

LDC Workshop on National Adaptation Programmes of Action

NAPA Case Study 3

Liberia

Summary of Key Vulnerabilities

Liberia has become susceptible to the adverse effects of climate change. Contributing factors include shifting cultivation, unsustainable logging practices, unregulated coastal mining, high levels of biomass consumption(charcoal and fire wood) and decreasing river flows due to high evaporation. Each of these contributing factors is further aggravated by inadequate infrastructure, low levels of social development, population displacement, low institutional capacity, and inadequate meteorological and hydrological data.

Much of the effects of increasing climatic variability and climatic change threaten key economic sectors in Liberia, namely agriculture, fisheries, forestry, energy, health, meteorology/hydrology. Production systems in each of these sectors have already experienced reduced productivity that is linked to changing climatic patterns. Against this background, it is important to emphasize that poverty reduction strategies and other national strategies for economic development do not currently account for climatic risks.

Key Vulnerabilities:

Agriculture, Fishery and Food Security - Degradation of the agricultural lands and the lost of biodiversity, putting small holder households at risk; increased vulnerability of farmers as a result of increasing difficulty to identify optimal planting times for crops, resulting in low yields; rainfall changes resulting in more pests, weeds, and animal diseases in the near-term. In the long-term, these changes are expected to contribute to species extinction, narrowing genetic pool and promote pest development. Absence of an effective early warning system that could allow farmers and other stakeholders to make informed decisions on production strategies;

Wetlands - increasingly stressed through human induced activities;

Fisheries - major aquatic habitats consisting of: sixteen rivers, their tributaries and floodplain systems, as well as coastal habitats and mangrove swamps: combined effect of changing water temperatures and rainfall patterns are adversely affecting fish stock in terms of declining levels of certain species. When combined with the destruction of habitats (wetland or mangrove swamps), the situation becomes even more serious.

Coastal Region - Coastal erosion mainly in low-lying areas such as the urban centers of Robertsport, Monrovia, Buchanan and Cestos. Most vulnerable groups are those living in coastal areas and whose livelihoods consist of fishing, farming and low level trading. They are typically the least able to cope with climate-related shocks due primarily to a combination of extreme poverty levels and household income-generating activities that are highly limited.

NAPA Projects in LIBERIA

Order of Project Priority	Project Title	Project Sector	Sector Component(s)	Project Cost (USD)
1	Integrated cropping/livestock farming: Enhancing resilience to increasing rainfall variability through the diversification of crop cultivation and small ruminants rearing.	Food security	Agriculture and livestock	5,000,000
2	Improved monitoring of climate change: Enhance adaptive capacity through the rebuilding of the national hydrometeorological Monitoring system and improved networking for the measurement of climatic parameters.	Early warning and disaster management	Forecasting system	3,000,000
3	Coastal defense system for the cities of Buchanan and Monrovia: Reducing the vulnerability of coastal urban areas (Monrovia, Buchanan) to erosion, floods, siltation and degraded landscapes.	Coastal/marine ecosystems	Coastal zone management	60,000,000

NAPA Priority Project 1: Integrated Cropping/Livestock Farming

Background

The Liberian economy is dualistic, characterized by a traditional subsistence sector, which engaged in agriculture and a modern sector, mainly export oriented. The traditional sector, although employing over seventy percent of the labor force, contributes less than one-fifth to the GDP.

Justification

Liberia's agriculture is agrarian. The civil war destroyed the agricultural infrastructure and disrupted farming. There was large population displacement, particularly the rural one into IDPs' and refugees' camps. Farms and equipment were abandoned and looted, with livestock either killed or looted by fighters of the civil war. The Central Agriculture Research Institute (CARI), responsible for research activities including the development of germplasm and breeding of animals, was vandalized and destroyed. The Ministry of Agriculture was not spared by the destruction and looting of the civil war. This has created an acute shortage of planting materials and livestock and livestock products in the country. Reviving agriculture to its pre-war levels with emphasis on slash and burn method, will further increase forest cover/vegetation loss, a major contributing factor to climate change in Liberia according to the vulnerability assessment of NAPA.

Integrated cropping and livestock farming is a low cost alternative to increased agricultural productivity and ensuring ecological integrity. This method of farming will further help address the severe food security problem Liberia face which is at crisis proportion in rural areas. With fifty four percent (54%) of the estimated 2.9 million population of Liberia being rural and survive on subsistence agriculture, farming method with such potential is therefore desirable if alleviating poverty and enhancing food security at the local level will be a reality.

Description

Overall Objectives

The primary objective of the project is to reduce vulnerability of farmers to climate change by diversifying crop farming through the cultivation of soybeans, lowland rice and small ruminants rearing.

Goals

The major goals of the project are as follows:

- To reduce to a considerable extent the impacts of extreme effects of weather on farm productivity;
- To encourage and promote the diversification of sustainable agricultural productivity;
- To increase food production level of farm families;

Expected Results

The major results expected from the implementation of the project are as follows:

- Rural communities capacities strengthened;
- Increased in sustainable livestock and crop production;
- Poverty levels at both national and households levels reduced;
- Farmer's income increased due to diversify agricultural production;
- Malnutrition levels amongst rural communities reduced.

Activities

The major activities of the project are as follows:

- Project staff and relevant stakeholders incorporated;
- Identified and recruit extension agents to provide technical backstopping in existing agricultural zones;
- Introduce and popularize lowland farming methods as a way of reducing pressure on forest cover or vegetation;
- Provision of crop varieties and improved breeds of livestock and medication;
- Provision of requisite inputs to enhance project objectives.

Indicators

The major indicators that will be reviewed to assess the efficacy of the project are as follows:

- Considerable number of rural community people experiencing increased agricultural activity;
- Increased number of farmers adopting diversified agricultural production;
- Number of malnourished and under nourished population reduced;
- 1,500 poverty stricken farm families recruited to adopt appropriate technologies in sustainable livestock production.

Risks

There are two major risks associated with the implementation of the project, namely the security situation of the country and the potential non-cooperation of farm families to adopt to the proposed method of farming.

Institutional Arrangement

The key national institutions that would be involved in the process are the Ministry of Agriculture, World Vision-Liberia, and the Sustainable Enterprise Development Foundation.

Duration

The duration of the project is set for twenty-four (24) months.

Cost

A total budget of USD 5 million is needed.

NAPA Priority Project 2: Improved Monitoring of Climate Change

Background

Prior to the war, Liberia had forty-seven hydrometric networks throughout the country to monitor meteorological and hydrological parameters. The civil war (1990-2003) destroyed nearly all of these facilities. From the period of the end of the civil war to the present, the hydrometeorological monitoring capacities remain non-existent and therefore no recorded data for the period mentioned except the Roberts International Airport and Firestone Rubber Plantations Company.

Justification

The annual variability of rainfall experienced in Liberia manifests changes in our weather and thus in our climate. Water resources, agriculture, forestry, aviation, fishery, land transport, etc. are vulnerable to changes and variations in our climate. Henceforth, predicting climate change, including regional aspect of analysis of climate variability constitute the primary in the planning and operational stages in these sectors.

Description

Overall Objectives

The principal objective is to aid national adaptation capabilities through the generation of hydrometeorological data and improved networking for the measurement of climatic parameters.

Goals

The major goals of the project are as follows:

- To make hydro meteorological information timely available to end users;
- To improve informed decision making;
- To enhance effective networking among stakeholders.

Expected Results

The major results expected from the implementation of the project are as follows:

- Availability of hydro meteorological data;
- Strengthened national capability to forecast climatic events thereby reducing level of vulnerability to climate hazards;
- Strengthened coordination among climate related institutions.

Activities

The major activities of the project are as follows:

- Rehabilitate existing hydro meteorological stations;
- Establish hydrometric networks at river basins;
- Acquisition of materials and equipment;
- Conducting training programme for hydrometeorological personnel;
- Provide public awareness.

Indicators

The major indicators that will be reviewed to assess the efficacy of the project are as follows:

- Existing hydro meteorological stations functional;
- Report of Hydro meteorological data;
- Adequate personnel trained;
- General public informed.

Risks

There are two major risks associated with the implementation of the project, namely the security situation of the country and the fulfillment of co-funding commitments.

Institutional Arrangement

The key national institutions that would be involved in the project are the Ministries of Transport, Lands, Mines and Energy and Environment Protection Agency.

Duration

The duration of the project is set for twenty-four (24) months.

Cost

A total budget of USD 3 million is needed.

NAPA Priority Project 3: Coastal Defense System for the Cities of Buchanan and Monrovia

Background

Coastal and marine ecosystems in Liberia have been subjected to rapid deterioration due to a combination of factors including anthropogenic as well as natural. As a consequence, flooding, erosion, siltation of seaports and major water bodies are on the increase. It has affected human settlements and livelihood.

Justification

The coastal ecosystem consists of mangrove related vegetation, which serves as nurseries for fisheries and sanctuaries for many marine reptiles, mammals and migratory birds. Also common in the coastal zone are oil palms, raphia, mango and other fruit and ornamental plants. The areas along the coast where erosion is most severe are Monrovia City, (Bushrod Island), Buchanan and Cestos Cities. The development of seaports and the sand spits along the coast give rise to coastal cities being sand starved. Actions to control beach erosion around seaports and coastal settlements in Liberia are therefore critically important to maintaining their viability as sites for potential tourism, recreation and commercial activities. Initiatives to reverse negative economic and ecological consequences to achieve sustainable use of coastal and marine resources cannot be overemphasized.

Description

Overall Objectives

The main objective is to strengthen national capacities in reducing the incidence of floods, erosion, siltation and degraded landscape in the cities of Monrovia and Buchanan.

Goals

The major goals of the project are as follows:

- To restore and maintain the viability of the coastal areas (Monrovia and Buchanan) as sites for potential tourism, recreation and commercial activities;
- To check the alteration of the natural river systems which is caused by harbor construction in Monrovia and Buchanan;
- To control beach erosion around seaports in Monrovia and Buchanan.

Expected Results

The major results expected from the implementation of the project are as follows:

- Provide immediate shoreline hardening and stabilization techniques to protect the beaches from erosion;
- Increased socio-economic potentials of the coastal areas;
- Improve utilization of coastal resources such as sand and gravels;
- Establish coastal and urban growth planning schemes.

Activities

The major activities of the project are as follows:

- Construction of a Groyne System in Monrovia (Mamba Point, West Point and New Kru Town);
- Construction of Break Water System in Buchanan (Walvis Bay, Robert Street and Port of Buchanan).

Indicators

The major indicators that will be reviewed to assess the efficacy of the project are as follows:

- Coastal Land reclaimed in Monrovia (West Point, New Kru Town and Banjor);
- Coastal Land reclaimed in Buchanan (Walvis Bay, Robert Street and Port of Buchanan);
- Increased protection of coastal infrastructures;
- Threats to human settlements and livelihood reduced.

Risks

There are two major risks associated with the implementation of the project, namely the security situation of the country the fulfillment of co-funding commitments.

Institutional Arrangement: The key national institutions that would be involved in the process are the Climate Change Coordination Unit of the Environmental Protection Agency, the Ministry of Lands, Mines and Energy, the Ministry of Public Works, and the NPA.

Duration

The duration of the project is set for thirty-six (36) months.

Cost

A total budget of USD 60 million is needed.