SMALLHOLDER AGRICULTURAL PRODUCTIVITY ENHANCEMENT AND COMMERCIALIZATION PROJECT (SAPEC)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN SUMMARY

Project Number : P-LR-A00-003
Department : OSAN
Country : Liberia
Division : OSAN.2

1. BRIEF DESCRIPTION OF THE PROJECT AND KEY ENVIRONMENTAL AND SOCIAL COMPONENTS

1.1 The Government of Liberia (GoL) through the Ministry of Agriculture (MoA) has requested the Bank to support the Smallholder Agricultural Productivity Enhancement and Commercialization Project (SAPEC) which seeks to reduce poverty and strengthen food security of rural communities in Liberia by increasing agricultural productivity of staple foods (cassava, rice including vegetables), and improving rural infrastructure of economic significance (feeder roads and markets). The expected outcome is increased production of cassava, rice and vegetables, and their value for creating market competitiveness which will enhance food security through increased production of the staple crops, and better prices for the crops through increased product quality. Induced impacts would be increased in farmers’ income, creation of employment, and contribution toward the Government’s overall poverty reduction efforts. Best agricultural practices, and sustainable environment and natural resources management practices will be promoted through the Project activities including institutional strengthening of key stakeholders in the agriculture sector.

1.2 The Project comprises of four (4) components:

(i) Sustainable Crop Production Intensification: The component aims to expand the agricultural land and increase water availability to increase production of rice, cassava and vegetables by rehabilitating approximately 1,000 hectares of community-owned lowland in 4 rice producing counties of Grand Gedeh (526 ha), River Gee (424 ha), Maryland (25 ha) and Grand Kru (113 ha). Engineering activities for land development will include earth and layout works, canalization, small-scale water control and water capture structures, (ii) Value addition and marketing: This component will support (i) rehabilitation of 300km of feeder roads approximately 50km in 6 counties, (ii) rehabilitation of 12 market centers (1 in each county), (iii) construct 9 agribusiness and 3 centers for the Ministry of Agriculture, (iii) Capacity Building and Institutional Strengthening: Under this component the project will build the capacity of the Ministry of Agriculture, institutions of higher learning, and extension officers through training,
and (iv) Project Coordination and Management: This component will focus on effective coordination and management of the project.

1.4 The Project is classified as Environment Category 2 according to the Bank’s Environmental and Social Assessment Procedures (ESAP). Although the targeted counties have been identified and the government has indicated the type of activities to be supported through the Project, sub-project sites have not been identified and the technical designs are yet to be prepared. These activities will be carried out during project implementation. In complying with the Bank’s Environmental and Social Assessment Procedures and the Liberia Environmental Law, an Environmental and Social Management Plan (ESMP) has been prepared to assist the GoL in identifying and eventually establishing the regulatory, administrative and technical capacity within Liberia to ensure that for each development sub-project undertaken in the county, environmental and social impacts are identified, appropriate mitigation and monitoring measures are presented through the preparation of site-specific Environmental and Social Impact assessment studies. The Project will not involve displacement and/or resettlement during the implementation of the Project activities.

1.5 The Project will be carried out in 12 of the 15 counties of Liberia which will include: Bomi, Grand Cape Mount, Montserrado, Margibi, Grand Bassa, River Cess, Nimba, Grand Gedeh, River Gee, Grand Kru, Maryland and Lofa.

2. Major Environmental and Social Impacts

2.1 Overall, the Project is expected to generate positive social-economic and environment impacts that could lead to reduced poverty levels, improved food security through increased and better crop yields, creation of jobs for the local population and youth, increased household income, and sustainable management of land and water.

Potential Positive Impacts:

2.2 The expansion of agriculture land and increase of water availability for crop production will enable farmers to increase agricultural productivity through extended cropping opportunities, enhance creation of employment creation and related income, and improve food security and rural livelihoods. This will impact directly on poverty reduction level in the targeted areas and accelerate transition to sustainable agriculture and a dynamic rural economy. Providing training to farmers through the extension officers will induce improved agricultural practices, management and use of natural resources (particularly land and water) as well as reduce long-term conversion of swamps to cultivated lands, and promote efficient use of agricultural inputs. There is no displacement and/or resettlement envisioned within the implementation of the Project activities.
2.3 The rehabilitation of lowland areas to increase water and land availabilities to communities, rehabilitation of feeder roads and promotion of value addition will increase agriculture production and strengthen linkages between farmers and markets, which will ultimately improve the overall food security and increase the income levels of farm households. Improvement in economic benefits at farm level is projected to lead to secondary multiplier effects resulting from increased purchasing power in rural areas, contributing to poverty reduction and economic development in these areas. As income levels rise through creation of employment opportunities and more revenues are generated from agriculture production, health and social well-being of farmers will improve. In addition, the farmers and communities close to the project sites will have the opportunity to learn and practice improved agricultural methods and efficient utilization of farm inputs and natural resources management, such as sustainable soil and water management. Women, in particular, will have the opportunity to participate in farm related income generating activities and contribute meaningfully to the socio-economic development of their communities.

2.4 The proposed activities will promote better use of land and water through adoption of agriculture technologies. The positive environmental and social impacts of the project will prevail over potential negative impacts during the operational phase. The positive impacts include: (i) the 1,000ha that will be rehabilitated for irrigated agriculture will bring marginal productive land into full production; (ii) good quality water will become available for different purposes; (iii) farmers who are likely to settle in the project areas will be allocated lands, thus improving their livelihood; (iv) potential afforestation will improve the micro climate; (v) a general increase in smallholder farmer household income; (vi) elimination of drought conditions from the areas where the 1,000 ha of lowland will be rehabilitated; and (vii) enhancing of inter and intra community interaction and adoption of renewable energy sources due to quicker diffusion and adoption of new agricultural technologies.

Potential negative impacts

2.5 The negative impacts inherent to agricultural activities are largely related to construction activities and include soil erosion and land degradation arising from land preparation activities (land tilling, leveling and ridging), drainage of cultivated lands, loss of natural habitats adjacent to the project areas, generation of a moderate level of dust emissions, alteration of hydrological conditions and water flows to river systems, and pollution of water and land resources from vehicles and machinery used for construction. In addition, the clearing of land for agriculture will likely cause loss of trees and greenery project sites.

2.6 During the operational phase, a frequent problem might likely be related to the rise in the water-table (waterlogging) as a result of poor water distribution systems, poor water management and poor in-field practices. The changing hydrological regime may likely alter the
capacity of the environment to assimilate water soluble pollution, and reductions in water flows may alter the capacity of water bodies to transport sediment and thereby causing a build-up of sediments in slower moving reaches. The use of agro-chemicals (both natural and chemical fertilizers) may likely result in an excess of nutrients which can contaminate water bodies and impact the health of the people dependent on the water bodies. This also poses a risk of having high incidences of water-borne diseases due to the consumption of polluted water by farmers and people living near the project sites. In addition, areas with flat topography or with water tables that have a low hydraulic gradient are at risk from salinization (increase in salt content in soils).

3. Enhancement and Mitigation Measures

3.1 In order to optimize the overall environmental performance of the project, a number of specific enhancement and mitigation measures at the institutional and operational level have been proposed in the ESMP in compliance with the Liberia EIA Law and the Bank’s Environmental and Social Assessment Procedures. With appropriate mitigation measures, the potential negative impacts can be reduced. Carrying out land development activities (land tilling, leveling, etc.) during the dry season will control soil erosion from the project sites. This will reduce the risk of massive erosion from surface drainage as there is less rainfall during the dry season. Effective spray of water will control dust emissions. Selective clearance of trees on project sites will mitigate the loss of trees. Adherence to recommended procedures in applying agro-chemicals will minimize water pollution and contamination. To help maximize the efficient use of agriculture water, farmers will be trained in proper land and water management practices. Careful water management through timing and control of water delivered to the users will enhance the efficient use of agriculture water. Lack of technical skills will be addressed by training group of farmers in appropriate farming skills to improve productivity and protect the environment and natural resources. Proper canal maintenance through weeding and lining will mitigate the problem of vector breeding and control pollution.

3.2 The negative effects occurring during the construction phase addressed through the ESMP and an appropriate Code of Good Practices for Construction that will be prepared before commencing Works on sites and included in the Work Contract. This will prevent negative environmental impacts and promote occupational health and safety of workers. The ESMP includes measures that will reduce to minimally-acceptable levels other potential negative impacts, including pollution and contamination of water bodies that may arise from runoff of excess fertilizers and pesticides, expansion of natural habitats that may not be compatible, alteration of hydrological conditions and river flows for downstream ecosystems (where applicable), rapid rise of water table at certain locations.
3.3 The following measures will be carried out as part of the Project implementation to ensure that potential negative impacts are mitigated while enhancing the positive impacts arising from both the construction and operational phases. With regard to civil works whose detailed engineering design will be carried out during Project implementation, as well as the sites which will be determined during the implementation phase, environmental and social assessment will be obligatorily undertaken in compliance with Liberia Environmental Law and AfDB Environmental and Social Assessment Procedures. The impact studies and the corresponding environmental licenses for each sub-project intervention will be submitted to the Bank as implementation advances, and in terms of the Loan Agreement, prior to the corresponding civil works being advertised for tender. The same approach will be applied with regard to the Resettlement Action Plans (RAPs) should there be any Project intervention entailing involuntary resettlement. Alternatives will be considered on the decision of site-specific location of farms, and market facilities, choice of the construction materials, choice of solid waste management facilities.

3.4 In order to mitigate the potential negative environmental and social impacts of the sector budget support, the general mitigation measures include the following:

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<tr>
<th>Impact</th>
<th>Mitigation and Enhancement Measures</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>Loss of vegetation cover</td>
<td>• Limit clearing of vegetation cover&lt;br&gt;• Construction on farms should be carried out during fallow seasons</td>
<td>Contractor/MoA</td>
</tr>
<tr>
<td>Air/dust pollution</td>
<td>• Suppress dust by wetting the construction sites&lt;br&gt;• Construction should be carried out during fallow season&lt;br&gt;• Site workers should be provided with protective gear</td>
<td>Contractor/MoA</td>
</tr>
<tr>
<td>Creation of borrow pits</td>
<td>• Excavated borrow pits should be properly decommissioned and rehabilitated after use by backfilling and trees planted to restore the lost vegetation</td>
<td>Contractor</td>
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<tr>
<td>Destruction of natural habitat</td>
<td>• Avoid construction on protected areas&lt;br&gt;• Creation of habitat enhancement areas where the natural habitat is assessed as detrimental</td>
<td>Contractor/MoA</td>
</tr>
<tr>
<td>Soil erosion and sedimentation</td>
<td>• Apply erosion control techniques to disperse erosive energy and avoid concentrating it.&lt;br&gt;• Providing good vegetative cover&lt;br&gt;• Contour drainage to slow down surface runoff.&lt;br&gt;• Following completion of construction work, vegetation should be established ensure soil stabilization of the project area and its surroundings</td>
<td>Contractor/MoA</td>
</tr>
<tr>
<td>Waste generation and disposal</td>
<td>• Provide on-site waste collection and disposal facilities&lt;br&gt;• Prepare a waste management plan for waste collection and disposal</td>
<td>Contractor/MoA</td>
</tr>
<tr>
<td>Soil and water pollution</td>
<td>• Monitoring of water quality (runoff)</td>
<td>EPA</td>
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</table>
| Rise of water table (waterlogging) | • Provision of drainage canals  
• Water management practices | Contractor/MoA |
| Increase in the use of pesticides | • Prepare an integrated pest management plan | MoA |
| Agro-processing | • Proper waste management and wastewater treatment  
• Provide on-site waste collection and disposal facilities  
• Prepare a waste management plan for waste/effluent collection and disposal | Contractor/MoA |

**Waste Management**

3.4 During the site specific detail design, Waste Management Plans (incorporated into the market architectural and engineering designs) will be prepared to ensure proper methods for collection and appropriate disposal of waste generated from the markets including management responsibilities and proper staff training programs.

**Environmental and Social Screening Procedures:**

3.5 The Project will adopt stringent environmental and social screening procedures fully integrated into the review process of the sub-project activities once the project sites have been identified submitted for financing. In order to facilitate the environmental and social appraisal of sub-projects, the PIU in the MoA will employ a national environmental specialist to be part of the PIU. As part of the subproject appraisal, the project environmental specialist would be required to examine the potential environmental impact of the sub-projects. The environmental and social screening procedure is shown in Annex I. In the environmental and social screening procedure, the PIU environment and social specialist would make sure that the proposed activities comply with the Bank’s Safeguard Policies as well as Liberia Environmental Law.

**4. Monitoring Program and Complementary Initiatives**

4.1 MoA as the executing agency of the Project will be required to prepare site-specific design stage ESIA studies during implementation of the Project in compliance with the Liberia Environmental Law and the Bank’s Environmental and Social Assessment Procedures. Annual Audits on the implementation of ESMPs should also be prepared by the MoA, and submitted to the Liberia EPA. The Project Implementation Unit within MoA will bear the full responsibility in the preparing the studies.

4.2 During project implementation, monitoring will be very crucial to ensure that the proposed mitigation measures are implemented. The PIU together with Liberia EPA will be responsible for monitoring of the environmental and social aspects of the Programme.
4.3 Indicators for monitoring changes in the physical, biological and socio-economic environments should be developed during the preparation of the design stage site specific ESIA and ESMPs, and the monitoring component fully elaborated as part of the detailed site specific assessments.

4.4 Existing studies’ should be used to establish the needed baseline for monitoring. The following studies are recommended:

i. Vegetation studies to establish a baseline on key vegetation types and human use and requirements for the conservation and provide a list of sensitive plants that require special protection;

ii. Ecological surveys to determine the extent to which different activities could impact on the ecosystems and identify ecologically sensitive areas, which should be excluded from project activities. These studies will also identify economically viable alternative uses and activities.

Monitoring the Physico-Chemical Environment

4.5 The monitoring programme for the physical environment should cover inter alia:

i. Land use outside the project area to determine changes in land use patterns resulting from implementation of project activities. This could be done annually using the baseline maps prepared during the resource survey at the beginning of the project;

ii. Soil erosion - qualitative observations of soil erosion occurring in clearing areas should be recording signs of sheet and gully erosion especially after heavy rains. Results should be reported to the PIU, and

iii. Changes in water quantity and quantity including flow levels and nutrient levels

<table>
<thead>
<tr>
<th>Item</th>
<th>Monitoring Parameters</th>
<th>Monitoring Frequency</th>
<th>Monitoring Locations</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality</strong></td>
<td>Dust (particulate matter)</td>
<td>Biweekly (before and after)</td>
<td>Project sites; and residential areas located 200m of the construction areas</td>
<td>Contractor/EPA</td>
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<td><strong>Noise</strong></td>
<td>Decibels (dB)</td>
<td>Biweekly (before and after)</td>
<td>Project sites; and residential areas located 200m of the construction areas</td>
<td>Contractor/EPA</td>
</tr>
<tr>
<td><strong>Water Quality</strong></td>
<td>Total Suspended Solids BOD</td>
<td>3 times a year (before and after)</td>
<td>Rivers and water bodies in the</td>
<td>EPA</td>
</tr>
<tr>
<td>Column</td>
<td>COD Total fecal coliform PH Salinity</td>
<td>vicinity of project sites; Above and below project influence and below drainage outlets</td>
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<td><strong>Soil</strong></td>
<td>Soil type, quality, texture, moisture content, topsoil depth, susceptibility to erosion</td>
<td>Weekly Site areas predicted to be at highest risk for erosion EPA</td>
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<tr>
<td><strong>Health &amp; Safety</strong></td>
<td>Health and safety surveys, documentation of injuries and accidents; Proper use of PPE, presence of signs, first aid kit, and firefighting devices</td>
<td>Continuous Entire area of operation Contractor/MoA</td>
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5. **INSTITUTIONAL ARRANGEMENTS AND CAPACITY BUILDING REQUIREMENTS**

5.1 Borrower capacity for the implementation of both environmental and social safeguards is moderately effective. Liberia has a professionally staffed environmental regulatory agency (Liberia Environmental Protection Agency-EPA) with demonstrated effective enforcement of environmental regulations. EPA works closely with the decentralized Environmental Officers who are responsible for site level environmental management and monitoring of project activities. Recommendations have been made to recruit an Environmental Officer to be part of the SAPEC/PIU at the MoA. The Environmental Act prescribes the process, procedures and practices for conducting an Environmental Impact Assessment (EIA) and preparing the EIA reports. The guidelines are complemented by other sector specific policies and legislations that prescribe the conduct for managing the environment. The Environment Protection Agency (EPA) is the principle authority in Liberia responsible for managing the environment and coordinates, monitors, supervises and consults with relevant stakeholders on all activities related to the protection of the environment and sustainable use of natural resources. In addition to being responsible for the provision of guidelines for the preparation of Environment Assessments and Audits, and the evaluation of environmental permits, the EPA is mandated to set environmental quality and ensure compliance for pollution control.

**Environmental and Social Safeguards’ Supervision Plan**

5.4 Given the Borrower’s limited (but growing) experience with implementation of environmental and social safeguards instruments, close safeguards supervision and
implementation support will be carried out during the early stage of project implementation until adequate safeguards experience is developed. The Environmental Officer within the PIU in cooperation with the EPA and other relevant local government staff will supervise the implementation of the safeguards instruments discussed above. The Bank’s supervision will focus on (i) providing regular implementation support and (ii) carrying out field reviews of safeguards implementation, and (iii) monitoring safeguards implementation based on periodic progress reports. Bank’s supervision will be carried out by field-based Bank technical staff and complemented by sector environmental specialist together with the MoA and EPA technical staff not only during regular biannual supervision missions but also during interim technical safeguards missions that will respond to emerging issues or MoA requests for assistance.

6. Public Consultations and Disclosure Requirements

6.1 During pre-appraisal and appraisal stages of the project design, consultations were carried out with all significant stakeholder groups in the counties where the project will be implemented. These stakeholder groups include: Government and regulatory agencies, Non-government organizations, and local stakeholders i.e. district councils and committees, and local population. Their views have been incorporated in the design of the programme. The ESMP will be publicly released through the AfDB Public Information Center and made available to the AfDB Board 30 days prior to project submission.

7. Estimated Costs

7.1 The costs for incorporating environmental and social mitigation and monitoring measures are estimated at US$ 464,975 over the five-year project implementation period. The costs have been incorporated into the overall Project costs.

8. Implementation Schedule and Reporting

8.1 Given the nature of the financing mechanism, annual environmental and social progress reports will be prepared by PIU in the MoA for the effective implementation of the Environmental and Social Management Plans will require that adequate capacity enhancement within institutions and other stakeholders are undertaken. There will be training for the yet to be recruited LWH Environmental and Social Specialists and REMA. The training will cover implementation of the ESMF including project screening, impact identification and analysis, Environmental Assessment procedures and requirements (EA and EIA), Design and implementation of mitigation measures at sub project level, monitoring and review of environmental performance and reporting.
9. RECOMMENDATIONS

9.1 Given that the project sites are yet to be identified and the engineering design are yet to be prepared to implement a comprehensive environmental analysis, it is recommended that during the detail design on the project activities, site specific Environmental and Social Impact Assessment be carried out in compliance with the Bank’s Environmental and Social Assessment Procedures and the Liberia Environmental Law. The project will not involve land acquisition or resettlement. Smallholder farmers will be assisted in developing community-owned swamps. Moreover, the rehabilitation works on feeder roads will be on existing road alignments.