



**GOVERNMENT OF SIERRA LEONE  
MINISTRY OF AGRICULTURE FOOD SECURITY AND FORESTRY**

**CLIMATE SMART AGRICULTURE IN  
SIERRA LEONE: CURRENT STATUS AND  
SUPPORT NEEDS TO BETTER  
INTEGRATE CSA INTO THE NAIP**

June 2015

## **Acronyms**

CSA:	Climate Smart Agriculture
MAFFS:	Ministry of Agriculture, Forestry and Food Security
NAIP:	National Agricultural Investment Plan
NAPA:	National Adaptation Programme for Actions
NPAA:	National Protected Area Authority
NSCC:	National Secretariat for Climate Change
SLEPA:	Sierra Leone Environmental Protection Agency
SLRA:	Sierra Leone Roads Authority
VC:	Value chain
WAAPP:	West African agricultural Productivity Programme
WAPPCU:	Water Planning and Policy Coordination Unit

## Executive Summary

Sierra Leone, with a land area of 72,325 Km<sup>2</sup>, is bordered on the west by the Atlantic Ocean, on the south-east by Liberia and on the north-east by Guinea. Its population is estimated at 6,080 million with an annual growth rate of 1.9 % (PEMSD/MAFFS 2013). Like many African countries, agriculture is the backbone of this economy; and more than 65 % of the labor force is engaged in farming and contributes significantly to the gross domestic product (MoFED 2004).

Sierra Leone is particularly vulnerable to climate change; already feeling the impact through floods, heat waves, lightening and violent winds, hails, thunder, seasonal droughts, severe storms and erratic rainfall patterns. In agriculture, potential impacts could occur in land management, crop and livestock husbandry, fishing, forestry, water resources, ground water levels and socio-economic aspects of agricultural production. Climate change is known to have adversely affected the lives and livelihoods of large communities. Some communities, particularly those living around coastal Freetown and surrounding areas, presently experience floods and landslides in nearly every wet season.

The Government of Sierra Leone is concerned that the impact of all of these disturbances will cause a decline in food production, high food prices and lower standards of living of majority of the population.

It has therefore implemented a number of policies for climate change mitigation and deforestation reduction, designed to include climate change issues in the National Agricultural Investment Plan (NAIP). The government also established the Sierra Leone Environmental Protection Agency (SLEPA) in 2008 with the goal to create and enforce environmental regulations. One of the key mandates of SLEPA is to strengthen inter-institutional dialogue and inter-sectorial coherence on sectorial climate change adaptation and mitigation projects operating in the country.

Other steps by the government include (i) the establishment of a National Protected Area Authority (NPAA), (ii) declaration of three national parks, biodiversity and wetland projects, (iii) the establishment of a climate change office in Sierra Leone, (iv) multi-stakeholder climate change forum, climate change projects and a host of other climate change institutions and mechanisms for adaptation.

Twenty four priority projects listed in the United Nations' Framework Convention on Climate Change (UNFCCC) are consistent with NAIP programmes. These include development of early warning systems, development of inland valley swamps (IVS) and development of irrigation and drainage systems for agricultural production. Overall, about one-third of NAIP planned investments contribute directly to implementation of National Action Plan for Adaptation (NAPA) priorities.

The issue of Climate-Smart Agriculture (CSA) is not new in Sierra Leone. Some mechanisms have already been put in place such as creating partnerships and working with similar organizations as well as relevant national institutions and government to harmonize efforts on climate change interventions. In addition to the efforts of the government, the international agencies and other stakeholders, there are private organizations involved in climate change and CSA. For example, the Climate-Smart Agriculture youth network in Sierra Leone is a voluntary farmer-led multi-stakeholder, youth-action-coalition group committed to the incorporation of CSA within the food and agricultural system. This group helps to form, engage, and transform partnerships to encourage actions that reflect an integrated approach to the three pillars of Climate-Smart Agriculture.

These pillars include sustainable improvement in productivity, building resilience and removing greenhouse gasses (GHSs). Other similar groups include the Women's Network for Environmental Sustainability. This project particularly targets women and rural communities engaged in activities such as land utilization, logging and deforestation. The main goal of this organization is to raise awareness among women and communities and to have them involved in

articulating, designing, and implementing mitigation and adaptation measures, to minimize environmental degradation.

There is a sector report, which sets out to examine the effects of climate change on the five sub-sets of agriculture: crops, fisheries, livestock, water resource management and forestry. It will address the effect of climate change in the food value-chain. It will be divided into four sections, each dealing with a sub-sector.

The first section highlights Sierra Leone with a map that demarcates the country into four territories, a diagnosis of the hazards and a summary of climate change adaptation in these territories.

The second section deals with identification of key adaptation and mitigation efforts by the different sectorial agencies and depicts ongoing mechanisms that have been put in place.

Section three highlights the inter-sectorial and inter-institutional coherence landscape evident in the country. These range from issues raised by the different agencies, progress observed and difficulties regarding adaptation and mitigation efforts.

Finally, section four addresses support needs and requests directed to the ECOWAS and mainstreaming of Climate-Smart Agriculture into the National Agricultural Investment Plan. The section closes by expressing associated efforts to strengthen inter-institutional dialogue and building institutional linkages and partnerships.

## **Introduction**

Sierra Leone has been ranked at the bottom of the United Nations' Human Development Index (UNHDI) in spite of its rich endowment of resources. The Human Development and social indicators, including illiteracy, primary school enrolments, life expectancy, maternal mortality, malnutrition and infant mortality rates are the worst in the World. The infant Mortality rate is about 182/1000, while life expectancy at birth is 38 years compared to 45 years in Sub-Saharan Africa (SSA). The adult literacy rate is estimated at 30%, while the population with access to safe drinking water is 34%. Endemic diseases, especially malaria, diarrhea and dysentery loom as a menace.

The decade old rebel war and the ongoing Ebola Virus Disease crisis has had a devastating impact on all facets of the economy, destroying government's ability to adequately meet the needs of the nation. Against this background, the development of human and natural resources is proving a daunting task without adequate financial support especially in the light of the negative impacts of climate change. The

government has adopted short-term development plans based on the Millennium Development Goals (MDGs), the Poverty Reduction Strategy Paper (PRSP), the vision 2025 Sierra Leone document and a series of action plans which are project (short-term) driven. These development (sectoral) plans constitute baseline development strategies which have not taken onboard stresses that can be created by climate change. These stresses or shocks that may result in the rupture in developmental trends are being catered for by the NAPA and SLEPA. This report contains many ongoing activities and projects to that have been put together to enable the country meet its immediate needs and respond to her concerns with regards to mitigation and adaptation to the adverse effects of climate change. Efforts to improve the quality of life of its people have been hampered by extreme poverty, structural weakness in the economy, civil conflict, Ebola Virus Disease and the lack of capacities related to growth and development, and all these can be further aggravated by the negative impacts of climate change.

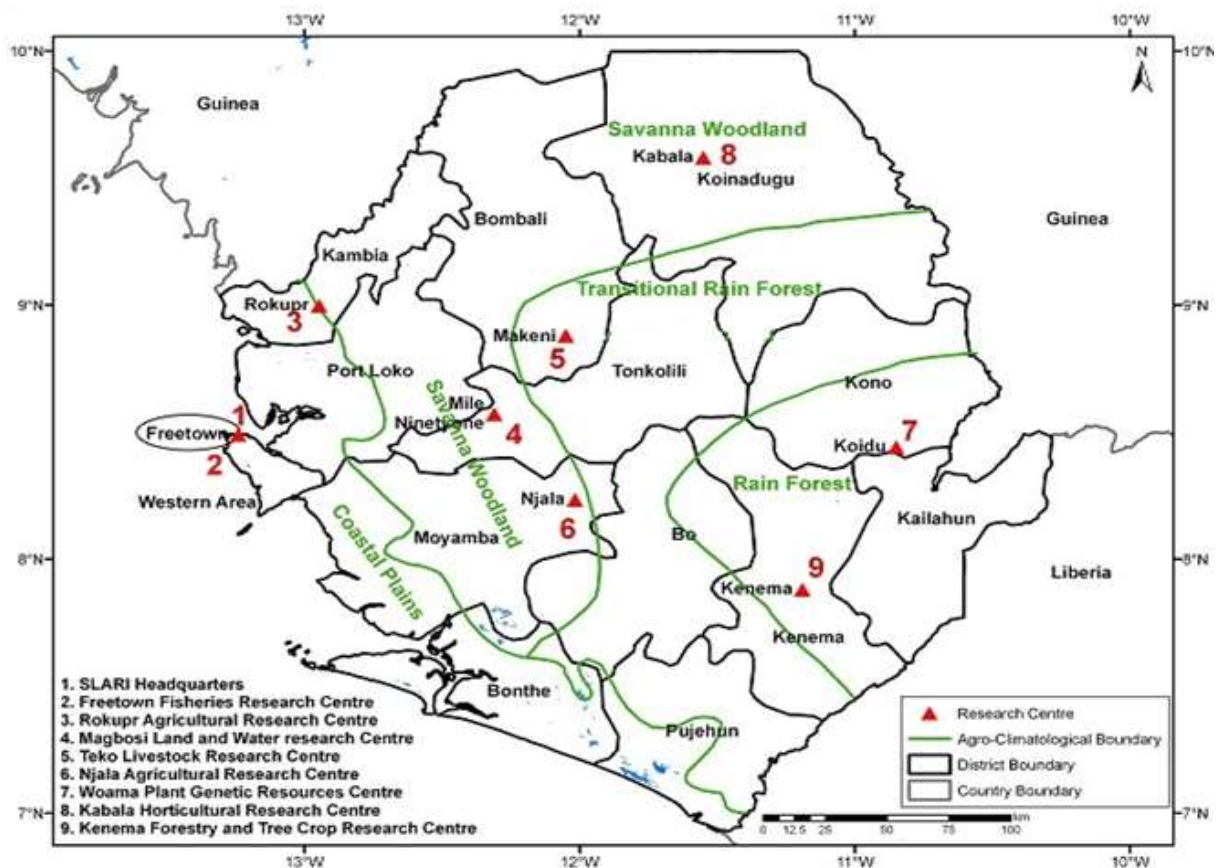
## 1. The territories of agricultural climate change adaptation in Sierra Leone

### 1.1 Presentation of the territories

Four main territories are to be distinguished regarding agriculture adaptation to climate change in Sierra Leone:

- *Coastal areas*: vulnerable areas are Western Area Peninsular, South West, Southern Region, and North West. The dominant crops are rice, vegetables, maize, groundnut, and fisheries;
- *Savanna Lowlands/Woodlands Interior Plateaus*: vulnerable areas are North East and Parts of Southern Region. The dominant crops are cassava, rice, livestock, millet and Sorghum;
- *Transitional Rain Forest*: vulnerable areas are North East, Southern Region, and South East. The dominant crops are forestry, rice, livestock, millet and cassava;
- *Forested Interior Plateaus and Mountains*: vulnerable areas are Eastern Region, East North-East, South-East, and Southern Region. The dominant crops are rice, cassava, maize, groundnut, and forestry.

Figure 1. Territories for Agricultural adaptation to Climate Change in Sierra Leone.



## 1.2 Analysis of the vulnerability of the territories to climate change

Table 1. Vulnerability analysis for each territory.

Denomination of Territories	Degree of Exposure	Degree of Sensitivity	Adaptive Capacity	Resulting Vulnerability
Coastal Areas	Generally High	Generally High	Generally Low	Land/mudslide, flooding, sea level rise, coastal erosion, tourism, salt intrusion, sharp increase in temperature, increase of storm and wind activity
Western Area	High	High	Low	
South West	Medium	High	Medium	
Southern Region	High	Medium	Low	
North West	Medium	Medium	Medium	
Savanna Lowland				Thunderstorm, dry spell, increase of storm, wind activity, sharp rise in temperature
North Region	High	High	Low	
Parts of Southern Region	Low	Low	High	
Transitional Rain Forest				
Parts of Northern Region	High	Medium	Low	Rainfall variability, temperature surges, Increase in storm and wind activity, and evaporation
Southern Region	Medium	Low/Medium	Medium	
Rain Forest				
Eastern Region	Generally High	High	Medium	Thunderstorm, change in rain fall pattern, increase in storm and wind activity, sanitization
South East	High	High	Medium	

### 1.3. Current status / diagnosis of climate change adaptation in these territories

Table 2. Progress, difficulties and support needs in each territory.

<b>Territories</b>	<b>Progress observed</b>	<b>Difficulties encountered</b>	<b>Needs for support at the local level</b>
<b><i>Coastal Areas</i></b>	<ul style="list-style-type: none"> <li>-SLEPA and other agencies</li> <li>-Declaration of Western Area Park</li> <li>-Declaration of Protected forests</li> <li>-Establishment of Climate Change office.</li> <li>-Construction of fish smoking and other processing centers</li> </ul>	<ul style="list-style-type: none"> <li>-Disease Outbreak, Logging</li> <li>-Clearing for settlement/Encroachment</li> <li>-Public Awareness/Data unreliable</li> <li>-Mining</li> <li>-Poorly regulated livestock's and fishing policies</li> <li>-Inadequacy of trained personnel and poorly constructed sheds</li> </ul>	<ul style="list-style-type: none"> <li>-Sensitization</li> <li>- More involvement of district councils.</li> <li>- More extension Staff</li> <li>-Encourage farmers to stop slash and burn.</li> <li>-Training of local staff or fish shed contractors (VC)</li> </ul>
<b><i>Savanna Lowlands</i></b>	<ul style="list-style-type: none"> <li>-Administration of Districts Councils</li> <li>-SLEPA and other agencies</li> <li>-Declaration of Protected Forest</li> <li>-Sensitization programmes.</li> <li>-Renewable (Solar Energy)</li> <li>-Supply of Cassava graters/rice mills for cassava processing into gari, fufu, flour and starch</li> <li>-Cassava and rice drying floors (VC)</li> </ul>	<ul style="list-style-type: none"> <li>-Mining –Bauxite and Rutile/Wild fires</li> <li>-Logging</li> <li>-Limited technology or technicians</li> <li>-Low Public awareness</li> <li>-Unregulated livestock production</li> <li>-Frequent mechanical breakdowns of graters/rice milling machines. (VC)</li> <li>-Poor construction and drying floor sizes often too small (VC)</li> </ul>	<ul style="list-style-type: none"> <li>-Regulate livestock policy among herders</li> <li>- More extension staff</li> <li>- More involvement of District Councils</li> <li>-Encourage Farmers to stop slash and burn</li> <li>-Training of machine repair technicians (VC)</li> <li>- Using local contractors will be more feasible</li> </ul>
<b><i>Transitional Rain Forest</i></b>	<ul style="list-style-type: none"> <li>-Protected forests</li> <li>-Carbon Credit Projects</li> <li>-Multi-stakeholders Climate Change Forum</li> <li>-Administration of Districts Councils</li> <li>-SLEPA and other agencies</li> </ul>	<ul style="list-style-type: none"> <li>-Public Awareness</li> <li>-Lack of reliable data or no data on Climate Change</li> <li>-Iron ore mining</li> <li>-Erosion</li> <li>-Limited crop varieties to adverse Climate Change conditions</li> </ul>	<ul style="list-style-type: none"> <li>-Sensitization on Climate Change and CSA issues.</li> <li>-More local extension Staff</li> <li>-More involvement of district Councils</li> </ul>
<b><i>Rain Forest</i></b>	<ul style="list-style-type: none"> <li>-Declaration of two national parks</li> <li>-Establishment of Protected forests</li> <li>-Carbon credit Projects</li> <li>-Biodiversity &amp; Wetland Projects</li> </ul>	<ul style="list-style-type: none"> <li>-Coal Manufacture</li> <li>-Logging</li> <li>-Hunting</li> <li>-Slash and burn farming</li> <li>-Erosion</li> <li>-More inclination to upland farming</li> <li>-Little or no sensitization</li> </ul>	<ul style="list-style-type: none"> <li>-Sensitization</li> <li>-More extension staff</li> <li>-More involvement of districts and local councils</li> </ul>



## 2. CSA in the context of national sectorial programmes, and intersectoral related issues

### 2.1 Responsible sectoral programmes for each sub-sectors regarding climate change adaptation

The following tables are related to the responsible sectoral programmes for each sub-sectors regarding climate change i) adaptation and ii) mitigation.

Table 3. Responsible sectoral programmes for each sub-sectors regarding climate change adaptation.

<b>Climate Change in the Water Resources</b>	<b>Responsible Sectoral Programmes</b>
<ul style="list-style-type: none"> <li>Implementation of the efficiency of existing water supply systems in both urban and rural areas</li> </ul>	Water policy planning coordination units (WPPCU), SLEPA, Ministry of Water Resources
<ul style="list-style-type: none"> <li>Improve water research, monitoring and management</li> </ul>	Ministry of Water Resource
<ul style="list-style-type: none"> <li>Promote rain water harvesting and develop on integrated management system for fresh water bodies</li> </ul>	Integrating Adaptation to Climate Change in Agricultural Production and Food Security (IACCAPFS) through World Bank
<ul style="list-style-type: none"> <li>Develop utilization of better planning tools such as aquifer simulation model and predictive salt water intrusion model</li> </ul>	Ministry of Water Resource
<ul style="list-style-type: none"> <li>Construction of more wells/boreholes/dams</li> </ul>	IACCAPFS through the International Fund for Agricultural Development
<ul style="list-style-type: none"> <li>Raise awareness/sensitization on the importance of water Resource</li> </ul>	Ministry of Water Resource
<b>Climate Change in the Fisheries Sub-Sector</b>	<b>Responsible Sectoral Programs</b>
<ul style="list-style-type: none"> <li>Monitor Coastal Ecosystem and processes</li> </ul>	Ministry of Marine Resources, NGOs
<ul style="list-style-type: none"> <li>Promote sustainable fishing practices and develop weather meteorological services</li> </ul>	Ministry of Marine Resources, NGOs
<ul style="list-style-type: none"> <li>Improve fisheries legislations and strengthen fisheries management policies</li> </ul>	Law Officers Department. Ministry of Marine Resources
<ul style="list-style-type: none"> <li>Improve traditional fishing practices and community livelihood</li> </ul>	LDCF (Least Developed Countries Fund)
<ul style="list-style-type: none"> <li>Preserve and restore essential habitats, promote conservation and environmental education</li> </ul>	LDCF
<b>Climate Change in the Forestry Sub-Sector</b>	<b>Responsible Sectoral Programs</b>
<ul style="list-style-type: none"> <li>Management and protection of Forest reserves and catchment areas including wetlands</li> </ul>	National Protected Area Authority (Ministry of Agriculture, Forestry and Food Security: MAFFS)
<ul style="list-style-type: none"> <li>Rehabilitation of degraded areas by a forestation/reforestation</li> </ul>	National Protected Area Authority (MAFFS)
<ul style="list-style-type: none"> <li>Capacity Building</li> </ul>	MAFFS, NSCC
<ul style="list-style-type: none"> <li>Establishment forest reserves, protected areas and National Parks/Sanctuaries and demarcate existing ones in order to maintain their integrity</li> </ul>	National Protected Area Authority (MAFFS), National Parks Authority
<ul style="list-style-type: none"> <li>Revise and update laws, regulation and policies of environment, forestry and wildlife sectors</li> </ul>	SLEPA, MAFFS
<ul style="list-style-type: none"> <li>Initiate training sensitization for the general public on climate change and forestry</li> </ul>	Climate Change Secretariat
<ul style="list-style-type: none"> <li>Promote the use of renewable energy (Solar Energy)</li> </ul>	SLEPA
<b>Climate Change in the Crop Sub-Sector</b>	<b>Implementing Sectoral Arrangements</b>

<ul style="list-style-type: none"> <li>Develop irrigation and land drainage systems for agriculture</li> </ul>	IACCAPFS
<ul style="list-style-type: none"> <li>Cultivation of drought resistant crops</li> </ul>	SLARI, University
<ul style="list-style-type: none"> <li>Develop and implement agricultural land use and land management plans</li> </ul>	MAFFS
<ul style="list-style-type: none"> <li>Train, educate professional and technical staff including agricultural extension workers on climate change and agriculture</li> </ul>	SLEPA, MAFFS
<ul style="list-style-type: none"> <li>Improve seed storage facilities and establish seed banks</li> </ul>	MAFFS and SLARI
<ul style="list-style-type: none"> <li>Promote swamp land farming</li> </ul>	MAFFS, Rural Community-Based Poverty Reduction Project (RCPRP)

Table 4. Responsible sectoral programmes for each sub-sectors regarding climate change mitigation.

<b>Agricultural Sector</b>	<b>Sectoral Programs/Institutions</b>
<ul style="list-style-type: none"> <li>Agricultural Research Centers/Universities should be encouraged to promote suitable crop varieties that will be resilient to adverse weather conditions</li> </ul>	SLARI
<ul style="list-style-type: none"> <li>Improve road network that can withstand heavy downpours</li> </ul>	SLRA, IFAD, WAAPP
<ul style="list-style-type: none"> <li>Promote quality irrigation systems</li> </ul>	NGO, IFAD
<ul style="list-style-type: none"> <li>Raise Awareness of Climate Change</li> </ul>	SLEPA, MAFFS, WONES
<b>Livestock Sub-Sector</b>	<b>Responsible Implementing Agencies</b>
These would include:	
<ul style="list-style-type: none"> <li>Developing comprehensive grassland policies</li> </ul>	-MAFFS
<ul style="list-style-type: none"> <li>Proper Management of bush fires</li> </ul>	-MAFFS, NGO
<ul style="list-style-type: none"> <li>Rotational grazing management</li> </ul>	-MAFFS
<ul style="list-style-type: none"> <li>Promote fodder banks and initiate research into forage gene banks</li> </ul>	-SLARI
<ul style="list-style-type: none"> <li>Promote effective communication channels between herdsman, local councils, researchers, extension agents</li> </ul>	-MAFFS, local councils
<b>Fisheries Sub-Sector</b>	<b>Responsible Implementing Agencies</b>
Mitigation targets should Include:	
<ul style="list-style-type: none"> <li>Adhering to Kyoto Protocol</li> </ul>	-SLEPA
<ul style="list-style-type: none"> <li>Mangroves should be restored and coral reefs protected which will contribute to carbon dioxide absorption, coastal protection for fisheries</li> </ul>	-Biodiversity and wetland projects funded by the World Bank
<b>Forestry Sub-Sector</b>	<b>Responsible Implementing Agencies</b>
<ul style="list-style-type: none"> <li>Promote the use of renewable energy and improve energy efficiency</li> </ul>	- IACCAPFS
<ul style="list-style-type: none"> <li>Strengthen afforestation policies</li> </ul>	-SLEPA, NPAA
<ul style="list-style-type: none"> <li>Establishment forest reserves, protected areas, National Parks or sanctuaries</li> </ul>	-SLEPA, REDD (Reduce Emission from Deforestation and Degradation)
<ul style="list-style-type: none"> <li>Protect mangrove ecologies</li> </ul>	-Biodiversity and wetland projects funded by World Bank

<b>Water Resource</b>	<b>Responsible Implementing Agencies</b>
<ul style="list-style-type: none"> <li>• Provide farmers with reliable climate information to guide the management of water resources</li> </ul>	Meteorological department, SLEPA, Ministry of Water Resource
<ul style="list-style-type: none"> <li>• Promote water harvesting techniques</li> </ul>	Integrating Adaptation to Climate Change in Agricultural Production and Food Security (IACCAPFS)
<ul style="list-style-type: none"> <li>• Interpret climate risk disasters/water policies</li> </ul>	WPPCU, SLEPA, Ministry of Transport.

## **2.2 Issues raised regarding agricultural climate change adaptation and mitigation, including intersectoral consistency ones**

The following issues seem to be common observations raised or affecting all the agencies in regard to inter-institutional dialogue and inter-sectoral coherence:

- Many people do not believe in climate change or see the importance of climate smart agriculture and there is little infrastructure for the operation of the sectoral programmes;
- Women in Sierra Leone, especially in rural areas are considered the major providers and suffer the most, yet their voices are not heard in the planning, policy formulation, designing, implementation, monitoring and evaluation of environmental issues. Very few women are involved in inter-sectoral committees targeting adaptation and mitigation measures to minimize environmental degradation for climate smart agriculture. This is a problem for sectoral dialogue or inter-institutional coherence;
- Coordination and collaboration among inter-sectoral institutions are minimal;
- Climate change issues are specialized disciplines. In Sierra Leone, there is little or no training for many of the staff in the programmes; as such, dialogue or collaboration is difficult;
- There is low functionality of the programme committees, little or no commitment and less inter-sectoral exchanges, conferences or dialogues;
- Programmes are poorly funded. They lack basic logistics such as communication network or field carbon dioxide detection equipment to measure carbon dioxide in the field;
- There is no enforcement of laws designed to protect the environment from the massive deforestation currently going on for either charcoal or firewood production. It is a sensitive issue even for the sectoral programmes to deliberate for an easy way forward.

## **2.3 Associated needs**

The sectoral programmes have identified potential number of barriers necessary for the smooth operation of the implementation of adaptation options. The following needs are important for effectiveness of dialogues or inter-sectoral coordination.

- Rehabilitation of climate change institutions with needed scientific technology to implement the United Nations Framework Convention on Climate Change (UNFCCC) for adaptation efforts;
- There is limited technology technicians and professionals at the national level in the assessment of adaptation and mitigation options;

- Government policies need to embrace climate change for climate change agriculture. Currently, policies, strategies and regulatory mechanisms have limited or no consideration of climate change issue for climate change agriculture;
- There is need for trained manpower to manage climate change programmes;
- There is need for adequate financial support for collaboration of all the sectoral agencies to jointly undertake nationwide awareness raising;
- Reliable and updated data is necessary for inter-sectoral dialogue and exchanges for action.

## **2.4 Progress observed**

In spite of the many challenges collectively facing the sectoral programmes operating in the country, some mechanisms have been jointly put in place for climate change adaptation and mitigation.

- Raising awareness of climate change involving daily programmes using flyers, brochures, bill boards, televisions, radios that are aired all over the country by SLEPA;
- Improving drainages to control running water during the rains;
- Cajoling/encouraging people to move away from flood/mudslide prone areas;
- Promoting aquaculture;
- Establishment of three national parks – Gola, Olatamba Kilimi, and the Western Area Peninsular;
- Rain water harvesting and small dams for smallholder farmers;
- Establishment of the Climate Change office;
- Carbon credit projects;
- Establishment of National Protected Area Authority;
- Provision of automatic weather stations strategically located across the country;
- Biodiversity and wetland projects;
- Restoring mangrove breeding ground for fish;
- Establishment of a functional network of meteorological and hydrological monitoring;
- Renewable energy from sugarcane for bio-fuel; and solar lights all across the country;
- Establishment of Organic Farmers' Cooperative (OFC);
- Establishment of Early Warning Systems in all districts in the country;
- Multi-stakeholder climate change forum;
- Pilot projects within the NAIP funded through IFAD;
- Inauguration of annual national tree planting day recently passed by the President;
- Projects by the West African Agricultural Productivity Programme (WAAPP) and World Bank in providing cassava graters to assist in converting cassava tubers into the value chain products such as fufu, gari, cassava bread, starch, dry cassava, cassava cake etc. Also rice mills and drying floors and fish smoking are being constructed. All these projects are climate friendly adaptation oriented.

## **2.5 Bottlenecks**

Dialogues and institutional-collaborations are hampered by:

- Lack of commitments by sectoral members and poor attendance at meetings;
- Inadequate collaboration and policy implementation: The different sectoral programmes seem to be working in isolation of each other;
- Lack of funds to finance multimedia awareness programmes;

- Lack of expertise and capacity to interpret climatological models and weather forecasting.

#### **4. Support needs and requests addressed to ECOWAS**

##### **4.1 To mainstream CSA in the NAIP**

In that respect, support is needed at the institutional, technical and financial levels, as well as for monitoring and evaluation, and for mainstreaming climate change in the NAIP.

##### ***Institutional***

- Creating an enabling environment for the activity of the sectoral programmes. At the moment it is very limited;
- No public awareness system or infrastructure has been established for climate change sensitization;
- Systemic capacity for data collection and updating negligible;
- Climate change to be infused into the school curriculum. And like it is done in countries like Kenya, informal climate change schools for CSA need to be set up;

##### ***Technical***

- A national climate change committee or taskforce to be set up by NAPA can be constrained by lack of human resources with the appropriate scientific and technical assistance.
- Limited or non-existent technical infrastructure and depleted expertise are constraints for climate smart agriculture as there is inadequate institutional capacity to manage climate change programmes

##### ***Financial***

There is total reliance on donor financial support and very little support from government. In order for climate change and efforts for adaptation to succeed, there is need for financial support at all levels for the provision of equipment, capacity building, public awareness programmes and logistics.

##### ***Monitoring and Evaluation***

SLEPA is the watch dog of government on environmental matters. SLEPA holds the responsibility to periodically monitor, engage in dialogue with sectoral agencies, mining companies, agricultural companies and other operators involved in large scale land use for purposes of accountability and abiding to regulations contained in their term of reference and according to agreements with government. This is currently being done through conferences, on the spot checks, collection of quantitative and qualitative data, focused group discussions, community interviews, formal questionnaires, informal discussions and other forms of monitoring and evaluation strategies. Data is analyzed and shared by all the agencies. Often strong fines are levied for violating regulations. Companies are also required to rehabilitate and reforest damaged areas as a result of their activities.

### ***Mainstreaming Climate Change in the NAIP***

The government of Sierra Leone in recent past has enacted policies inculcating climate change agriculture into the NAIP. It has implemented a number of policies for climate change mitigation and deforestation reduction. It supports the common African position that global emissions need to be reduced by 40%. It established SLEPA in 2008 with the goal to create and enforce a framework for environmental protection through the development of legislations, regulations and by-laws.

Establishment of a National Secretariat for Climate Change (NSCC) and the REDD programme (Reduce Emission from Deforestation and Degradation) who have pledged to improve forest governance to maintain the proportion of land area covered by forests to at least 3.4 million hectares by 2015. The recent creation of NPAA as an independent entity through an act of the Parliament is further evidence of the government's seriousness with accommodating climate change issues into the NAIP.

## **4.2 To strengthen inter-institutional dialogue and inter-sectorial coherence on CSA**

In that respect, three types of support are needed, related to:

- 1) Advocacy, Mechanisms and Approaches
- 2) Capitalization and Dissemination of Good Practices
- 3) Building Institutional Partnerships and Exchanges Locally and Internationally

### ***Advocacy, Mechanisms and Approaches***

The following targeted advocacy efforts are required and currently being practiced or underway to enhance collaboration of all the agencies involved in climate change issues in the country:

- The development of a national environmental advocacy strategy and implementation plan;
- The mapping of critical stakeholders to target in the advocacy and lobbying activities;
- Planning and conduct of regular engagements with stakeholders;
- Developing commitment charters based on engagement with stakeholders and the actions they are expected to undertake (either as individuals or institutions) in support of environmental protection, preservation and adaptation for climate smart agriculture;
- Production of newsletter highlighting the progress and challenges in the advocacy campaign for good environmental practices;
- Establishing environmental clubs in schools and colleges;
- To advocate and lobby for gender sensitive environmental policies.

### ***Capitalization and Dissemination of Good Practices***

For sectoral programmes to succeed and collaborate with NAPA for effective good practice schemes on environmental protection, the following implementation strategies are imperative or need to be strengthened in the adaptation and mitigation efforts for climate change and CSA. There is need for:

- Joint research into environmental practices in order to build evidence on the state of environmental management within the country.

- Jointly engaging community actors engaged in activities that pose a threat to the environment, and discussing options to positively manage the environment.
- Planning and hosting “Environmental fairs” where citizens will be exposed to sound policies and practices in managing the environment.
- Utilizing local expertise and knowledge to manufacture essential items/products that are environmentally friendly and will generate income for communities.
- Jointly convening annual award ceremonies to recognize and reward citizens as well as non-citizens that are making use of sound environmental policies and practices.
- All the sectoral agencies need to support study tours to places where targeted participants could interact and exchange views on environmental matters as a mechanism to promote learning and sharing of known mitigation and adaptation best practices for climate smart agriculture.
- Jointly undertaking awareness raising programs through such strategies as:
  - o Mounting of signs and billboards in strategic places within provincial locations;
  - o Preparation of flyers and brochures;
  - o Sub-contracting of theatre groups and artists to promote messages and programmes;
  - o Planning and hosting radio and television programmes on women and the environment.

### ***Building Institutional Partnerships and Exchanges Locally and Internationally***

Needs are the following one:

- The building of key national and recognized international actors to work together. Farmers need to be provided with reliable data for the management of scarce resources. The Regional Centre for Agriculture, Hydrology and Meteorology responsible for water monitoring in the Sahelian countries should be encouraged to extend its activities to the other countries in the sub-region;
- In the area of livestock, owners of cattle should adapt proven technologies and grazing management practices developed in similar environments in the West African sub-regions of Ghana and Ivory Coast. Sierra Leone can import resistant crop varieties from other institutions and adapt it to its local conditions. The International Institute of Tropical Agriculture (IITA) in Nigeria or the International Rice Research Institute (IRRI) in the Philippines are viable institutions of repute for collaboration with the Sierra Leone Agricultural Research Institute (SLARI);
- The development and negotiation of Standard Memorandum of Understandings (MOUs) to regulate partnerships and collaborations;
- Hosting regular information, planning and learning sessions for all identified partners;
- Conducting regular round table sessions to discuss emerging issues and trends on the environment and the actions of various stakeholders;
- Undertaking joint research and investigations as well as making joint publications.
- Creating partnerships and working with similar focused organizations as well as relevant national institutions and government to harmonize efforts;

- All sectoral programmes must jointly employ a community driven approach by enlightening women and their communities about environmental issues/climate change and their significance on development in Sierra Leone;
- Sectoral programmes must work to facilitate collaboration among climate institutions, researchers, support services, NGOs, and universities to enable them to work in partnership with farmers, pastoralists, charcoal manufacturers, district and local authorities, fishermen, women, private sector, civil society and all relevant parties to better respond to climate change mitigation and adaptation needs in a holistic manner. This is called “Innovation Platform” approach and it must be a key feature in the climate change efforts.