1 MSc and technical training for technicians), transport equipment (truck 10T) and small internal seed laboratory equipment.

Major operational support for enhanced farmer access to improved seed within strengthened national seed systems will be provided by WAATP, including: (i) rice seed production (gradual increase to reach up to 3600 tons/year from year 4 on); (ii) decentralized cassava planting material production (up to 150 ha /year) and (iii) support to ‘Pass on the Gift’ Scheme established in Ghana to meet local circumstance and conditions for poultry and the small ruminants (goats and sheep).

Sub- component 2.3 Jobs for Youth

The sub-component aims at scaling up adoption of innovations and improved technologies by the educated and non-educated youth who are already in the rural area or showing a great interest in the agricultural sector. The project would specifically target youth in the range of 18-35-years, and work with them to improve their skills in agricultural production, services to agriculture, value addition. The sub-component will scale up activities piloted under WAAPP including: i) development of a regional strategy and national action plans for youth employment in the agricultural sector based on the outcome of the ongoing stocktaking exercise of pilot activities initiated under WAAPP; ii) specific vocational capacity training for youth and scaling up of public and private sector led incubation systems/hubs/centers (such as the Ibadan University and IITA ones, the WAAPP experiences); iii) networking of youth entrepreneurs, business plan competition and development of a mentorship

program at national and regional levels; and iv) start-up and kits to support innovation adoption by youth.

Component 3: Policies, Markets and Institutional Strengthening

The aim of this innovative component is to create the enabling policy environment to accelerate agricultural transformation, connect production to markets and strengthen regional integration institutions. Efforts will be focused on removing barriers to cross-border trade in technologies and inputs, identifying products for which regional demand is growing, and strengthening the institutions at the regional level to provide backstopping for the reform process. The component will have 3 sub-components: (i) regional policies and regulations; (ii) regional markets development; and (iii) national and regional institutional capacity building.

Sub- component 3.1 Regional policies and regulations

The sub-component will consolidate activities launched under WAAPP and address new areas of policy reforms necessary to accelerate agricultural transformation in the sub-region. It will support: (i) stocktaking of the implementation of the regional regulations on seeds, pesticides, fertilizer and veterinarian products and implementation of the resulting action plan, building on existing regional initiatives and effective implementation at the country level; (ii) updating and implementation of the existing common strategies and action plans for gender, communication, climate change; but also focus on new areas including (iii) support to the harmonization of coordinated regional trade policies and regulatory reforms to address non-tariff barriers to regional trade. This subcomponent will also promote the validation and dissemination of these updated policies and regulatory frameworks to the value chain actors. Practically in Sierra Leone, this sub-component will support activities started under WAAPP as well as new issues related to required policy reforms for accelerating the agricultural transformation.

Sub component 3.2 Regional markets development for targeted products

This sub component aims to identify products for which regional demand is growing rapidly, and for which potential exists to increase trans-border trade flows A selected number of products (2 or 3) will be identified, based on experience, in the main trade corridors and will be used to test the business environment and provide feedback for scale up. The sub-component will therefore support: (i) establishment and operationalization of regional multi-stakeholder initiatives – Public-Private Dialogue (PPD), trade knowledge platforms, regional Innovation Platforms- to identify key bottlenecks and support collective action and advocacy; (ii) preparation and implementation of detailed action plans to implement proposed solutions for identified barriers in value chains that inhibit cross-border flows of technologies and/or products; a positive list of eligible activities will be identified during preparation; (iii) the continuing monitoring of trade-flows of these commodities along the main trade corridors, identifying the main legal and illegal barriers and practices hindering trade and increasing the transaction costs between farms and forks and ; (iv) south-south exchange visits with SADC and the East African Community; and v) feasibility studies for regional warehouse receipt system and a private sector-driven regional commodities exchange market. It will furthermore explore collaboration with IFC to pilot innovative schemes including “risk sharing facility”

and “business plan competition” to facilitate access to investment capital and support to the best investment projects.

Sub component 3.3 National and Regional Institutional capacity building

The sub-component would strengthen the capacities of the regional institutions responsible for leading and coordinating the definition of regional policies, strategies and programs for agricultural development. It would support activities aimed at: i) strengthening the capacities of ECOWAS, ECCAS and WAEMU respective Departments of Agriculture in policy analysis, regional programs preparation, implementation and monitoring, regional benchmarking and impact evaluation; ii) strengthening/clarifying the relationships between these regional institutions and regional technical agencies such as CORAF and CILSS; (iii) strengthening CORAF capacity to implement programs identified by ECOWAS/WAEMU in the areas of technology generation and dissemination.

It will also support building the capacities of national Ministries and relevant institutions (including producer associations, inter-professional bodies, private sector and civil society organizations) to implement updated national policies and action plans, including for policy and regulations, but also for mainstreaming major cross-cutting issues to be considered under WAATP.

Component 4: Contingent emergency response

This component, known as the Contingent Emergency Response Component (CERC), will be available should the need arise to redirect some of the project resources to contribute with other projects in the participating countries portfolio to respond to an eligible emergency or crisis. The available resources would be made available to finance emergency response activities and to address crisis and emergency needs. An Immediate Response Mechanism Coordinating Agency and expenditure management procedures will be defined in an Immediate Response Mechanism Operational Manual (IRM/OM), to be prepared separately and approved by the World Bank, in line with guidance provided under OP 10.00, paragraph 11. In case this component is to be used, the project will be restructured to allocate financing.

Component 5: Project management, learning, monitoring and evaluation

Sub- component 5.1 Harmonized coordination and management

The Project will build on the successful institutional arrangements mechanisms of WAAPP. It will be coordinated: (i) at the national levels by existing national Coordinating units (PCU), which successfully coordinated the implementation of WAAPP; and (ii) at the regional level by CORAF based on a well-defined mandate agreed by the Regional Steering Committee (RSC) under the Annual Work Plan and Budget (AWP&B). To this end, as all other participating countries, Sierra Leone will contribute to the regional coordination and technical assistance provided by CORAF up to an amount of 1/15th of its total budget. The management of the regional budget will be implemented within an approved annual work plan and budget approved by all participating countries.

Sub- component 5.2: M&E, Knowledge management communication

This sub-component aims to ensure that the performance and impact are carefully tracked.

The PCU will have its M&E Officer that will be responsible for the monitoring and supervision at the national level and will link up with the regional M&E system. The M&E Officer of the project will work with the research system's M&E arrangements and the PEMSD, MAFFS to collect the required data and conduct studies as and when necessary. The support will include (i) reviewing and updating the management information system (MIS) established by WAAPP; (ii) periodic field data collection; (iii) studies- baseline, mid-term, and final impact studies (iv) support to PEMSD field data collection; (v) regional M&E meetings

WAATTP will support the following communication activities: (i) review and updating of the Communication strategy developed under WAAPP; (ii) undertake awareness creation and mass sensitization on available technologies and how to use them- TV, Radio, Jingles, etc.; (iii) video documentaries (iv) strengthen the communication strategy of the research system.

3 BASELINE CONDITIONS

Sierra Leone is located on the west coast of Africa and covers an area of about 72,000 square kilometres (28,000 square miles). It extends from latitude 7 degrees north to 10 degrees north, and from longitude 10 degrees west to 14 degrees west. The Republic of Guinea borders it on the north and northeast, and the Republic of Liberia borders it on the east and southeast. On the west and southwest, the Atlantic Ocean extends approximately 340 kilometres (211 miles). **Figure 1** shows the location map of Sierra Leone and its provinces.

The current system of government in Sierra Leone, established under the 1991 constitution, is modeled on the following structure of government: the Legislature, the Executive and the Judiciary. Sierra Leone is a Republic with an Executive President and a multi-party system of government with a 124-seat parliament (112 elected members and 12 paramount chiefs). Administratively, Sierra Leone is divided into 4 provinces or administrative regions —the Western Area, and three provinces (Northern, Eastern, and Southern provinces). The Western Area includes the capital, Freetown. Northern Province is divided into five districts, Southern Province into four, and Eastern Province into three. Each district is headed by a district chairman who is elected.

The districts are also subdivided into constituencies and each constituency is represented by a member of parliament. The constituencies are divided into chiefdoms, which are controlled by paramount chiefs. The chiefdoms are further divided into wards represented by local government councilors. At the lowest level i.e. the community level, there are sections and villages. There are 149 chiefdoms and 394 wards in Sierra Leone. The chiefs are hereditary rulers who are elected for life. The representatives and councilors are all elected.

At the local level, there are 12 district councils and 5 town councils outside the Western Area. The five town councils are Bo, Kenema, Makeni, Bonthe and Koidu each headed by a Mayor. These are large urban settlements in the provinces. The Western Area has a rural area council and a city council for Freetown, the nation's capital. The Freetown City Council is headed by the Mayor of Freetown and has 49 councilors. There are 49 ward committees in the Freetown City Council and each headed by a councilor. There are in addition to the councilors 10 selected residents.

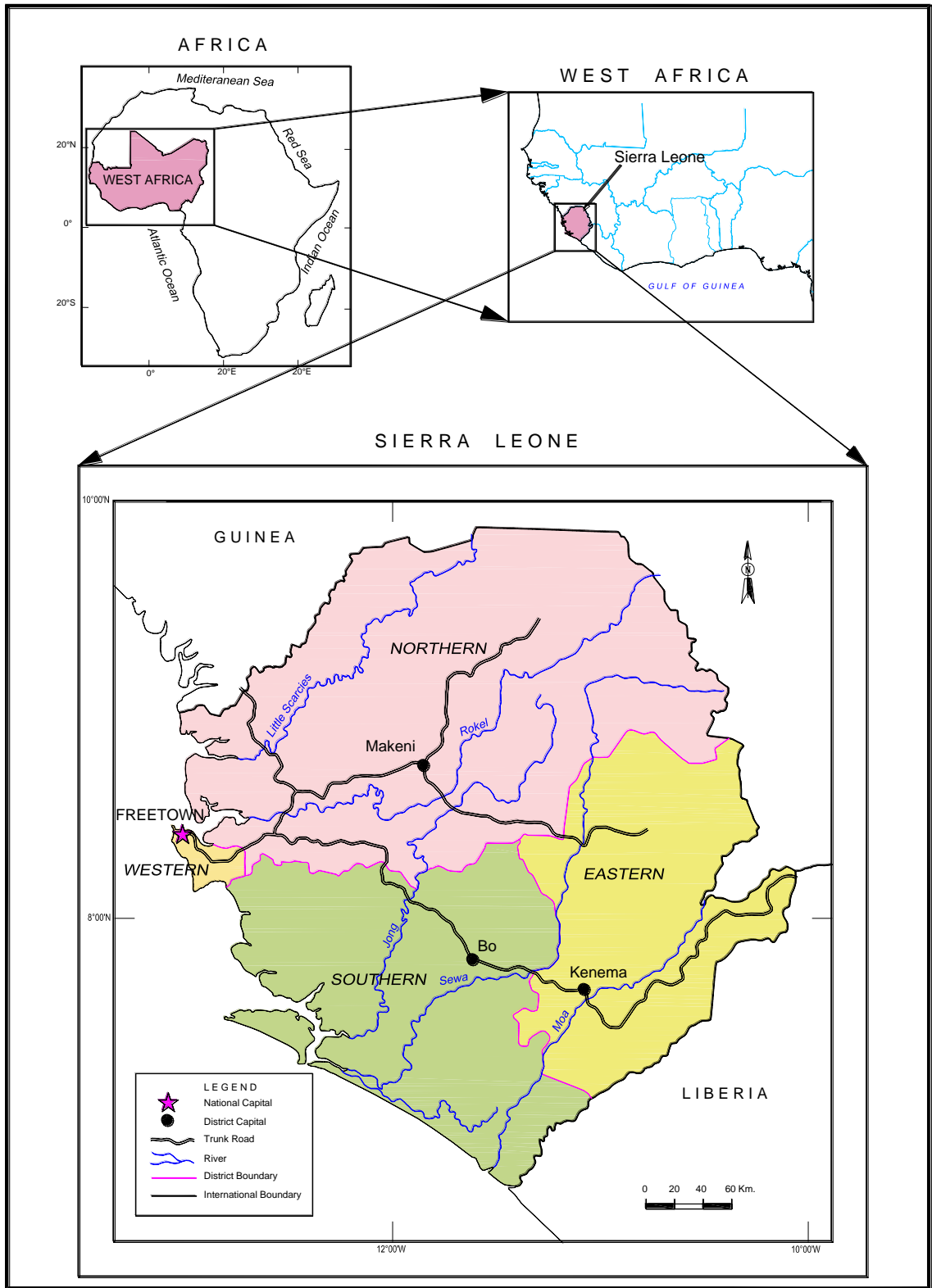


Figure 3:1 Location Map of Sierra Leone and showing the Provinces

3.1 Geography, Topography and Climate

Land resources

Of the total land area of about 71,740km², some 60,650km², are classified as upland and 11,650km² are low lands. Out of the total land area, 53,620km², (5.36m.ha) has been estimated as suitable for crop production. Non-arable land which includes hills, rocky land, roads, rivers and creeks account for the rest of the land resources of the country. Land in Sierra Leone is divided into arable agricultural land (60%), pastural (18%), mangrove and inland swamps (8%), forest under protection and management (4.5%) and others (9.75%). About 6.57m.ha (90%) of the land is owned privately by families, 360,000ha by communities and families and only 285,000ha (4%) are held by Government in the form of forest reserves. The lands belonging to families are small and fragmented, restricting effective planning and management.

Agro-Ecological Zones

The land resource of Sierra Leone has been classified into five distinct agroecological zones as follows:

- Uplands: moderately well to well-drained soils of varying depth. This covers about 6.1 m.ha or 84% of the land
- Inland Valley Swamps (IVS): fairly flat, poorly drained depressions between adjacent uplands – 675,000 ha (9%)
- Mangrove Swamps: land adjacent to the coast or along estuarine rivers subject to inundation by tidal brackish water, 215, 000 ha (3%)
- Bolilands: low-lying inland depressions subject to flooding during the wet season -120,000 ha (2%)
- Flood plains: located along major rivers, flooded periodically during the wet season – 110,000 ha (2%)

Physiography

The country can simply be divided into three physiographic regions which run approximately north-east to south-west. These are the coastal plains, interior plains and interior plateaux regions. The coastal region is generally low-lying with swampy areas covering an area of 10,444km² and extending some 30 km inland from the coast. The Interior Plains region is approximately 80-100km wide and the topography is an old peneplain continental land mass. This region is the most extensive covering 31, 418 km² with altitude ranging from 40m in the west to 200m in the east. This is the region of depressions and low terraces known as bolilands which are flooded by rain during the wet season due to poor drainage of the clayey soils and water over flowing from rivers and streams. The Interior Plateau region rises rapidly above the interior plains to a height of 300 to 700 and covers an area of 30, 464 km².

Table 1: Regional areas, km²

| Region | Area, km ² | Percentage |
|------------------|-----------------------|------------|
| Coastal Plain | 10,444 | 15 |
| Interior Plain | 31,418 | 43 |
| Interior Plateau | 30,464 | 42 |
| Total | 72,326 | 100 |

Climate

The climate of Sierra Leone is largely determined by its geographical location on the south-west coast of West Africa, between latitudes 7° and 10° north of the equator. The climate is classified as humid tropical. The climatic pattern is closely related to the general atmospheric circulation of air masses over the tropics, with the south-west monsoon winds dominant from May to October and the north-east trade winds dominant from November to April. The zone of convergence of these two air masses is known as the inter-tropical convergence zone (ITCZ) which oscillates north and south of the equator, imposing seasonality in the distribution of rainfall over the country. This results in two distinctive periods, the biologically active wet season, and the biologically dormant dry season.

The mean annual and seasonal rainfall distribution pattern is as follows:

- The coastal areas receive more than 3,000 mm rain per year with the Western Area recording up to 5000 mm.
- The north-central and south-eastern regions receive between 2500 and 3000 mm.
- The north receives from 2500 to less than 2000 mm.
- Distinctly higher rainfall values above 3000 mm are recorded around Makeni, Mabonto and Bumbuna areas presumably due to the relief influence of the Sula Mountain scarp in the east.

The duration of the wet season varies from nine months, beginning in March in the east, to seven months, starting in May in the north and west, and ending in November.

Temperature and Humidity

The mean annual temperature in the country is 27.0°C. The monthly average maximum is 30.0°C but during February and March, temperatures of up to 35.0°C have been recorded. The average minimum is 22.0°C.

The relative humidity varies considerably with the seasons and during the day. The mean wet season and dry season relative humidities are 90% and 70% respectively. During the day, relative humidity varies from 80% in the morning to 40% in the afternoon. In the dry season values can drop very low.

Evaporation and Water Balance

The annual amount of evapotranspiration in Sierra Leone ranges between 1300 and 1600 mm. During the dry season, the high sunshine hours, high air temperatures and low moisture content help to increase the daily rates of evapotranspiration to 4.5 mm per day. In the wet season, evapotranspiration values average at 3.5 mm per day because of the high humidity values. The water balance calculations therefore indicate that during the wet season, there is “Water Surplus” ranging from about 1200 to 2600 mm and during the dry season the “Water Deficit” ranging from 240 to 610 mm above the assumed soil water storage of 100 mm.

Drainage and Hydrology

The river basins of Sierra Leone are relatively small. Five out of the nine major drainage basins originate in the country, namely Rokel, Pampana or Jong, Sewa, Waanje and the coastal rivers and

creeks. The Great and Little Scarcies and the Moa rivers originate in the Fouta Djallon plateau in Guinea while the Mano River originates in Liberia. All the rivers flow an almost linear pattern from north-east to south-west. The respective total length of each river and the basin area within Sierra Leone are shown in the following table:

Table 2: Characteristics of river basins

| River Basin | Total Length, km | Catchment area, km ² | Percentage area |
|-------------------------|------------------|---------------------------------|-----------------|
| Great Scarcies | 160 | 3115 | 4.3 |
| Little Scarcies | 280 | 13,000 | 17.9 |
| Rokel/ Seli | 380 | 10,620 | 14.8 |
| Pampana/ Jong | 300 | 7,511 | 10.4 |
| Sewa | 430 | 14,140 | 19.7 |
| Waanje | 200 | 4,510 | 6.2 |
| Moa | 320 | 9,220 | 12.7 |
| Mano | 180 | 2,530 | 3.4 |
| Coastal Streams/ Creeks | 120 | 6,960 | 9.6 |
| Peninsula and others | - | 720 | 1.0 |
| Total | | 72,326 | 100.0 |

Vegetation

The following main vegetation types are identified in the country.

Closed Forests and Secondary Forests

These are primary and mature secondary forests presently found mainly on hill slopes and crests in the Sewa, Mano and Moa river watersheds and the Peninsula Mountains of the Western Area. The primary forests are mature, dense and moist with mixed stands of evergreen and semi-deciduous trees. Previously, they covered a greater part of the country, but presently account for less than 5% of the vegetation coverage.

Savanna Woodlands

This vegetation is an association of trees and grasses occurring mainly on hill slopes and undulating plains in the drier zones of the country. It comprises of a fairly high density of often gnarled trees and tall grasses. The trees generally have large crowns and can grow up to about 15m tall. The grasses grow up to 3m tall above the lower undergrowth. This vegetation type is predominant within the central and northern parts of the Little and Great Scarcies watershed.

Mangrove Swamp Forests

These are found in estuaries of the major rivers and creeks which line the west coast of the country. These comprise of salt tolerant, stilted shrubs and trees occurring on low mudflats of these estuaries along the edges of the creeks and the rivers and inland as far as the limit of the tidal influence. The

forests are usually dense, comprising trees up to 20m tall. However densities are generally high where tidal influence is most marked, and also where estuaries are protected.

Soils

Soils in Sierra Leone have been grouped into 12 soils associations by the Land and Water Development Division (LWDD) of the Ministry of Agriculture and Food Security. Each of the soil associations has different attributes. Most soils in Sierra Leone are acidic (pH 4-5), and like most tropical soils are ferralitic and excessively leached as a result of the humid tropical conditions. This is particularly true of the upland soils, with such common mineral as Kaolinite, aluminium and iron. Organic matter content is low, making the soils less suitable for cropping. Top soils' organic carbon levels range between less than 1 percent in soils under annually burnt savanna in the north and 2-4 percent in the secondary regrowth and forest in the south, to 3.10 percent in the seasonally flooded swamps which are relatively fertile and suited for rice cultivation. Available plant nutrients are low. The most important soils are the Ultisols, Oxisols, Inceptisols and intergrades. The soils are generally infertile and there is lack of proper management practices. The estimated soil loss due to erosion varies from to 109 tons/ha/year depending on soil type, slope, vegetation and land use.

3.2 Socio- economic baseline

The Sierra Leone economy has always been based on the exploitation of natural resources, notably agricultural, marine and mineral resources. Public sector influence has been dominant in the economic activity in the country. The economy is dominated by the agricultural sector which accounts for 44.1% of the Gross Domestic Product (GDP) (GOSL Econ Bull, Vol 9 # 2 March 2003). Agriculture has remained traditional and subsistence in character, incapable of satisfying the food needs of the country by a wide margin, and improving the living standards of the broad mass of the population. Over 70% of the country's labour force is employed in agriculture. Since poverty is pervasive in the country, the GoSL is implementing several measures aimed at addressing the factors responsible for the difficulties identified in the economy.

The Government of Sierra Leone (GoSL) developed a post-Ebola emergency economic recovery programme that includes supporting key sectors, such as Agriculture, that are considered to be key drivers of economic growth and employment generation. Part of the strategy included the Rapid Ebola Seed Distribution support provided by GoSL and the World Bank through WAAPP. The support included the provision and dissemination of seed of improved varieties, with the aim of making improved planting materials available to communities and rapidly increasing productivity and production. This significantly cushioned the effect on farmers, who lost most of their seeds as a result of reduced farming activities as the Ebola forced them to abandon their communities and farms, and or placed restriction on their movement.

Population

The population of Sierra Leone is estimated at 6 million, growing at a rate of about 2.6 percent per year. The population density of about 58 persons/km² is relatively high as compared to other

countries in Sub-Saharan Africa. The population is concentrated in some particular regions of the country including the Freetown peninsula, the Kono, Kenema and Bo districts. The northern part of the country is sparsely populated. A large section of the population is unemployed, especially among the youth. An estimated 68% live close to the forest or forest regrowth area on which they depend for their livelihood.

National average population density varies among the districts, chiefdoms and towns. Generally, the regions, which have important economic activities tend to harbor larger populations. Areas with 80 persons per km² are the diamond areas or those with large-scale rice cultivation. These include Kono, Kenema and Bo (diamonds and trading) and Freetown (capital and industrial).

Areas with medium density (50-80 persons/ km²) are mainly in the arable alluvial soils and centres for rice, coffee and cocoa production. Areas with low density, i.e. below 30 persons/km² are mainly in the north, the southern coastal areas and the east.

Land Tenure

Land tenure in the Republic of Sierra Leone is characterized by a dual ownership structure. Land in the Western Area, which is the area originally settled by the Creole, the liberated slaves on their arrival in the country, is held under the English system of freehold interests. It is believed that the land was acquired through negotiation with the natives by the English and passed on to the settlers. This area includes the capital city, Freetown. It is also the area that has seen considerable growth and is clearly distinguishable from the rest of the country by the level and quality of development.

Land in the rest of the country is held in communal ownership under customary tenure and is controlled by traditional rulers who administer it on behalf of their communities in accordance with customary principles and usage. The result is a dichotomy between modernization and tradition. While in the Western Area interest in land can be assigned with little difficulty, in the Provinces, the traditional authorities are unwilling to assign interests in land, which would connote any possibility of perpetual alienation such as freehold interests as this will deprive posterity of its ancestral heritage.

System of Land Holding in the Republic of Sierra Leone

The Western Area

Land tenure in the Western area traces its history from the British Colonial administration. The area settled by the freed slaves was declared a Colony of the British Empire, and the settlers, having lived in England, and having experienced the English way of life and system of governance, were more inclined to live their lives like the British. As a result of this and other socio-political considerations, British concepts of tenure were introduced in the colony (Western Area). Since the land on which the freed slaves were resettled was purchased in the name of the British monarch, the settlers were therefore tenants of the British Crown and the title passed on to them was the tenancy in fee simple or freehold. After independence in 1961 the Government of Sierra Leone replaced the crown as the "landlord" of the Western Area and the freehold system was allowed to persist.

The Provinces

Land is communally held under customary tenure in the provinces though there are minor differences among the various ethnic communities, the general trend is that land is considered a divine heritage which the spirits of the departed ancestors expect to be preserved and handed down to future generations. This is because land is deemed to belong to a large family comprised of the departed ancestors, the living and the unborn generations. It is regarded as a heritage entrusted to the living with a responsibility to ensure its preservation and subsequent assignment to future generations.

Family Interests: The absolute interest in land is vested in families who have responsibility for their portion of the land. The paramount chief is regarded as the custodian of the land on behalf of the entire chiefdom but decisions regarding land are the preserve of heads of families. The administration of the community interest is vested in the head of the land-owning family who is aided by a council of elders. One very important consequence of the fact that absolute interest in land is vested in the family is that it invests every member of the family with an inherent right to the occupation and use of any part of the family land.

The Individual's Interest: Where a family member wishes to cultivate any part of the family land, he has to obtain special permission from the family head that would normally allocate land to him. In some societies the individual has to pay some money, locally referred to as "kola" or "handshake", to the family head as acknowledgement of the land granted to him. The grant, however does not confer ownership of the land but only confers on him the right to use the land.

State or Public Lands: There are two types of State lands in Sierra Leone; they are Crown Lands and Government Reservations. Crown lands are found in the Western Area while Government Reservations are found in the Provinces.

Crown Lands comprise of lands which have been acquired "for the service of the colony" under the Public Lands Ordinance, 1898.

Road Infrastructure

The public road network constitutes the most important transport infrastructure in the country, carrying about 80% of internal passenger and cargo traffic. The national road network totals about 11,000 km of which some 8,000 km have been functionally classified in the National Road System (NRS) and the remaining 3000 km as local networks and unclassified roads and tracks. Less than 1000 km of the entire network is now paved with at least half of these reported to be in poor condition. Many formerly paved roads have reverted to gravel due to neglect during the civil war. Of the unpaved portions, less than 30% is in fair to good condition (GoSL Vision 2025, August 2003).

Road construction and rehabilitation is now being given the priority it deserves. The Feeder Roads Department of the Ministry of Works, Housing and Technical Maintenance is undertaking the rehabilitation programme with the support of donors. The Government of Sierra Leone recognises the crucial link between the road network, especially feeder roads and food self sufficiency. So far,

the European Union (EU) and the Islamic Development Bank (IDB) have provided funds for road works in four Districts each.

The road rehabilitation programme does not involve the construction of new roads. It essentially deals with the rehabilitation of existing network through formation, regravelling and reconstruction of old bridges and culverts. A National Road Fund provides funding for the maintenance of the road networks, using light equipment from the Plan Pool. Concerns have been raised about the environmental impact of using laterite on the roads, and this will be addressed in the impact assessment section of this report.

Challenges and Constraints

Infrastructure: The poor state of roads in the countryside does not only have direct impacts on the marketing of agricultural produce, but also has indirect consequence on adding to the cost and difficulty of supplying food in the rural areas. Port facilities and costs may also constitute a major constraint on exports, especially food crops which need special handling.

Investment Environment: Long-term investments in agriculture are required if a diversified agricultural export base is to be established. Growth and diversification cannot rely only on the activities of rural small-scale farmers. It will require a new class of entrepreneurs who will invest in larger scale of production, coupled with processing and marketing in order to drive the agricultural sector forward. This is the major role of the private sector in the project.

Sustainability of Exports: The agricultural export market is very competitive and if Sierra Leonean producers are to maintain a place in the export business, then they must develop the culture of competition. This will require the following in all sectors:

- Efficiency of production, backed by strong extension service and availability of inputs including planting materials, fertilizers and pesticides.
- Information on markets and consumer demand and capacity to respond
- Cooperation between all participants in the project – farmers groups as business units, private sector entrepreneurs and cooperatives.
- Innovation in research into new products and varieties.

Environmental Management Concerns

These have been identified as closely related to:

- traditional bush fallow – farming systems and changes;
- increased use of inland valley swamps (IVS) for agriculture and the effects on water management;
- degradation of mangrove and natural forest for fuel wood and timber;
- denuding of watersheds resulting in increased runoff and associated soil erosion and siltation of water ways.

4 PROJECT ADMINISTRATIVE STRUCTURE, MANAGEMENT AND IMPLEMENTATION

4.1 Project oversight and implementation arrangement

The overall responsibility for steering the project implementation will be with the Ministry of Agriculture, Forestry, and Food Security (MAFFS). Other state and non-state institutions such as the Sierra Leone Agricultural Research Institute (SLARI) and the National Federation of Farmers in Sierra Leone will have primary responsibility as implementing agencies for specific activities directly related to their areas of functional responsibility, in line with the project development objective.

The National Steering Committee (NSC) of WAAPP will be maintained and chaired by the Minister of Agriculture (or his/her designee) with the WAATP Coordinator as Secretary. The NSC would have a policy and advisory role and would meet at least twice a year. The functions of the NSC will include: (i) approving the annual work plans; (ii) approving the annual procurement plan; and (iii) reviewing progress in the implementation of the work plans and other aspects of project performance, including taking responsibility on fiduciary oversight responsibilities following World Bank procedures on financial management and procurement; and (iv) ensuring that there is policy and implementation coordination, not only between sub-components of the project but also among all the project implementing institutions.

The existing WAAPP Project Coordination Unit (PCU) will be maintained. The PCU will be responsible for coordinating and supervising the day-to-day implementation of the project. The Coordinator of WAATP will continue to be assisted by the current team of professional and support staff. The functions of the PCU will include: (i) ensure the overall coordination of the project, make sure implementation of components activities complement each other; (ii) manage project funds on behalf of the executing agencies, keep financial records according to international standards, implement internal management control, and ensure regular external audit (in collaboration with the Audit Authority in the country); (iii) prepare and implement Annual Work Plans and Budgets aggregating demand from beneficiary institutions/agencies, and work plans and budgets proposed by implementing agencies/services providers; (iv) identify potential implementing agencies/goods and service providers, organize their selection/hiring, negotiate and sign contracts with selected implementation partners/goods & service providers, and carry out all procurement work related to the project as per approved procurement plans; (v) prepare quarterly, semi-annual and annual project progress and monitoring and evaluation (M&E) reports.

Implementation of components

Component 1: SLARI will provide technical leadership for Component 1. More specifically, sub-component 1.1 will be implemented by the Rokupr Agricultural Research Centre, which is the NCoS for mangrove rice. Sub-Component 1.2 will be implemented by the Njala Agricultural Research Centre (NARC) and the Tecko Livestock Research Centre (TLRC). NARC will be responsible to implementation relating to the cassava value

chain, while TLRC will be responsible for the livestock value chain. A Research Coordinator will be recruited to coordinate all of the activities of the research centers under Component 1. The Centers will be required to sign MOU with the PCU with clearly define deliverables over the life span of the project.

Component 2: The overall technical leadership of Component 2 will rest with MAFFS. However, various divisions within MAFFS and other implementing partners will be responsible for specific programs/activities within the components. The Extension Division shall take lead on reforming the extension delivery services and the innovation platforms; Crops Division shall be responsible for demonstration activities, cassava multiplication and the diversification activities; NaFFSL shall take lead on the capacity building to famer based organizations; SLeSCA shall take lead on the institutional strengthening of the seed system; SMP shall take lead on the rice multiplication scheme; the Livestock Division shall lead the livestock multiplication programme; and the overall Youth empowerment and employment programme shall be led by the PCU, with support from SLeCAD on the Youth networking and mentoring aspect.

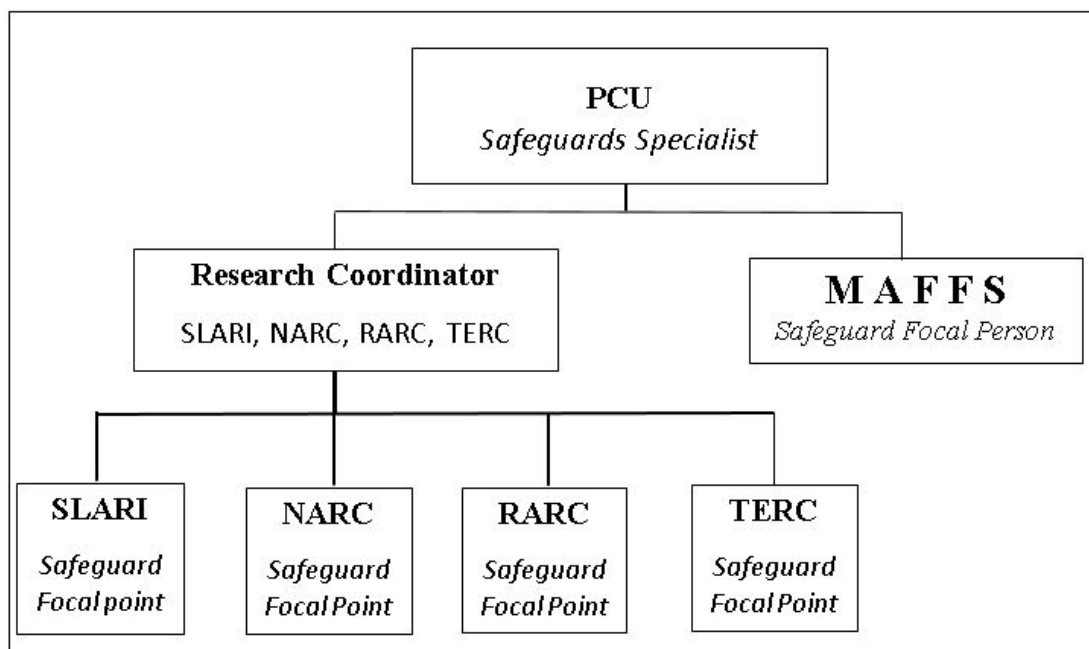
Component 3: The PCU shall have overall coordination and leadership of Component 3. The PCU shall work with various partners in developing the relevant policies and strategies and undertaking of institutional reform and capacity building.

4.2 Institutional roles and responsibility for the ESMF Implementation

As stated earlier, the overall responsibility for steering the project implementation will be with the Ministry of Agriculture, Forestry, and Food Security (MAFFS). The Sierra Leone Agricultural Research Institute (SLARI) and the National Federation of Farmers in Sierra Leone will have primary responsibility as implementing agencies for specific activities directly related to their areas of functional responsibility, in line with the project development objective. The existing WAAPP Project Coordination Unit (PCU) will be maintained. The PCU will be responsible for coordinating and supervising the day-to-day implementation of the project including safeguard issues.

Currently, there is some capacity within the PCU/ WAAAP to implement the ESMF and this will be enhanced with an additional Safeguards Specialist to support the WAATP. The organogram below illustrates how the safeguard reporting arrangement is built into the WAATP and the key institutions responsible for implementing the ESMF and subsequent ESMPs are:

- Project Coordinating Unit (PCU)
- MAFFS Safeguard Focal Point
- Research Coordinator
- Safeguard Focal Points in SLARI, NARC, RARC and TERC



Roles and responsibilities for the implementation of the Framework ESMF

The following personnel from the Project Coordinating Unit (PCU) and relevant persons will be responsible for the implementation of the ESMF and subsequent ESMPs:

- Project Coordinator
- Safeguards Specialists (PCU) - Environmental Safeguards Specialist and Social Safeguards Specialist
- Procurement Specialist (PS-PCU)
- Technical Specialist (TS – PCU)
- Financial Management Specialist (FS – PCU)
- Monitoring and Evaluation Specialist (M&E-PCU)
- Communications Officer (CO-PCU)

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

Table 4: Role and responsibilities for ESMF Implementation

| No | Steps/Activities | Responsible | Collaboration | Service Provider |
|----|---|----------------------|--|------------------|
| 1. | Identification and/or siting of the sub-project | Research Coordinator | <ul style="list-style-type: none"> • Local authority • PCU | |

| No | Steps/Activities | Responsible | Collaboration | Service Provider |
|----|---|---|---|--|
| 2. | Screening, categorization and identification of the required instrument (use the national EIA procedure) | PCU Safeguards Specialists and Research Coordinator | <ul style="list-style-type: none"> • Beneficiary; • Local authority • EPA-SL | |
| 3. | Approval of the classification and the selected instrument by EPA-SL | PCU Coordinator | <ul style="list-style-type: none"> • PCU Safeguards Specialists | <ul style="list-style-type: none"> • Environmental Protection Agency (EPA-SL) • The World Bank |
| 4. | Preparation of the safeguard document/instrument (ESIA, Environmental Audit, simple ESMP, etc.) in accordance with the national legislation/procedure (considering the Bank policies' requirements) | | | |
| | Preparation and approval of the ToRs | PCU Safeguards Specialist | | <ul style="list-style-type: none"> • The World Bank |
| | Preparation of the report | | <ul style="list-style-type: none"> • Procurement Specialist • Local authority | <ul style="list-style-type: none"> • Consultant |
| | Report validation and issuance of the permit (when required) | | <ul style="list-style-type: none"> • Procurement Specialist • Local authority | <ul style="list-style-type: none"> • Environmental Protection Agency (EPA-SL) • The World Bank |
| | Disclosure of the document | | <ul style="list-style-type: none"> • Project Coordinator • CO-PCU | <ul style="list-style-type: none"> • Media • The World Bank |
| 5. | (i) Integrating the construction phase mitigation measures and E&S clauses in the bidding document prior to advertising; (ii) Ensuring that the constructor prepares his ESMP (C-ESMP), gets approval and integrates the relevant measures in the works breakdown structure (WBS) or execution plan. | Technical staff in charge of the sub-project (TS-PCU) | <ul style="list-style-type: none"> • PCU Safeguards Specialist • PS-PCU | <ul style="list-style-type: none"> • Consulting Firm (Supervisor) |
| 6. | Implementation of the other safeguards measures, including | PCU Safeguards Specialists | <ul style="list-style-type: none"> • PS-PCU • TS-PCU • FS-PCU | <ul style="list-style-type: none"> • Consultant |

| No | Steps/Activities | Responsible | Collaboration | Service Provider |
|----|--|----------------------------|---|---|
| | environmental monitoring (when relevant) and sensitization activities | | <ul style="list-style-type: none"> Local authority EPA-SL | <ul style="list-style-type: none"> National specialized laboratories NGOs |
| 7. | Oversight of safeguards implementation (internal) | PCU Safeguards Specialists | <ul style="list-style-type: none"> M&E-PCU FS-PCU Local authority | Consulting Firm (Supervisor) |
| | Reporting on project safeguards performance and disclosure | Coordinator | <ul style="list-style-type: none"> M&E-PCU PCU Safeguards Specialists | |
| | External oversight of the project safeguards compliance/performance | PEA | <ul style="list-style-type: none"> M&E-PCU FS-PCU PS-PCU Supervising Consultant | |
| 8. | Building stakeholders' capacity in safeguards management | PCU Safeguards Specialists | <ul style="list-style-type: none"> PS-PCU World Bank Safeguards Specialists | <ul style="list-style-type: none"> Consultant Other qualified public institutions |
| 9. | Independent evaluation of the safeguards performance (Audit) | PCU Safeguards Specialists | <ul style="list-style-type: none"> PS-PCU | <ul style="list-style-type: none"> Consultant |

4.3 Stakeholder consultations

The ESMF preparation included stakeholder consultations. Key project stakeholders were identified for consultations and these included Government Ministries, State Agencies/ Organisations/ and Departments, Project offices, University/Research Institutions, Non-governmental organization and local communities.

Meetings were held with key officials and opinion leaders to gauge level of awareness and involvement with the project, concerns of project implementation, and to obtain relevant documents or baseline information of project area. The consultations also served to gather information on the mandates and permitting requirements to inform the development of the Project.

Consultees included the following:

- Ministry of Agriculture, Forestry and Food Security (Extension Division, Crop Services Division, Gender desk, NGO Desk)
- National Federal of Farmers of Sierra Leone (NaFFSL)
- Sierra Leone Chamber for Agricultural Development (SLECAD)
- Sierra Leone Agricultural Research Institute (SLARI)

- Makeni District Agricultural Office
- Farmer Based Organizations (Makeni District, Bombali Province)
- Women, Youth and Community Elders of Kwama Community, Koya Rural District, Western Area Rural Province
- NGOs (Inter Aide, Samako Agricultural Project, Wipe Our Tears, Farmers Network, CNC Watch New Africa Women and Children’s Foundation of Sierra Leone)

The full list of stakeholders contacted and issues discussed is presented in **Annex 3**. The consultations proved that, the WAAPP has been very beneficial to the national agricultural institutions and expectations are high that the output of the WAATP will be more evident at the community level. Environmental and social safeguard concerns have been recognized in the implementation of the sub-projects under WAAPP including the preparation of ESIA reports for the upgrading of facilities at the RARC and NARC. During WAATP, the communities will be sensitized on safeguards issues and socio-cultural and safety concerns regarding for example, access to cultural sites and education on the use of PPEs will be highlighted.

5 ANALYSIS OF THE NATIONAL ENVIRONMENTAL AND SOCIAL ASSESSMENT FRAMEWORK

The relevant national and sector policies and plans, national legal and institutional frameworks and World Bank safeguards policies to guide the proposed projects are listed here and briefly described.

5.1 National Policy and Regulatory Framework

Agriculture in Sierra Leone is a significant part of its economy accounting for over 50 percent national Gross Domestic Product (GDP). Two-thirds of the population of Sierra Leone is involved in subsistence agriculture. The agricultural sector has been growing consistently though the country remains a net importer of food.

The key Sierra Leonean agricultural policies as well as environmental and other statutory laws and regulations to guide WAATP from conceptualization of the proposed project to implementation and monitoring as well as decommissioning include the following:

- Agricultural Policy
- The Land Policy, 2005;
- Environmental Protection Agency Act, 2008 and the EPA (Amendment) Act, 2010;
- The Local Government Act, 2004;
- The Constitution of Sierra Leone, 1991;

Agricultural Policy

Agricultural development is a priority for the Government of Sierra Leone and falls under the remit of the Ministry of Agriculture, Forestry and Food Security (MAFFS). On 22 September 2009 Sierra Leone signed the Comprehensive Africa Agricultural Development Programme (CAADP) compact, agreeing to raise the percentage of the budget spent and agriculture to 10 percent. In 2007 the percentage of the budget spent on agriculture was 1.7 percent but this had increased to 9.9 percent in recent years.

Food Security Policy (FSP)

The FSP is based on the following pillars: (a) Agricultural Intensification which underscores the need of cultivating improved varieties through appropriate agronomic practices, including the use of fertilizers and pesticides to ensure increased yields; (b) Crop Diversification which promotes the cultivation of improved varieties of other crops other than rice through sensitization and awareness raising of their nutrient value to reduce the dependence and demand for rice; (c) Natural Resource Conservation which encourages the prudent use of water and watershed resources in an effort to increase agricultural land resources; and (d) Food Safety Nets which provides food aid support to farmer and their dependents during hunger seasons to prevent them from eating seed rice and vulnerability to sicknesses. The specific objectives are to: increase diversified agricultural production and food availability, raise rural incomes and employment while ensuring adequate protection of the environment, maximize foreign exchange earnings from agriculture and ensure balance regional growth and equitable distribution of income.

These objectives are to be achieved through coordinated short and medium term strategies and measures in the key sectors that influence the various dimensions of the country's food problems. Interventions will include addressing availability and sustainability of food supply and accessibility at the household and national levels in the short to medium term. The short and medium term strategies will be combined with other sectoral interventions, including incentives and facilities to attract private sector investment in agricultural production, to ensure sustainability in increased food production, create rural jobs and income for growth in agriculture, livestock and fisheries sectors. Further short term government interventions are diversification of the crop mix in the uplands, and intensification of production from the small hectares cultivated in the lowlands. This will be achieved through the introduction of new technology, input provision through credible farmers' associations at the local level, and targeted extension support, especially to the unemployed youth and the small-scale farmers. Government will also continue to encourage private sector investment in agriculture, especially for the production of food for the market, in the short term. Provision of inputs and appropriate farm machinery on a cost recovery basis or favourable credit terms as appropriate and extension support will be central to this strategy. Also, government will work through local authorities to facilitate access by the private sector to land for commercial cultivation and markets and storage facilities.

In the medium term, support to small-scale farmers will aim at increasing their capacity to produce enough to meet their own input needs directly or through established input and output markets. Emphasis will also be placed on increasing the stability and reliability of food supplies through a comprehensive feeder (farm-to-market) roads programme and the provision of market, storage and drying floor infrastructure in all chiefdoms in the country. Operations research and development, land development and use, and extensive training of extension staff and farmers will also be pursued.

The National Lands Policy, 2005

As provided in the Constitution, the 2005 National Land Policy also provides for the compulsory acquisition of land in the public interest. The principles of the land policy include among others:

- The principle of land as a common national or communal property resource held in trust for the people and which must be used in the long term interest of the people of Sierra Leone. Such principle only holds where it does not violate existing rights of private ownership.
- Compensation to be paid for lands acquired through compulsory Government acquisition will be fair and adequate and will be determined, among other things, through negotiations that take into consideration government investment in the area.
- Local Authority Assemblies, (District and Town Council), may negotiate for land for development purpose and concessionary prices or as gift, but all such grants should be properly documented and processed.
- No interest in or right over any land belonging to an individual or family can be disposed of without consultation with the owner or occupier of the land.
- No interest in or right over any land belonging to an individual or family can be compulsorily acquired without payment, in reasonable time, of fair and adequate compensation.

The National Environmental Policy

The National Environmental Policy (NEP) was approved by cabinet since 1990 and was subsequently revised in 1994 (GOSL, 1994). The NEP aims at achieving sustainable development in Sierra Leone, through sound environmental and natural resources management. The policy objectives are to:

- Secure for all Sierra Leoneans a quality of environment adequate for their health and well-being;
- Conserve and use the environment and natural resources for the benefit of present and future generation; restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere; to preserve biological diversity, and uphold the principle of optimum sustainable yield in the use of living natural resources and ecosystems; [SEP]
- Raise public awareness and promote understanding of the essential linkages between the environment and development and to encourage individual and community participation in environmental improvement efforts [SEP]

The NEP also contain among others sector policies on land tenure, land use and soil conservation; forests and wildlife; biological diversity and cultural heritage; mining and mineral resources; coastal and marine resources; settlements, recreational space and greenbelts and public participation. The policy goal for the land tenure, land use and soil conservation is to “use available land in such a way that its quality is conserved so as to enhance its potential for continuous productivity and to prevent degradation”. One of the major strategies which government is now pursuing to achieve the goals of the NEP is “to make as priority Environmental Impact Assessment (EIA) of proposed activities which may significantly affect the environment and the use of a resource.”- (GOSL, 1994).

The NEP also has a specific goal and policy for water resource management which ensures adequate quantity and acceptable water quality to meet domestic, industrial, transportation, agricultural and fisheries by accelerating programmes for the utilization of water for the various uses and expending water quality management, monitoring and assessment programmes. Although laws prohibiting pollution of water bodies exist they are hardly enforced.

Environmental Protection Agency Act, 2008 and the EPA (Amendment) Act, 2010

The Environmental Protection Agency Act, 2008 is an Act to establish the Sierra Leone Environmental Protection Agency (SLEPA), to provide for the effective protection of the environment and for other related matters. This Act mandates the EPA to amongst others;

- Advise the Minister on the formulation of policies on all aspects of the environment and in particular make recommendation for the protection of the environment.
- Issue environmental permits and pollution abatement notices for controlling the volume, types, constituents and effects of waste discharges, emissions, deposits or other source of pollutants of substances which are hazardous or potentially dangerous to the quality of the environment or any segment of the environment.
- Prescribe standards and guidelines relating to ambient air, water and soil quality, the pollution of air, water, land and other forms of environmental pollution including the discharge of waste and the control of toxic substances.

- Ensure compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects.
- Impose and collect environmental protection levies in accordance with this Act or regulations made under this Act.

Sections 24 of the Act list project activities requiring an Environmental Impact Assessment license which includes infrastructural projects such as laying of transmission lines and pipelines. These may probably be considered to include off shore activities though the national authority may be limited to territorial waters only. Further site-specific information will be given in the ESIA report to be prepared for this project. Sections 25 and 26 of the Act describe factors for determining whether a project requires an environmental impact assessment and the contents of environmental impact assessment respectively. The Act describes the procedures to be followed to obtain permits for both existing and proposed undertakings through the conduct of environmental impact assessments. The Environmental Protection Agency (Amendment) Act, 2010 sought to give executive powers to the Board.

The Local Government Act, 2004

The Act establishes the local council as the highest political authority in the locality and who shall have legislative and executive powers to be exercised in accordance with this Act. This Act in its First Schedule under section 2 establishes the localities namely: Districts, Towns, and Cities. The part II of this schedule also establishes the number of Paramount Chiefs in each local council. The Third Schedule establishes the functions devolved to the local councils. The Fourth and Fifth Schedules establish departments under each local council, and Valuation list and Rate Books respectively.

The Constitution of Sierra Leone, 1991

The Constitution includes some provisions to protect the right of individuals to private property, and also sets principles under which citizens may be deprived of their property in the public interest as described in Section 21 of the Constitution. It also makes provision for the prompt payment of adequate compensation and access to the court or other impartial and independent authority for the determination of the land owner's interest or right, and the amount of any compensation to which he is entitled and for the purpose of obtaining prompt payment of that compensation

5.2 Institutions with Interest in the Project

Some of the relevant institutions which will have some influence on the project include the following, and mandates and interest in project are subsequently described:

- Ministry of Agriculture, Forestry and Food Security (MAFFS);
- Ministry of Lands and Country Planning;
- National Federation of Farmers in Sierra Leone
- Sierra Leone Agricultural Research Institute
- Sierra Leone Environmental Protection Agency (EPA- SL);
- Non-Governmental Organisations (NGOs).

Ministry of Agriculture, Forestry and Food Security

The Ministry of Agriculture Forestry and Food Security (MAFFS) has its mandate to improve and support the agricultural sector in Sierra Leone. The major objectives of the Ministry of Agriculture and Food Security are, among others:

- To increase and diversify domestic production and reduce importation of food with a view to achieving food self-reliance and food security in the medium to long term.
- To increase agriculture productivity, output, rural income and employment while ensuring adequate protection of the environment;
- To secure balanced Regional Agricultural development and growth as well as equitable income distribution; and
- To maximize foreign exchange earnings from agricultural production.

Ministry of Lands and Country Planning

The Ministry is responsible for addressing land acquisition and transfers, land ownership and use, national development in a planning capacity and to provide advisory services to the public on land matters and is also responsible for physical planning and management of the forestry resources.

The Ministry of Land is empowered to carry out all land management and two important functions it performs are administration of all state and public lands and the acquisition of property and the payment of compensation.

NGOs

There are few NGOs in Sierra Leone with interest in environmental and resource management. Some of these are interested in the natural conservation and monitoring of the country's wildlife and natural habitats. Among the NGOs involved in environmental management are Conservation Society of Sierra Leone (CSSL), Environmental Foundation for Africa (EFA), and Royal Society for the Protection of Birds (RSPB).

Conservation Society of Sierra Leone (CSSL): The Conservation Society for Sierra Leone promotes the wise use and management of Sierra Leone's Natural Resources through Education, Advocacy, Research and Site Action including mangroves protection.

5.3 World Bank Safeguards

The World Bank (WB) has published policies/procedures to guide the safe development of projects it is funding. The triggered policies are described in the table below. The WB requirements are not inconsistent with the national requirements and therefore no implementation conflicts are foreseen.

Table 3: Summary of World Bank Safeguard Policies

| No | World Bank Safeguard Policy | Summary of core requirements | Remarks |
|----|--------------------------------------|---|---|
| 1 | OP 4.01 Environmental Assessment | <p>Requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources); and trans boundary and global environmental aspects. It categorizes proposed projects into categories A, B, C or FI based on the extent of adverse impacts anticipated from the project.</p> <p>For Category A and B projects, an ESMP is to be prepared to guide the Implementation of mitigation measures for all identified environmental impacts from the proposed warehouse project.</p> | The project may have significant, but moderate environmental and social consequences. These impacts can be managed through the implementation of mitigation measures. |
| 2 | OP 4.09: Pest Management | Support integrated approaches to pest management, identify pesticides that may be used under the project and develop appropriate pest management plan to address this. | The project may involve pest management. To the extent possible IPM will be the preferred choice, however should the use of pesticides be necessary the PMP prepared will provide guidance for handling such pesticides |
| 3 | OP 4.11: Physical Cultural Resources | Investigate and inventorise cultural resources potentially affected. Include mitigation measures when there are adverse impacts on physical cultural resources or avoid if possible | Some community shrines may be affected but and chance find procedures will be established to address these if encountered at project implementation. |
| 4 | OP 4.12: Involuntary Resettlement | Assist displaced persons in their effort to improve or at least restore their standards of living. Avoid resettlement where feasible or minimise. Displaced persons should share in project profits. | Livelihood and land issues may be identified. When these are determined the RPF prepared as part of the project will provide guidance for the development of a RAP or ARAP |

| No | World Bank Safeguard Policy | Summary of core requirements | Remarks |
|----|-----------------------------------|--|--|
| | | <p>The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts.</p> <p>The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects.</p> | <p>depending on the number of affected people.</p> |

6 PROJECT ENVIRONMENTAL AND SOCIAL RISKS, GENERIC POTENTIAL IMPACTS

The environmental and social impacts of the WAATP, for the most part, are expected to be moderate, site specific, and easily manageable through the implementation of mitigation measures to an acceptable level.

6.1 Key potential activities and interventions of environmental and social significance

As listed earlier, the proposed project has five primary components. Some project components and activities attracting safeguards measures are described below:

Component 1

Procurement of works

NCoS Infrastructure/ equipment

- Upscaling of electricity provision preferably with solar sources of electricity
- Upscaling of water supply systems including solar powered pumping machines
- Reinforcement wall to contain erosion of biological sciences laboratory
- Rehabilitation of library facilities
- Provision of high speed internet facility
- Upgrading of research facilities (screen houses and soil laboratories)
- Rehabilitation of deep water tank system

NARC- Cassava Infrastructure/ equipment

- Upgrading electricity provision to office and laboratories
- Upgrading water supply, filtration and distillation systems to office/ laboratories and residential sites
- Provision of high speed internet facility
- Rehabilitation and upgrading of cassava processing centre for production of high quality cassava flour

TLRC- Poultry and small ruminants

- Construction of poultry houses
- Construction of small ruminant houses
- Provision of high speed internet facility

Research (trials, data collection and analysis, evaluation and documentation)

- Screening of mangrove varieties for biotic and abiotic stress, including the use of the deep water tank system
- Maintenance of mangrove and lowland breeding lines
- Bio- fortification of rice (high zinc etc)

- Integrated soil fertility management
- Screening for stress tolerance and varietal improvement using marker assisted technology
- Integrated Pest Management
- Integrated soil fertility management (deep placement of urea super- granules in mangrove rice)

Component 2

Scaling up of technology dissemination

- Establishment of demonstration trials through Farmer Field Schools (FFSs) and Farmer Business Schools (FBSs) for rapid dissemination of released technologies

Introduce and demonstrate (and promote) new improved technologies

- Rice production and post- harvest and marketing
- Cassava production and post- harvest and marketing
- New improved technologies for poultry and small ruminants

Diversification of farm/ rural activities

- Commercial vegetable production
- Establishment of hatchery facility for the production of fingerlings for fisheries and aquaculture

National seed system

- Rehabilitation and equipping the seed certification laboratory
- Rice seed production
- Decentralized cassava planting material production

6.2 Description of some potential impact issues

This section provides the potential environmental and social risks and impacts associated with the specific project component activities listed above during both construction and operational phases.

Table 4: Sub- project activities and potential environmental and social impact issues/ concerns

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|---|---|--|
| | Environmental | Social |
| <p>22. Upscaling of electricity provision preferably with solar sources of electricity</p> <p>23. Upgrading water supply, filtration and distillation systems to office/ laboratories and residential sites</p> <p>24. Reinforcement wall to contain erosion of biological sciences laboratory</p> <p>25. Rehabilitation of library facilities and laboratories</p> <p>26. Provision of high speed internet facility</p> <p>27. Rehabilitation of deep water tank system</p> <p>28. Rehabilitation and upgrading of cassava processing centre for production of high quality cassava flour</p> <p>29. Construction of poultry and small ruminant houses</p> <p>30. Screening of mangrove varieties for biotic and abiotic stress, including the use of the deep water tank system</p> <p>31. Maintenance of mangrove and lowland breeding lines</p> <p>32. Bio- fortification of rice (high zinc etc)</p> <p>33. Screening for stress tolerance and varietal improvement using marker assisted technology</p> <p>34. Integrated Pest Management</p> <p>35. Integrated soil fertility management (deep</p> | <p><u>Biodiversity losses</u></p> <ul style="list-style-type: none"> ✓ Fauna and flora losses from project activities and also due to poaching and land conversion in natural resource areas near project sites <p><u>Deforestation</u></p> <ul style="list-style-type: none"> ✓ Extensive agriculture leading to deforestation <p><u>Water resources and pollution</u></p> <ul style="list-style-type: none"> ✓ Pollutant discharges into local water bodies both surface and groundwater ✓ Disposal of treated wastewater ✓ Exposure to agrochemicals including pesticides ✓ Sediment movement into water bodies from poor land clearing practices <p><u>Vegetation losses, soil disturbance and Erosion</u></p> <ul style="list-style-type: none"> ✓ Site clearing ✓ Increased soil erosion due to disturbances ✓ Soil salinization, acidification <p><u>Air quality</u></p> <ul style="list-style-type: none"> ✓ Site clearing and excavation works ✓ Transport of construction materials and waste ✓ Exhaust emissions for equipment including heavy duty trucks <p><u>Vibration and Noise</u></p> | <p><u>Land and compensation issues</u></p> <ul style="list-style-type: none"> ✓ Clear understanding of land use and occupancy ✓ Conflicts in land claims ✓ Land acquisition and compensation issues ✓ Discrimination, lack of grievance mechanisms for land owners and users ✓ Temporary and permanent properties affected by project <p><u>Maintaining Livelihoods</u></p> <ul style="list-style-type: none"> ✓ Community acceptance of improved technologies and approaches ✓ Demand for alternative/ additional sites to carry out trials ✓ Adequate, documented and transparent compensation for affected persons in order to vacate or release land for trials ✓ Disruption of work programs from rehabilitation and upgrading works <p><u>Security and Safety</u></p> <ul style="list-style-type: none"> ✓ Safety and security of laboratory and field workers ✓ Invasion of privacy of host communities and their households ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process <p><u>Occupational health and Safety</u></p> <ul style="list-style-type: none"> ✓ Risks related to capacity deficiencies in biotechnology and biosafety. ✓ Lack of awareness creation programs on health and safety |

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|--|---|---|
| | Environmental | Social |
| <p>placement of urea super-granules in mangrove rice)</p> <p>36. Establishment of demonstration trials</p> <p>37. Rice and cassava production and post-harvest and marketing</p> <p>38. New improved technologies for poultry and small ruminants</p> <p>39. Commercial vegetable production</p> <p>40. Establishment of hatchery facility for the production of fingerlings for fisheries and aquaculture</p> <p>41. Rice seed production</p> <p>42. Decentralized cassava planting material production</p> | <ul style="list-style-type: none"> ✓ Site clearing and excavation works ✓ Concrete works ✓ Cutting of roads ✓ Disturbance to offices/ laboratory workers/local communities and general public <p><u>Visual intrusion</u></p> <ul style="list-style-type: none"> ✓ Construction sites <p><u>Generation and disposal of solid waste</u></p> <ul style="list-style-type: none"> ✓ Construction waste ✓ Disposal of Obsolete chemicals and unusable equipment/ materials ✓ Disposal of laboratory waste ✓ Disposal of wastes generated from field trials and by laboratories ✓ Unsafe disposal of used pesticide containers <p><u>Pesticide management</u></p> <ul style="list-style-type: none"> ✓ No integrated approach to limiting crop pests: elimination of the natural enemies of crop pests and consequent alteration of biological pest control methods. ✓ Development of resistance to pesticides, encouraging increases in and reliance on chemical pesticides. ✓ Weak institutional capacity for pesticide management (control import, sale and distribution of pesticides) <p><u>Public health and safety, and traffic issues</u></p> | <ul style="list-style-type: none"> ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process ✓ Use of pesticides and disposal of empty containers ✓ Exposure to snake bites ✓ Exposure to water related diseases <p><u>Cultural Heritage</u></p> <ul style="list-style-type: none"> ✓ Access to local shrines ✓ Preservation of local cultural identity and heritage ✓ Compensation issues ✓ Community pride and support ✓ Community relinquishing/ sharing heritage for greater good <p><u>Resource Access and Possible Restriction</u></p> <ul style="list-style-type: none"> ✓ Rights to question and have individual considerations addressed ✓ Possible alternative options ✓ Established grievance redress options |

| Sub- Project activities/interventions | Potential Impact Issues/ concerns | |
|---------------------------------------|--|--------|
| | Environmental | Social |
| | <ul style="list-style-type: none"> ✓ Construction works ✓ Poor management of agrochemicals ✓ Waterborne diseases ✓ Poor traffic management at work sites | |

7 GENERIC GUIDELINES FOR MITIGATION AND ENHANCEMENT MEASURES

7.1 Generic Mitigation Measures

These mitigation guidelines are given to address the significant impacts. The responsibilities for implementing these measures are described later in the report.

Table 5: Environmental and social mitigation measures

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|--|
| <p>Water Resources and pollution</p> | <p><u>Construction stage</u></p> <ul style="list-style-type: none"> ✓ Works not to be executed under aggressive weather conditions such as rains or stormy conditions. ✓ No solid waste, fuels, or oils to be discharged into any section of a waterway. ✓ Construction to be done in phases to minimize impacts and exposure of soil. ✓ Excavated materials and silt, which cannot be used will be disposed of at appropriate sites as per the Waste Management Plan prepared by contractor and approved by the relevant authority. ✓ Temporary sediment barriers to be installed on slopes to prevent silt from entering water courses. ✓ Maintenance, fuelling and cleaning of vehicles and equipment to take place at off-site workshop with adequate leakage prevention measures <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Research teams to follow best practices in order to minimize waste and pollution of water and also will educate farmers through the agricultural extension officers |
| <p>Air quality, Vibration and Noise</p> | <p><u>Construction stage</u></p> <ul style="list-style-type: none"> ✓ The working times and construction schedule will be coordinated rationally for all the various construction and engineering companies which will be on site; ✓ Neighbouring offices and communities will be duly informed early of all demolition/constructional activities. ✓ The construction and other engineering firms will be selected for the project based on their ability to adopt acceptable engineering practices and their possession of suitable equipment holdings to ensure low noise and air quality emission; ✓ Loading and transportation of demolition debris shall be done during daytime and will avoid relatively noisy equipment operating during the night; ✓ Stock piles of debris will be covered to prevent re-suspension of dust into the air; ✓ On-site mixing of cement, sand stone and other constructional materials will be done in an enclosed space and these materials shall be stored in an enclosed yard or covered tightly; ✓ Speed limit shall be set for construction and transportation vehicle both within and outside the project site to avoid re-entrainment of dust; and ✓ A water bowser will be available on site for frequent dousing or sprinkling to suppress dust from earthworks. <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Adequate road signs to be planted on dust roads to limit vehicular speeds |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|---|
| | <ul style="list-style-type: none"> ✓ Properly designed and constructed speed ramps on access roads |
| Soil pollution | <ul style="list-style-type: none"> ✓ Research teams to follow best practices in order to minimize waste and pollution of soil and also will educate farmers through agricultural extension officers |
| Visual intrusion | <ul style="list-style-type: none"> ✓ Public to be well informed of upcoming project using appropriate signages and display boards prior to contractor accessing sites; ✓ Construction activities to be done in sections to reduce impacts of change and visual intrusions to the general public. ✓ The construction sites to be hoarded off from public view. ✓ Good housekeeping measures, such as regular cleaning, to be maintained at the construction site. ✓ Ensure an acceptable post-construction site as per provisions in the contract. ✓ Facilities will be properly designed and constructed to blend with the existing environment |
| Land acquisition and compensation issues | <ul style="list-style-type: none"> ✓ Consult affected property owners/users/ communities and seek their consent early in the project development process ✓ Allow affected persons to salvage their properties (including crops) before mobilizing to site to start work ✓ Ensure fair and adequate compensation is paid to all affected persons prior to commencement of construction activities as per the provisions of the RPF ✓ Obtain the required developmental permits from the respective authorities before start of work ✓ Government to pursue one- time payment for all land being used by various agricultural institutions. The RPF will assist to determine options, principles and approaches to follow to acquire land satisfactorily. ✓ A formal grievance redress mechanism to be established and implemented |
| Generation and disposal of wastes | <p>Apply the principles of Reduce, Recycle, Reuse and Recover for waste management through the following actions:</p> <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Excavated earth materials will, as much as possible, be re-used for back filling purposes to reduce waste ✓ Ensure that the required amounts of construction materials are delivered to site to reduce the incidence of excess material ✓ Provide bins on site for temporary storage of garbage such as lubricant containers, drinking water sachets/ bottles and carrier bags/package materials. ✓ Ensure judicious use of construction materials such as pipes, laterites, sand, etc. to reduce waste ✓ All metal scrap waste will be disposed of at sites approved by the relevant authorities or sold to approved third party agents for use by metal dealers. ✓ Contractor to work according to a prepared and agreed Solid Waste Management Plan. |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|---|---|
| | <ul style="list-style-type: none"> ✓ Project management will ensure that as part of the bidding process, contractors clearly indicate a suitable and District Council approved dumpsite for disposal of debris; ✓ Reusable building materials like roofing sheets, windows and doors, and cement blocks may be salvaged and given to the Centres for use. <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ Waste collection bins to be sited at vantage points to serve the general public ✓ Warning signs to be posted at suitable locations against littering with possible sanctions indicated ✓ Proper arrangement with waste collection companies through the Councils to regularly collect and dispose of solid waste ✓ Waste materials will be incinerated and chemicals will be collected and neutralized prior to disposal. ✓ Laboratory workers will use appropriate PPEs |
| Maintaining Livelihoods | <ul style="list-style-type: none"> ✓ Ensure appropriate compensations are paid to PAPs as defined in the RPF; ✓ Employment and other opportunities to be given to local communities as much as possible. ✓ The research centres will mostly rely on their own power sources which will be maintained regularly for reliable supply and minimize work interruption. ✓ Frequent on-the job training for laboratory staff will greatly reduce equipment down time and provide reliable results. ✓ Staff will therefore be trained to specialize in the use of particular equipment |
| Public Health and Safety, and Security Housekeeping and Sanitation | <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Works on exposed trenches and earth materials will, as much as possible, be completed before new earth dug and trenches are created. ✓ Work areas to be hoarded off adequately to avoid inquisitive trespassers especially children ✓ Warning signs to be posted around work areas to discourage trespassers ✓ Contractors to maintain adequate security at construction sites to avoid pilfering or vandalising of property ✓ Visibility to be ensured in the night time by providing adequate lighting ✓ Construction workers educated on personal and public health issues. Protection eg., condoms provided against sexually transmitted diseases ✓ On completion of the works, all temporary installations will be dismantled, all plant and equipment de-mobilized, waste and left over materials and debris removed by the contractor, and the site left clean and tidy ✓ Bulldozer, hydraulic excavator, pumps, generator, vehicles and other equipment and machinery used for the project will be relocated to new or other project sites in the country managed by the contractor. ✓ Construction workers will be provided separate sanitary facilities which will be kept clean at all times by the contractor. Free range urination/ defecation will not be allowed; |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|--|
| | <ul style="list-style-type: none"> ✓ Covered dust bins will be provided on site for collection of domestic solid waste and shall be disposed of by the contractor at the identified waste dumps. <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ Encourage community leadership to form watch committees to improve security ✓ Work with police force to provide police posts at all major project areas ✓ First aid facilities to be available at all sites with suitable arrangements with local health facilities to deal with emergencies |
| Traffic management | <ul style="list-style-type: none"> ✓ Contractors to provide traffic management plans to be approved by relevant authorities and client ✓ Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians within academic environments ✓ Works to be completed on time to minimize inconvenience to motorists and pedestrians <p><u>Operational stage</u></p> <ul style="list-style-type: none"> ✓ Adequate road signs to be planted on access roads to limit vehicular speeds ✓ Construct properly designed speed ramps on access roads |
| Pest management | <ul style="list-style-type: none"> ✓ Pest management plan to be prepared to guide the project |
| Occupational health and safety | <p><u>Construction phase</u></p> <ul style="list-style-type: none"> ✓ Engage experienced artisans for construction works. ✓ All workers should be given proper induction/orientation on safety. ✓ The contractors will have a Health & Safety Policy and procedures to guide the construction activities. ✓ Regularly service all equipment and machinery to ensure they are in good working condition. ✓ Ensure there are first aid kits on site and a trained person to administer first aid. ✓ Provide and enforce the use of appropriate personal protective equipment (PPE) such as safety boots, reflective jackets, hard hats, hand gloves, earplugs, nose masks, etc. ✓ Proof of competence for all equipment/machine operators will be required and established through inspection of valid drivers or operator’s license or documents. ✓ Comply with all site rules and regulations. ✓ Apply sanctions where safety procedures are not adhered to. ✓ Site meetings should create awareness on OHS. ✓ Construction workers educated on personal and public health issues. Protection eg., condoms provided against sexually transmitted diseases <p><u>Operational phase</u></p> <ul style="list-style-type: none"> ✓ PPEs to be provided for all field workers and usage will be enforced to provide protection against chemicals and also reptiles. |

| Environment, Social and Health Impact Issue/ Concern | Proposed Mitigation Action/ Measures |
|--|---|
| | <ul style="list-style-type: none"> ✓ Farmers will be educated on hazards and encouraged to use PPEs ✓ All empty agrochemical containers to be physically destroyed and properly disposed of eg. Land burial. ✓ New equipment to be introduced in the laboratories, engineering sections and for field work will represent current technology and are state of the art machines. These are expected to be safer to operate and workers will need to be sufficiently trained to master the operation of these machines. Appropriate PPEs will be provided to safeguard health of all workers. ✓ Offenders will be appropriately sanctioned; ✓ Regular training programs will be organized for staff on work place safety and health issues and effective use of equipment/machinery; ✓ Management may will institute incentive packages for departments that record least accidents |
| Cultural Heritage | <ul style="list-style-type: none"> ✓ Traditional authority responsible for sanctity of local shrines properly identified and consulted ✓ Necessary cultural rites agreed with community and performed prior to access to sites and at pre determined time periods |

8 THE FRAMEWORK ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

This document provides guidance to ensuring satisfactory design and implementation of all safeguard actions relating to project activities. It describes the procedures to be followed which are consistent with national and World Bank safeguard provisions. Hence the ESMF provides the mechanism to be followed to:

- Screen proposed project interventions, identifying potential environmental and social impacts and management of safeguard policies implications;
- Design implementation arrangements by WAATP including institutional roles and responsibilities
- Train and ensure adequate capacity of institutions to carry out their desired functions
- Monitor the ESMF measures implementation;
- Adequately identify and engage with Stakeholder;
- Determine the costs related to the implementation of the ESMF.

8.1 The Environmental and Social Screening

The main purpose of the preliminary screening exercise is to determine whether projects are likely to have significant potential negative environmental and social impacts and therefore to confirm the appropriate level of assessment required in consistency with the requirements of the EPA-SL and the World Bank provisions.

Under component 1, the proposed Research Coordinator (RC) will on behalf of the implementing agencies (SLARI, NARC, RARC, TERC), be directly responsible for all safeguard activities and will therefore foremost carry out the preliminary environmental and social screening of proposed projects by using the checklist suggested in **Annex 1**. He will be assisted by appointed safeguard focal persons in the collaborating institutions at SLARI, NARC, RARC and TERC. If significant impacts are anticipated then the EPA- SL must be consulted and the national Environmental Assessment (EA) procedures duly followed.

When there are minimal or no impacts (as determined using the checklist), the RC must necessarily consult with the PCU safeguards specialist for confirmation. Once an agreement is reached, the RC may proceed with the minimum regular reporting requirements which will be discussed and agreed with the PCU.

Under Component 2, the task described above for the RC will be carried out by a MAFFS appointed safeguard officer.

When there may be doubts concerning project risks and impacts, the PCU should consult the EPA- SL for guidance as provided by the Sierra Leonean EA procedures as well as the World Bank safeguards team to ensure consistency with the provisions of the policies triggered.

The formal environmental approval and permitting processes will also be guided by the EPA-SL environmental procedures. All environmental assessments must be materially consistent with the applicable World Bank Safeguards Policies, which provides guidance on the

environmental assessment procedures for WB funded projects. The SL procedures (EPA, 2008) have also established a process to screen and evaluate all developments, undertakings, projects and programmes which have the potential to give rise to significant environmental impacts. There is consistency with both provisions.

Those projects requiring EPA clearance will only commence when an environmental license has been procured from the EPA- SL. The Agency has provided the list of projects for which ESIA is mandatory as shown in the box below:

| |
|---|
| Environment Protection Agency Act, 2008 FIRST SCHEDULE (Section 24) |
| Projects requiring Environmental Impact Assessment Licenses |
| A licence is required for the projects whose activities involve or include the following: |
| (a) substantial changes in renewable resource use (e.g. conversion of land to agricultural production, forestry or to pasture land, rural development, timber production); |
| (b) substantial changes in farming and fisheries practices (e.g. introduction of new crops, large scale mechanisation or use of chemicals in agriculture); |
| (c) exploitation of hydraulic resources (e.g. dams, drainage and irrigation projects, water basin development, water supply); |
| (d) infrastructure (e.g. roads, bridges, airports, harbours, transmission lines, pipelines, railways); |
| (e) industrial activities (e.g. metallurgical plants, wood processing plants, chemical plants, power plants, cement plants, refinery and petro-chemical plants, agro-industries). |
| (f) extractive industries (e.g. mining, quarrying, extraction of sand, gravel, salt, peat, oil and gas); |
| (g) waste management and disposal (e.g. sewerage systems and treatment plants, landfills, treatment plants for household and hazardous waste); |
| (h) housing construction and development schemes; |
| (i) establishment of places of entertainment, motor repair garages and welding shops; |
| (j) importation of second hand vehicles. |

The EPA- SL procedures for environmental licensing have been provided in the Annex 2 and these will be followed to ensure compliance with national regulations and also to be consistent with the requirements of the WB policy on environmental assessment. However, as stated earlier, this is a WB category B project and environmental and social impacts are expected to be moderate, site specific, and easily manageable through the implementation of mitigation measures to an acceptable level.

Environmental Registration of the Project

The RC will be responsible for the registration of the projects with the EPA- SL using the prescribed form from the Agency. For the component 2 activities, the registration will be carried out by the safeguard person who will be appointed by the MAFFS. All documents will be submitted through the PCU to the EPA- SL to ensure transparency and accuracy. The

mitigation measures suggested in this ESMF as well as the checklist used in the screening exercise should assist the RC and the MAFFS safeguard person to complete this Form accurately.

The EPA- SL will screen the registration forms and determine the next course of action which may include any of the following:

- Objection to the project
- No objection to the project (equivalent to World Bank Category C Project)
- Preliminary Environmental Assessment (PEA) will be required (equivalent to World Bank Category B Project)
- Environmental and Social Impact Assessment (ESIA) required (equivalent to World Bank Category B or A Project).

For projects receiving the 'no objection' from the EPA (WB Category C project) and therefore have only minor environmental and social risks, the PCU may move to implementation in accordance with pre-approved standards or codes of practices or the pre-approved guidelines for environmental and social management.

Conduct of environmental and social assessment studies

For Projects for which the decision is to conduct environmental impact assessment studies, standalone reports will be prepared. The EPA- SL statutorily requires an EIA for projects in sensitive areas as listed in the box below.

| |
|---|
| Environment Protection Agency Act, 2008 SECOND SCHEDULE (Section 25) |
| Factors For Determining Whether A Project Requires An Environmental Impact Assessment |
| (a) the environmental impact on the community; (b) the location of the project; (c) whether the project transforms the locality; (d) whether the project has or is likely to have substantial impact on the ecosystem of the locality; (e) whether the project results in the diminution of the aesthetic, recreational, scientific, historical, cultural or other environmental quality of the locality; (f) whether the project will endanger any species of flora or fauna or the habitat of the flora or fauna; (g) the scale of the project; (h) the extent of the degradation of the quality of the environment (i) whether the project will result in an increase in demand for natural resources in the locality; (j) the cumulative impact of the project together with other activities or projects, on the environment. |

The RC/ MAFFS Safeguard Officer in consultation with the PCU, will prepare the Terms of Reference for the ESIA, and follow procurement rules for the recruitment of consultants for

the ESIA. The ToR may be prepared using issues identified during the screening exercise and also the registration of the project with the EPA- SL. Also, the impact mitigation measures provided in this ESMF may provide some basis for the design of the ToR. The outline of the report will include the following:

Outline of the ESIA

- Description of the study area
- Description of the subproject
- Discussion and evaluation of alternatives
- Environment description
- Legal and regulatory
- Identifying potential impacts of proposed sub-projects
- Process of public consultations
- Development of mitigation measures and a monitoring plan, including estimates of costs and responsibility for implementation of surveillance and monitoring

Review and approval of the ESIA for the project; Publication / Dissemination of ESIA

The PCU will review the draft reports from the RC/ MAFFS safeguard persons (as prepared by the consultant) and will submit same to the EPA-SL. The Agency will review the report and also share with relevant stakeholders for their comments. It may require a public hearing if the Agency considers that the activity could have extensive and far- reaching effects on the environment or has deep social implications.

Where the draft ESIA is found acceptable, the RC/ MAFFS will be notified through the PCU to finalize the reports to obtain the license. The PCU shall pay processing and permitting fees prior to collection of the license. The fees are determined based on regulations and formula presented by the EPA- SL.

8.2 ESMF Disclosure

The World Bank policies require that environmental reports for projects are made available to project affected groups, local NGOs, and the public at large. Public disclosure of EIA documents or environmental reports is also a requirement of the Sierra Leone EIA procedures. However, there is no limitation as to the extent and scope of disclosure. WAATP in collaboration with EPA- SL will make available copies of the ESMF in selected public places as required by law for information and comments. Public notice in the media should be served for that purpose.

The notification should be done through a newspaper or radio announcement or both. The notification should provide:

- a brief description of the Project;
- a list of venues where the ESMF report is on display and available for viewing;
- duration of the display period; and
- contact information for comments.

The EPA- SL will select display venues upon consultation with WAATP but would be expected that the venues or places will include the project locations or local communities.

8.3 Grievance Redress

Grievance mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders.

The World Bank policy requires that concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution. Mechanisms will be appropriate to the scale of impacts and risks presented by a project.

Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project.

As with the WAAPP, this Project may have only limited potential adverse impacts on people and the environment, However, in general, identifying grievances and ensuring timely resolution is still very necessary. As such the ESMF has developed a grievance management process to serve as a guide during project implementation.

The grievance management guide is provided in the table below.

Table 6: Grievance redress

| Steps | Process | Description | Peremptory duration for feedback to complainant | Other information |
|-------|-------------------------------|---|---|---|
| 1 | Identification of grievance | Face to face; phone; letter, e-mail; recorded during public/community interaction; others | 1 Day | Email address; hotline number |
| 2 | Grievance assessed and logged | Significance assessed and grievance recorded or logged (i.e. in a log book) | 4-7 Days | Significance criteria Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions |

| | | | | |
|---|--|--|------------------------|---|
| 3 | Grievance is acknowledged | Acknowledgement of grievance through appropriate medium | 7-14 Days | |
| 4 | Development of response | -Grievance assigned to appropriate party for resolution -Response development with input from management/ relevant stakeholders | 4-7 Days 10-14 Days | |
| 5 | Response signed off | Redress action approved at appropriate levels | 4-7 Days | Senior management staff of SALCAB should sign off |
| 6 | Implementation and communication of response | Redress action implemented and update of progress on resolution communicated to complainant | 10-14 Days | |
| 7 | Complaints Response | Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary | 4-7 Days | |
| 8 | Close grievance | Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law | 4-7 Days | Final sign off on by MAFFS |

8.4 Monitoring and Evaluation

Monitoring plans will be developed to track safeguard progress at both the ESMF and sub-project activity level. The proposed plans are presented in the table below. The table confirms the verifiable indicators as well as responsibilities for the various monitoring actions.

The monitoring issues at the ESMF level include confirmation of the dissemination of both ESMF and RPF documents as well as capacity building and training activities. At the sub-project activity level, this will encompass instituting monitoring actions to, for example, confirm the Screening of projects, Preparation of the ESIA reports, Acquisition of environmental Permits etc.

Table 7: ESMF monitoring indicators and responsibilities

| No | Monitoring level | Monitoring Issue | Verifiable indicators | Responsibility |
|----|------------------|--|--------------------------------------|---|
| 1. | ESMF level | Adequate dissemination of ESMF to stakeholders | Record of consultations and meetings | PCU, RC/ MAFFS safeguard persons |
| | | | Workshop reports | Consultants |
| | | Capacity building and training programs | Training and workshop reports | PCU, RC/ MAFFS safeguard persons Consultants |

| | | | | |
|----|-----------------------------|---|--|---------------------------------------|
| 2. | Sub- project activity level | Screening of sub project | Checklist completed | PCU, RC/ MAFFS safeguard persons |
| | | Completion of EPA- SL registration forms | Completed Form submitted to the EPA | PCU, RC/ MAFFS safeguard persons |
| | | Adequate mitigation measures provided to manage adverse impacts | ESIA and ESMPs prepared | PCU, RC/ MAFFS safeguard persons, EPA |
| | | Project satisfies statutory provisions | EPA Permit for project | PCU, RC/ MAFFS safeguard persons, EPA |
| | | Post project monitoring and evaluation | Monitoring reports, annual environmental reports | MAFFS, WAATP/PCU, WB |

8.5 Institutional Strengthening and Capacity Building

The current capacity available to implement the ESMF at the research centres and the MAFFS and other collaborating institutions is limited. There is the need to equip identified persons with the understanding, skills and access to information, knowledge and training to enable them to perform effectively as safeguard persons.

The capacity building will include training workshops and production of guidance reports and tools. The following training programmes specific to the requirements of the institutions and project persons will be carried out, listed in Table 9. A further capacity needs assessment will be prepared to identify other necessary training required for the selected safeguards focal persons from the relevant institutions.

Table 8: Training modules and proposed participants

| No | Training content | Participants |
|----|---|--|
| 1. | <ul style="list-style-type: none"> World Bank Safeguard policies of OP 4.12 and OP 4.01; EPA- SL Environmental Assessment Regulations ESMF/ RPF | PCU/ WAATP PCU safeguard specialist, MAFFS- Extension Services, Crop Services etc Implementing agencies- SLARI, RARC, NARC, TERC, NaFFS etc |
| 2. | <ul style="list-style-type: none"> Screening Checklist, ToR for PCU safeguard person ToR for RC/ MAFFS Safeguard focal persons | RC/ MAFFS safeguard persons, Implementing agencies PCU safeguard specialist |
| 3. | <ul style="list-style-type: none"> Preparation of Terms of Reference for ESIAAs and ARAPs/ RAPs | RC/ MAFFS safeguard persons, PCU safeguard specialist |
| 4. | <ul style="list-style-type: none"> Environmental and Social Management Plans Grievance redress registration and resolution Safeguard reporting formats | RC/ MAFFS safeguard persons, Contractors, Supervising engineers, Implementing agencies Community persons |

The participants at the training programmes will therefore range from the relevant staff of the MAFFS to selected community members from site- specific project locations. For many of the community members who will be invited to attend, the purpose will be towards creating awareness of safeguard issues as well as for grievance reporting and resolution procedures.

As much as possible, these training and awareness creation workshops will be decentralized to project locations and the content of the discussions will then focus on site- specific issues. As a result, large numbers of participants at specific meetings will be avoided.

Training manuals and safeguards reporting formats will be prepared to assist safeguard focal points to carry out their functions. Consultants may be hired to produce manuals and checklists as and when required by the project.

8.6 Roles and responsibilities

The respective roles and responsibilities of assigned safeguards specialists are summarized below:

PCU Safeguards specialist

The PCU safeguard specialist will be responsible for:

- Coordination of environmental and social safeguards across all projects
- Provide leadership in safeguard implementation across the project components and entire project sites
- Providing guidance and project level information and tools on safeguards for all stakeholders
- Assist to manage the environmental and social safeguard experts (consultants)
- Responsible for coordinating all safeguard activities with the EPA- SL, WB and implementing agencies
- Oversee all environmental and social safeguard training and capacity building activities
- Any other activities/ responsibilities that may emerge

Safeguard consultants

Consultants who are conversant with the WB safeguard policies and their instruments and application will be hired periodically as and when required to prepare specific safeguard documents to complement the work of the safeguards specialists. The consultants' level of understanding will be adequate to facilitate training and other capacity related activities on safeguards.

Research Coordinator/ MAFFS safeguards focal persons

The Safeguard Focal Points will be given training to be competent in safeguards implementation, and will

- Supervise the site- specific project activities to ensure that all environmental and social safeguards issues are incorporated into Bid and specifications documents for all sub project types.
- Ensure that safeguards issues are included as part of the training at the project level and contractors invited to participate.
- Draft safeguards reports based on collated documents and reports from project activities as part of usual reporting on the project.
- Be the first point of contact for the project in case of any challenging issues on project-related safeguards - land, environmental, safety and health and draw the PCU safeguard specialists' attention in case of lack of resolution
- Collaborate with relevant authorities including the community (traditional authority) and other community members and facilitate the implementation of subprojects and implementation of any other safeguards related activity.
- Perform any other related activities that may be assigned by the PCU safeguard specialists to whom s/he will report.

8.7 Budgetary provisions

The awareness creation, capacity improvement and training workshops as well as some logistic support expenses for key stakeholders involved in the implementation of proposed interventions is estimated at **US\$460,000** over the 5- year project life as explained in the **Table 7** below:

Table 9: Budget provisions

| # | Item | Unit | Unit Cost US\$ | No | Total Cost US\$ | Source of financing |
|---|------------------------------------|--|----------------|---------|-----------------|---------------------|
| 1 | Preparation of specific ESIA | No ESIA reports/ research site (for 3 sites) | 45,000 | 3 | 135,000 | Project funds |
| 2 | Capacity Building | No of training workshops/ year for 5 years | 15,000 | 2 | 150,000 | Project funds |
| 3 | Implementation of specific ESMP | Purchase of equipment eg. PPEs/ year | 10,000 | 5 years | 50,000 | Project funds |
| | | Cost of meetings/ year | 12,000 | 5 years | 60,000 | Project funds |
| 4 | Mid-term audit of ES performance | No | 30,000 | 1 | 30,000 | Project funds |
| 5 | Completion audit of ES performance | No | 35,000 | 1 | 35,000 | Project funds |
| | Total | | | | 460,000 | |

9 CONCLUSION

This Environmental and Social Management Framework (ESMF) sets out the principles, regulations, guidelines and procedures to facilitate the assess of the environmental and social risks and negative impacts under the WAATP. It proposes preventive and mitigation measures to reduce the risk and negative impacts of the project activities and enhance its sustainability. As the specific project locations are not known at this time of preparation, therefore ESMF provides an Environmental and Social Screening Checklist for subprojects to determine the appropriate level of environmental assessment required in line with the policies of the EPA-SL and the World Bank Safeguards.

The environmental and social impacts of WAATP, for the most part, are expected to be moderate, site specific, and easily manageable through the implementation of the suggested mitigation measures. Components 1 and 2 of the project will involve provision of infrastructure and other services which may be accompanied by minor to moderate environmental and social concerns and therefore subject to screening.

Successful implementation of this ESMF will depend largely on the collective involvement and participation of all Safeguards Specialists (listed in Section 8.6), institutions and local communities. It is strongly recommended that the highlighted safeguards training for key stakeholders and implementing institutions is conducted periodically throughout project lifespan.

ANNEXES

- Annex 1: Environmental and Social Screening Checklist
- Annex 2: EPA- SL Environmental Impact Assessment (EIA) licensing procedure
- Annex 3: Summary of discussions and concerns from Stakeholder consultations

ANNEX 1 - ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

| A PROJECT NAME: | | | | |
|--|---|-----|----|---------|
| 1 | Project Location (Province, District, Town) | | | |
| 2 | Safeguard officer filling Form | | | |
| 3 | Date of Screening | | | |
| B DESCRIPTION OF ACTIVITY | | | | |
| 1 | Type of Activity (including objectives and outputs) | | | |
| 2 | Land area to be taken by project activity, in ha | | | |
| 3 | Any existing property to be affected, and by how much (total, partial demolition etc.) | | | |
| 4 | Any plans for construction, movement of earth, changes in land cover | | | |
| 5 | Date of commencement and expected completion date and estimated cost | | | |
| C PRELIMINARY ENVIRONMENTAL INFORMATION | | | | |
| | | YES | NO | COMMENT |
| 1 | Is there adjacent/nearby critical natural habitat? | | | |
| 2 | Are there activities at the project site? | | | |
| 3 | What is the current land use | | | |
| 4 | Will the proposed activities have any impact on any ecosystem services, biodiversity issues or natural habitats? | | | |
| 5 | Will there be restrictions or loss of access to public facilities or resources? | | | |
| 6 | Will there be restrictions or loss of access to public facilities or resources? | | | |
| 7 | Will there be water resource impacts? | | | |
| 8 | Will there be vegetation and soil impacts? | | | |
| 9 | Will the air quality or noise impacts? | | | |
| 0 | Are there any new or changing river basin management planning or activities? | | | |
| 1 | Any cultural heritage/sacred sites in project area? | | | |
| D PRELIMINARY SOCIAL INFORMATION | | | | |
| | | YES | NO | COMMENT |
| 1 | Has there been litigation or complaints of any environmental nature directed against the proponent or subproject? | | | |
| 2 | Will the subproject require the acquisition of land? | | | |
| 3 | What is the status of the land holding required by the project (customary, lease, community lands, etc.)? | | | |

| | | | | |
|---|---|--|--------------------|---------|
| 4 | Is there evidence of land tenure status of landowners and/or occupants (affidavit, other documentation)? | | | |
| 5 | Are there outstanding land disputes? | | | |
| 6 | Has there been proper consultation with stakeholders? | | | |
| 7 | Is there a grievance process identified for PAPs and is this easily accessible to these groups/individuals? | | | |
| 8 | Will there be any changes to livelihoods? | | | |
| 9 | What are the main issues associated with community benefits? | | | |
| 0 | Will any restoration or compensation be required with Affected persons? | | | |
| E IMPACT IDENTIFICATION AND CLASSIFICATION | | | | |
| | | | Choose L, M or H | COMMENT |
| 1 | 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) | | |
| 2 | 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) | | |
| 3 | 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) | | |
| 4 | 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 losing 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 | | | |
| | Impact Identified | | | |
| | Mitigation options | | | |
| H | DETERMINATION OF ENVIRONMENTAL CATEGORY BASED ON SCREENING | | | |
| | | | Tick appropriately | COMMENT |
| | [A] | REQUIRES AN ESIA | | |
| | [B] | REQUIRES PREPARATION OF ADDITIONAL E&S INFORMATION TO SUPPORT ESMF | | |
| | [C] | DOES NOT REQUIRE FURTHER ENVIRONMENTAL OR SOCIAL DUE DILIGENCE – REFER TO ESMF | | |
| | PREPARED BY: | | | |
| | DATE: | | | |

ANNEX 2 - EPA- SL ENVIRONMENTAL IMPACT ASSESSMENT (EIA) LICENSING PROCEDURE



CHECKLIST FOR THE ISSUANCE OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) LICENCE FOR PROJECTS UNDER THE FIRST SCHEDULE OF THE ENVIRONMENT PROTECTION AGENCY ACT, 2010

The developer/proponent is the applicant who is required to undertake the following stages.

Stage One – Registration

1. The applicant is required to register the project proposal/undertaking through an application process. The letter is addressed to the Executive Chairperson and copied to the Director. This is to expedite the processing of the EIA application.
2. The Agency shall issue application and screening forms to the applicant after a payment of two hundred thousand Leones at an account designated for EIA's application fees.
3. The applicant is required to return duly completed forms together with the project proposal of the undertaking to the Environment Protection Agency Sierra Leone (EPA-SL) within fourteen days.
4. The Agency shall acknowledge receipt of the filled application and screening forms within seven days.

Stage Two – Screening

1. Project proposal, application and screening forms are screened to determine whether or not the development proposal should be subject to an EIA and, if so, the level of detail required.
2. After the screening, the report shall be communicated to the applicant within twenty one days from the date of receipt of the application and screening forms.

Stage Three – Scoping

1. After the project has been classified and a determination is made that the activity requires an environmental impact assessment license the proponent will be required to submit a scoping report on the project.
2. The scoping report shall set out the scope or extent of the environmental impact assessment to be carried out by the applicant and shall include a draft terms of reference which shall indicate the essential issues to be addressed in the environmental impact statement on the proposed/current undertaking.
3. The Agency shall upon receipt of a scoping report examine it and inform the applicant within twenty one days of the receipt of the report whether it is acceptable or not acceptable.
4. Staff of the Agency will visit the location of the project before the scoping report is accepted or not accepted by the Agency.

Stage Four – Environmental, Social and Health Impact Studies and Preparation of the Report

1. Upon approval of the scoping report and terms of reference the applicant undertakes the impact studies.
2. Before undertaking the environmental impact assessment, the applicant shall have the responsibility to:
 - Give notice of the proposal undertaking to the relevant ministries, government departments and organizations and the relevant local council;
 - Advertise in at least two national newspapers and a newspaper, of any circulating in the locality where the proposed undertaking is to be situated; and
 - Make available for inspection by the general public in the locality of the proposed undertaking, copies of the scoping report.
3. Upon completion of the impact studies, the applicant should submit eighteen hard and soft copies of the ESHIA report to the Agency for circulation to Board members, professional bodies and the public for comments.

Stage Five – Public Hearing and Review of the ESHIA Report

1. The applicant shall hold two or more public hearing meetings in respect of the environmental impact statement (environmental impact assessment document) for public participation in the decision-making process.
2. The applicant should choose the date(s) and venue(s) of the public hearings.

3. The applicant should also choose to pay for the publication of dates and venues of the public disclosure in at least two national newspapers. The Agency has no objection to this.
4. The report will be gazetted and circulated to professional organizations for comments.
5. Depending on the location of the project the applicant will be required to make announcements over the media in the local languages.
6. Staff of the Agency will also visit the site or operational areas of the project to ascertain the components and content of the ESHIA Report in the review stage.
7. A draft environmental impact statement shall be reviewed by the Agency after receipt of recommendations following a public hearing.
8. Where after review, the draft environmental impact statement is found unacceptable by the Agency, the applicant shall be notified of this in writing and shall be required
 - To submit a revised environmental impact statement within twenty one days of the date of reference failing which the application lapses, or
 - To conduct such further studies as the Agency considers necessary.

Stage Six – Decision Making

1. This is the stage where the ESHIA report is approved or rejected.
2. The Board of the EPA is vested with the power to approve or reject an application for an EIA.
3. Where an environmental impact assessment is acceptable to the Agency, an EIA license is granted which shall be valid for twelve months or a term determined by the Board effective from the date of the issue of the License. The EIA License will be subject to terms and conditions, and renewal.
4. Failure to commence operation of the undertaking within the twelve months as provided in the EPA Act, 2008 as amended in 2010 shall render the EIA License invalid after the period.
5. When an application has been rejected by the EPA Board, the applicant has a right to seek legal redress.

Stage Seven – Compliance and Enforcement.

This is the implementation stage, environmental monitoring and auditing of the project activities is undertaken to ensure that the terms and conditions of the Environment Impact Assessment license issued are met in accordance with the Environment Protection Agency Act, 2008 as amended in 2010.

Note: EPA-SL should be involved through all these stages for guidance and compliance with the provisions of the EPA Act, 2008.

ANNEX 3 - SUMMARY OF DISCUSSIONS AND CONCERNS FROM STAKEHOLDER CONSULTATIONS

LIST OF STAKEHOLDERS CONSULTED

BOMBALI PROVINCE, MAKENI DISTRICT

22ND February, 2018

| NO. | NAME | DESIGNATION | INSTITUTION | PHONE NO. | Email |
|---|----------------------|--|--------------------------|---------------------------|-------------------------------------|
| A. MAFFS, District Agricultural Office | | | | | |
| 1. | Ibrahim M. Sesity | FEIN/BES Acting | MAFFS | 080-99-2211 025-380321 | - |
| 2. | Samuel D. Kamara | DTO | MAFFS | 077-564938 | - |
| 4 | Kadiatu Leigh | Secretary | MAFFS | 076-564011 | kadiatuleigh@gmail.com |
| 5 | Alhassan Bangurn | FEW | MAFFS | 076-767859 | - |
| 7 | Adamsay M. Sesay | FEW | MAFFS | 077-283600 | - |
| 8 | Alice K. Sesity | FEW | MAFFS | 099-252090 | - |
| 9 | Alhaji A. Kamara | FEW | MAFFS | 088-306333 | - |
| 14 | Allie A. Fofamah | MGE | MAFFS | 078-277888 | allieafofanuah@gmail.com |
| 15 | Alhaji Salien Kamara | GAFSP/WIPE | MAFFS | 077-481758 | alhajisalien@gmail.com |
| 16 | Mariafu S. Komu | Volunteer | MAFFS | 077-774405 | - |
| 17 | Saliaman Sankoh | MGE | MAFFS | 078-287691 | - |
| 29 | Adu J. Backem | DSO | MAFFS | 078-437505 | adujohnbockane@gmail.com |
| 30 | Fatima Puray | FEW | MAFFS | 078-112294 | - |
| 31 | Emma Fotana | Volunteer / Intern | MAFFS | 078-232521 | - |
| 11 | Elizabeth A. Kamara | FEW & Coordinator Secretary-General | MAFFS TWF BOOWOFOA | 088-306333 | tawalenwomen fugenco-associates.com |
| 12 | Alpha M. Kangbo | DCO | MAFFS | 077-580230 | alpha.....com |
| 20 | Osman Kargbo | FARM Coordinator | MAFFS | 088-126149 | agnic.inhavarikol@gmail.com |
| 43 | Mar J. T. Brgura | MAFFS | MAFFS | 077-476623 | - |
| 34 | Adikalie M. Sankoh | FEW | MAFFS | 077-383369 | - |
| 46 | Mohammed A. Bah | DAO | MAFFS | 078-354828 | |
| 39 | Mabinty Sessey | Staff | MAFFS | 076-720644 | - |
| B. World Food Programme, UN office, Makeni | | | | | |
| 1. | Linus Sarkor | WFP HOSO | WFP | 076-158684 | linussarkor@wfp.org |
| C. International NGO | | | | | |

| NO. | NAME | DESIGNATION | INSTITUTION | PHONE NO. | Email |
|-----------|------------------------|---------------------------|--|------------|--|
| 21 | Hater Jake | PM Agric | INTER AIDE | - | - |
| D. | Local NGOs | | | | |
| 42 | Abraham M. Sessey | Wipe our Tears | Wipe our Tears | 077-527340 | saintib35@gmail.com |
| 25 | Alimany Kamara | Coordinator | CVC - Wotch | 030-637318 | cncwotch.com |
| 2. | | | | | |
| E. | FBO (Farmers) | | | | |
| 2 | Salley Thullah | Farmer | Sister Limited | 030-127515 | - |
| 6 | Kadiatu Sesay | Farmer | | 077-504239 | - |
| 10 | Mohammed A. Kamara | Farm Manager | Tawalan Women Farmers | - | - |
| 13 | Mohammed Lansana | Data Operator | NaCSA | 078-403179 | lansmed4338@yahoo.com |
| 18 | Muscoi | AVE | - | 076-198868 | - |
| 19 | Bai Kanu | Reporter | Radio Mankneh | 088-184551 | - |
| 22 | Jenneh M. Swaray | MLM | GAFSP | 079-975119 | - |
| 23 | Zainab Bangura | A.B.C Existing | GAFSP | 099-303077 | - |
| 24 | Saio F. Kamara | Agronomist | GAFSP | - | - |
| | | | | | |
| 26 | Sannh Kuro | Coordinator STADIA MAKENI | S TADA | 080-615107 | s@gmail.com |
| 28 | Lansana Sessey | R & E | SLARI | 088-875858 | lansanasessey99@gmail.com |
| 32 | Mariama Bah | Intern | SCP / GASFP | 030-029746 | - |
| 33 | Zanials Y. Sessey | Coordinator | Local Insurance Agriculture Deof Cooperative (LIWADCO) | 073-047202 | - |
| 35 | Norrsinous M.S. Kargbo | Coordinator | CARDA-SL | 080-908977 | cardanominous@gmail.com |
| 36 | Pst. Alfred Isangbo | Farmer | Sylfred Ent. | 076-404796 | alfredsargbo90gmail.com |
| 37 | Pawusu Koroma | Young Graduate | SCP/GAFSP | 076-528590 | - |
| 38 | Ibrahim Bah | Young Graduate | SCP/GAFSP | 077-673537 | - |
| 40 | Thomas L. Boga | | Amalgamate | 078-425564 | - |
| 41 | Isha Bangura | Farmer Coordinator | MWFA | 078-644244 | Ishabongura877@yahoo.com |
| 44 | Osman Karglo | Coordinator | Sammarco Agric Pro. | 088-126499 | |
| 45 | Fatmatu Sankah | Farmers | Wuomonah Farmers | 077-837635 | |

NATIONAL FEDERATION OF FARMERS OF SIERRA LEONE (NaFFSL)

Executives and Technical Team

20th February 2018

| NO. | NAME | DESIGNATION | CONTACT NUMBER | Email |
|-----|-------------------|----------------------|----------------|--|
| 1 | Jesse O. John | President | 076-605894 | maffs@yahoo.com |
| 2 | John O. Fullah | National Secretary | 076-650011 | naffol2009@yahoo.com |
| 3 | Ibrahim S. Bah | Driver | 078-411227 | ibrahimsbah@yahoo.com |
| 4 | Maxwell Samoh | M & E Officer | 076-695869 | noffsl@yahoo.com |
| 5 | Mariama M. Keitta | Women Leader | 076-755309 | noffsl@yahoo.com |
| 6 | Aiah R. Semeice | I.T Officer | 077-588568 | jarsaraymood@yahoo.com |
| 7 | Brima Babo | National Coordinator | 076-589678 | barimababonhs@gmail.com |
| 8 | Nana Otu-Ansah | Consultant | +233 277867831 | nanaotuansah@gmail.com |
| 9 | Seth Larmie | Consultant | +233 244378265 | seth.larmie@yahoo.co.uk |

FREETOWN WESTERN AREA RURAL PROVINCE

KOYA RURAL DISTRICT, Kwama Community

22nd February 2018

| NO. | NAME | POSITION | TELEPHONE NO. |
|----------------------|-------------------|-------------------|---------------|
| Womens' Group | | | |
| 1. | Kadie Sessay | Farmer | - |
| 2. | Emma Kanu | Farmer | - |
| 3. | Fatamat Kargbo | Trader/ Farmer | - |
| 4. | Isatu Kamara | Trader/ Farmer | - |
| 5. | Hawa Sarkoh | Farmer | - |
| 6. | Kadiatu Bangura | Farmer | - |
| 7. | Fatmate Sessey | Farmer | - |
| 8. | Jariatu Turay | Farmer | 077-924338 |
| Youth Group | | | |
| 1. | Ibrahim Sorie Bah | Driver/ Farmer | 076-984507 |
| 2. | James Thullah | Manager/ Farmer | 077-808661 |
| 3. | James A. Tusery | Organiser/ Farmer | 088-309791 |
| 4. | Osman M. Kamara | Student/ Farmer | - |
| 5. | Yanka Kamara | Farmer | - |
| 6. | Basiru Kamara | Farmer | - |
| 7. | Nanah Kargbo | Farmer | - |

| | | | |
|-----|-------------------------|----------------------------|------------|
| 8. | Simpson Kai | Farmer | - |
| 9. | Clement A. Kanu | Secretary/ Farmer | 077-624861 |
| 10. | Bai Kamara | Farmer | 030-628686 |
| | Community Elders | | |
| 1. | Pa Oasman Kamara | Head of Village/ Farmer | 099-675748 |
| 2. | Baba Baikunu | Farmer | 088-118981 |

| Summary of discussions/ suggestions/ concerns from stakeholder consultations | |
|---|--|
| 20- 22 February 2018 | |
| 1.0 | <p>MAFFS- Extension Services Persons consulted: Dennis Paul, Director</p> <ul style="list-style-type: none"> ✓ Key interest area is with respect to transfer of technology to farmers ✓ Presence in 14 districts ✓ WAAPP provided- motorbikes to extension officer, seed rice for farmers, logistics for field work (fuel), capacity building, training. No training provided in environmental safeguards ✓ WAAPP research through SLARI has been useful ✓ Environmental issues include mosquito prevalence during swamp development, climate change ✓ Differences in cultural and foreign approaches to example, seed planting. Culturally, 2-3 seeds per stand as against one seedling per stand by Japanese technology ✓ Little physical protection for farmers hence no protective equipment- clothes, boots etc. Most are sick by end of planting season. No protection during application of agrochemicals ✓ Youth involved in various FBOs and may be greater in number. With right incentive can go far. Mechanization will be useful ✓ Importance of women acknowledged by the establishment of Women in Agriculture Desk ✓ WAATP should take the process further and should be more mindful of environmental and social safeguards |
| 2.0 | <p>MAFFS- Crops Services Persons consulted: Henry Kargbo, Director and Hassan Kargbo</p> <ul style="list-style-type: none"> ✓ One of the six divisions under the Ministry and has 5 units comprising: Food Crops, Horticulture; Tree Crops; Crops Protection and Fertiliser ✓ Environmental issues have arisen from work done by Fertiliser Unit and Crop Protection in the areas of application of agro- chemicals and avoidance of pollution of water bodies, land preparation ✓ Under WAAPP cassava and rice seeds have been provided to farming communities and used in a sustainable manner ✓ Worked with SLARI to certify seeds and been involved directly with multiplication and provision of planting material ✓ WAAPP provided vehicles, and maintenance of these vehicles during the life of the project. It further provided per diem for field work and fuel for vehicles. Staff benefitted from overseas training in relevant subjects. |

| | |
|------------|---|
| | <ul style="list-style-type: none"> ✓ Expecting WAATP to continue with good work and assist with seeds certification and multiplication as well as capacity building at all levels for relevant areas of specialization. Should develop capacity for environmental and social safeguards- proper application of agrochemical to avoid water pollution. Training most required at the district level ✓ There have been challenges with the application of foundation seeds from the sub- region which were eventually used as grain especially after the Ebola crisis. ✓ Reference to Plant Health Clinics which should be supported to bring farmers together and provide training in agro- chemicals and pests management. |
| 3.0 | <p>MAFFS- Gender in Agriculture and Nutrition- Mariama Turay, Head Sierra Leone Women Farmers Forum- Oya Josephine Kargbo, President/ Farmer</p> |
| | <ul style="list-style-type: none"> ✓ WAAPP support was phenomenal during the Ebola period ✓ Provided seeds to women, training on leadership, work was extensive throughout the country ✓ The Forum brings different women groups together and provides advocacy. Has improved capacity of women and youth farmers. Encouraging these groups to see farming as a business. Need to improve productivity and has paid attention to livestock and ruminants as well as vegetables and maize. Onions has been particularly important. ✓ Forum established in 2014 as an NGO and raises operational funds from members registration fees/ dues, MAFFS and from projects ✓ WAAPP was supportive with funds for fieldwork as well as provision of seeds and the so called Ebola rice ✓ Each group has about 25 to 30 members and with almost 800 FBOs. There are few cooperatives. ✓ Operations are nationwide comprising all the 14 districts. Have benefitted from international training programmes ✓ Expectation of WAATP is more relevant training programmes, provision of vehicles/ motorbikes to ease mobility and indeed these have been expressed in meetings towards the preparation of the WAATP. ✓ The Gender Division includes Youth, Gender, Nutrition and Farmer Health Units ✓ Challenges facing women farmers include equipment, processing, finance, and availability of labour. ✓ Social issues are critical in polygamous homes where men allow the women to compete for their attention hence forcing them to work ever so hard ✓ Training programmes have involved men and this should be intensified |
| 4.0 | <p>MAFFS- NGO Desk Persons consulted: Raymonda Johnson, Head</p> |
| | <ul style="list-style-type: none"> ✓ Link between government and NGOs ✓ Creates the enabling environment for NGOs ✓ NGOs to buy into national policies and to share the vision of the ministry ✓ Ensures NGOs are focused on their core mandates and using resources properly together with support form the Ministry of Finance ✓ Registration process involves payment of fees to Ministry of Finance, SLANGO and respective districts ✓ They are expected to produce quarterly reports and meetings are scheduled last Friday of the month. NGOs also have regular meetings at the district level where they operate ✓ Currently, about 30 NGOs registered with 20 quite active. ✓ Their services include training, providing seeds, tools to farmers, preparing learning materials, supporting farmers with loans/ grants, microfinance ativities, village savings programmes, value addition programmes etc. |
| 5.0 | <p>National Federation of Farmers in Sierra Leone (NAFFSL)</p> |

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| | <ul style="list-style-type: none"> ✓ Held discussions with both the executive and technical teams together. The executive is elected (supervised by INEC) while the technical team is appointed. Formative stages in 2008 and finally established in 2010 ✓ Has previously had three (3) meetings on WAATP. ✓ This is an umbrella organization for farmers in SL and provides advocacy and lobbying ✓ Undertakes monitoring on behalf of farmers and gives education ✓ Receives funding from government (only 10- 15%), membership through the FOs, specific projects including WAAPP, FAO. Funding levels not adequate and therefore a challenge ✓ Strength lies in the FOs and currently registered about 10 FOs in the 16 districts ✓ Gender issues severe and operations not sensitive to women. For example, implements not female friendly. Little focus on training of women to use equipment ✓ Environmental challenges regarding soil suitability vis-à-vis fertilizer types utilized. There are examples of some districts where fertilisers have been inappropriately used hence leading to soil fertility challenges. Mostly, abuse in the use of fertilisers ✓ More training required especially for women and youth in climate smart agriculture. Agriculture to be seen as business and training to include development of business plans ✓ Agriculture has not been attractive because its seen less as a commercial venture. Need to add value (processing) and ways developed for farmers to benefit commensurately ✓ Will require and have been pushing for opportunity to interact with EPA to have training. Such special forum not been successful yet. ✓ Training requirements for women and youth especially will include simpler presentations on business plans, processing and packaging ✓ Appreciate that WAAPP focused on strengthening institutions but WAATP must be more farmer focused. In that respect, WAAPP appears to have been successful as new technologies have been developed in respect of seeds etc ✓ The concept of Productive Learning Alliances to be promoted |
| <p>6.0</p> | <p>Sierra Leone Chamber for Agricultural Development (SLECAD)</p> |
| | <ul style="list-style-type: none"> ✓ This is a private sector institution established with the support of government and donor community. Seven staff membership as volunteers ✓ Focus on the private sector in agriculture and along the entire value chain ✓ Objective is to increase productivity and for export as well as job creation ✓ About 65 to 75% of economy anchored on agriculture and key players are the poor rural farmers ✓ Membership of the chamber includes processors, producers, fishermen union, traders union, transporters, researchers etc. ✓ Services include training and capacity building (business plans etc); research and training (partnership with GIZ, EU, USAID etc); support to advocacy (national policies on agriculture (recently on seed law, fertilizer law, access to finance policy (community banks) etc; market facilitation and linkages (standard branding, food quality, storage, handling etc); Value chain facilitation and linkages; Feasibility studies ✓ Was involved with WAAPP and contributed accordingly to its success ✓ Concerns about the appropriateness of technology and also quality of seeds. Instances of expired fertilisers ✓ SLECAD has led a forum for innovation regarding agricultural business development with assistance from FAO, ECOWAS etc ✓ The US\$100m to export rice to feed police/ army could be invested in the sector to provide the commodity locally ✓ Grappling with issues relating to technology and finance. Insurance companies being courted |

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| | <ul style="list-style-type: none"> ✓ So far, delighted with WAATP development because of the target at the grassroots including women and youth ✓ Private sector to drive agricultural business ✓ Expecting that SLECAD will be much stronger at the end of WAATP to be able to drive the sector ✓ Concerned about health and safety of farmers. Little or no protective wears ✓ Farmers are learning form each other, both good and bad ideas. ✓ Need for a good soil suitability map to assist in confirming best technologies under different soil conditions ✓ Women benefit more from farming in vegetables and groundnut and men may become uncomfortable when women spend more time on their farming and trading activities. Source of domestic friction ✓ Women have proven to be more reliable and focused. Earnings are used for the household including medical, education of children. Usually, women in polygamous are forced to work harder because of the competition for attention by the man. They do not have easy access or right to land |
| <p>7.0</p> | <p>Sierra Leone Agriculture Research Institute (SLARI) Person consulted: Daniel Fornah</p> |
| | <ul style="list-style-type: none"> ✓ SLARI is the number one beneficiary of the WAAPP ✓ NARC and RARC key beneficiaries out of the 6 centres ✓ NARC benefits include provision of water supply though borehole quality was poor. Internet connectivity still a challenge ✓ RARC had socio- cultural issues in relation to local community access to cotton tree which is sacred to them. Jetty was constructed with no impact on mangroves. Biological lab was constructed but awaiting furnishing ✓ Land ownership issues being attended to by government. Some encroachment on RARC land and will require fencing. NARC being hosted by University of Njala and cohabiting well. Total cost for land compensation to be paid by government is LE500million. Le100M was released to land owners and rest outstanding ✓ TELO is third centre being added under WAATP for livestock and ruminants and resting on 1500acres of leased land. Key challenges there include management of droppings . feed and litter are not separated. Clearing and disposal of litter must be done in an environmentally friendly manner ✓ Under WAAPP, equipment were procured and buildings constructed. Training (MSc and PhDs) were successful ✓ SLARI seemed to have benefited more under WAAPP because was able to put out a stronger proposal and it was obvious that the country needed infrastructure after the destruction by the war ✓ Expecting to graduate into centres of excellence with the implementation of the WAATP ✓ Has mechanism in place to interface well with the private sector including annual stakeholder conferences, field days when technologies are showcased (WAAPP and SLECAD have also promoted such events) |
| <p>8.0</p> | <p>Western Area Rural Province, Koya Rural District</p> <ol style="list-style-type: none"> 1. Women Farmers 2. Youth Farmers |
| | <ul style="list-style-type: none"> ✓ Kwama farmers mostly originate from Freetown to settle after flooding disasters ✓ There is the KWACOMA Agric Business Centre (ABC) comprising members from Kwama (25), Coal town (25) and Masinbara town (25 members). Altogether include 50 women out of the 75. ✓ Received loan of rice seeds and fertilizer which are paid back with harvested produce ✓ There are 193 ABCs nationwide and 52 have been earmarked for support which includes the KWACOMA ✓ There are more women than men in the groups and they are more focused and serious |

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| | <ul style="list-style-type: none"> ✓ Key challenge has been availability of tools (hoe, shovel) for farming ✓ Require some machinery to lighten their burden ✓ FOs need help to mechanize into commercial farming and training is required ✓ The community was resettled from Freetown and given Le400,000 per household to settle in Kwama about 3 years ago ✓ They usually do group farming and support each other ✓ They have had issues with the quality of rice seeds given to them by the Ministry. Did not germinate at all but no response from the District Agriculture Office after lodging complaint. Had to resort to borrowing seeds for friends and well-wishers ✓ Soil and fertilizer are ok but no training as yet ✓ The ABC has management team comprising Manager, Financial Clerk, Operator and Storekeeper ✓ The executive include Chairperson, Secretary, Treasurer, Organiser/ PRO, Financial secretary, Advisor ✓ <u>Women group</u> ✓ Grow rice, maize, cassava and groundnuts ✓ Been borrowing seeds from friends ✓ Farm sizes vary from size of football park and various crops planted on same plot ✓ Challenges with pests but have no pesticides to deal with issues ✓ The supply of rice seeds from MAFFS not regular ✓ Labour is expensive. Have to pay men to assist on farms ✓ No security with regards to use of land ✓ The support from the FOs is crucial to sustain their activities as they are able to work as a group rather than individuals ✓ <u>Youth group</u> ✓ Main needs include machinery, seeds and training ✓ Require technical support to determine for example, time for planting, how to plant etc ✓ Issues include seed availability and quality ✓ Farms are located far from community and require some means of transport to access farms and to convey produce back to community. May take up to one hour to walk briskly to farm. ✓ Marketing of produce usually not problematic. |
| <p>9.0</p> | <p>Bombali Province- Makeni City District Agriculture Office- Monthly Stakeholders Meeting</p> |
| <p>10.0</p> | <p>Makeni District- Farmers</p> |
| | <p><u>Support for Crop Production</u></p> <ul style="list-style-type: none"> ✓ The farmers are happy with the level of extension services provided in the Bombali District. The Network of farmers assists with monitoring. ✓ Need to diversify crop production in the country to reduce importation of food and also reduce poverty. <p><u>Environmental Impact and Climate Change Adaptation</u></p> <ul style="list-style-type: none"> ✓ Some farmers are aware of the impact their agricultural activities have on the land as evidenced by a recent situation where a farmer asked MAFFS to sign an undertaking to restore land after cultivation. ✓ The Ministry is promoting drought resistant seed varieties to help combat the impact of climate change. |

- ✓ Inland Valley Swamp (IVS) farming is being promoted over upland farming which uses slash and burn and thereby results in greater impact on the environment.
- ✓ Need to introduce climate smart agricultural to help utilise vegetation cleared and biomass (charcoal from cut wood) to reduce the need for additional tree harvesting.

Capacity building

- ✓ The capacity of the MAFFS need to be built to adequately support the farmers in the District with extension services and input.

Access to labour by women farmers

- ✓ Women farmers incur high labour costs in hiring male labourers.
- ✓ There is a need for training of women in the operation of equipment such as power tillers and tractors to assist them in reducing labour costs. Women can be trained to operate farm machinery such as tractors and power tillers to assist them to make savings on the cost for hiring labour or machinery. The ministry carried some training for some women.

Access to land by women farmers

- ✓ Women have access to lands but generally do not own the lands.
- ✓ The law provides equal land rights to both men and women. This is practiced in the cities. However, in the rural communities, the traditional and cultural land rights do not provide the same land rights.
- ✓ In the northern areas for instance, a woman loses all rights to land when he husband passes away.

Attitudinal change

- ✓ There is generally an appreciable level of collaboration with the male farmers and their husbands. One challenge is that some men require their wives to cater for the home before leaving to their farms. They are therefore unable to start work early enough on their farms. Some women also need to assist their husbands with their farms before they can attend to their own farms.
- ✓ There is the need for education of the male farmers to assist the female farmers since they significantly support the family.
- ✓ Male farmers dominate discussions at the community level in the rural areas.

Participation of Youth

- ✓ The youth do not see farming as a lucrative venture and rather engage in activities that result in immediate income such as motorbike riding.
- ✓ The youth should be educated to understand the benefits of agriculture as a business to enable them fully participate

Access to finance

- ✓ There is limited access to loans and grants to farmers. Recommend that farmers are provided with loans or grants at the initial stages to enable them to generate adequate capital to hire labourers of hire/purchase equipment.
- ✓ There is a challenge of farmers not paying for fertiliser loans. The Network of farmers in the Bombali District is assistant the Ministry to recover fertiliser loans.

World Food Programme

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| | <ul style="list-style-type: none"> ✓ The issue of land ownership by women requires special attention to empower women, who play a critical role in the support of the family ✓ Loans to assist with crop production should be preferred over market loans which is the currently practice by the financial institutions ✓ In order to ensure adequate help is provided to farmers, the amount given in loans should vary for different types of crops based on the capital requirements, for instance annual crop production should be different from loans provided for perennial crops. |
| | <p>NGOs Participants: Inter Aide, Samako Agricultural Project, Wipe Our Tears, Farmers Network, CNC Watch New Africa Women and Children’s Foundation of Sierra Leone.</p> |
| | <ul style="list-style-type: none"> ✓ There is the need for funding, availability of equipment and capacity building to assist farmers improve crop production ✓ There is a need for more sensitisation and advocacy for women’s access to land for farming. The NGOs are available to assist in this respect. ✓ The Farmers’ Network is currently promoting the involvement of women and their capacity building in agriculture. ✓ The WAATP needs to work with groups of farmers so they can have a stronger voice. The NGOs will ensure that their activities do not result in division amongst the farmers. ✓ Experience show that women nurture the environment better than their male counterparts. They were able to better utilise compost produced from the ECOSAN project for their farms. ✓ Land was previously not a priority for women farmers. The government is promoting land ownership by women in agriculture. This is having an impact as men are supporting women more. Culture and traditions has a strong influence on the restriction of access of women to land. ✓ Cattle rearing and grazing is a big challenge and threat to crop production in the district. This especially affects women as they do not have a strong enough voice to oppose the cattle herders, since the cattle are usually owned by prominent people. ✓ The cattle Rearers and Crop Farmers Settlement Scheme was set up by the MAFFS and the Ministry of Lands, Country Planning and the Environment to address the conflict. There is, however, only one woman on the Committee and the Crop Division of the MAFFS is not represented. ✓ Synergies between crop production and cattle rearing, from traditional practise, could be explored to ensure peaceful coexistence. For instance, cow dung could be used as manure for farms. ✓ Most NGOs in the Bombali District are registered at the District level. Although it is expected this registration will be reflected at the national level with the Ministry of Finance and Economic Development, this is not the case. Identification of NGOs to work with under the WAATP should therefore extend to NGOs registered at the District level. |
| | <p>Crop Division of MAFFS (District Agricultural Officer, Mohammed A Bah, +23278354828)</p> |
| | <ul style="list-style-type: none"> ✓ The Crop Division in Makeni tries to involve SLARI in all activities so the farmers can benefit from both institutions. SLARI works through the District Crop Division to have access to the farmers. For instance, new seeds such as Vita Potato and improved Cassava seeds produced by SLARI were disseminated to the farmers by the District Crops Division of MAFFS. ✓ The District was not involved in the implementation of the WAAPP. The Director, as an individual, has however been involved in the consultations for the preparation of WAATP. ✓ Women are the main source of economic activity in the district and have more responsibility for the upkeep of their families. This is especially the case in traditional polygamous families as the wives literally compete to cater for their husbands since the men favour the most hardworking wife. |