

9.0 Liberia

EPAL	Environmental Protection Agency of Liberia
GDP	Gross Domestic Product
LDCF	Least Developed Countries Fund
NAPA	National Adaptation Programme of Action
UNDP	United Nations Development Programme

Situated on the Atlantic Coast of West Africa, Liberia is in the process of rebuilding after its 14-year civil war that ended in 2003. With an area of about 111,000 km² (including 579 km of coastline) and a population of around 3.7 million inhabitants (CIA, 2010), Liberia is currently confronted with major infrastructural challenges; most of the country (with the exception of the capital of Monrovia) has been without needed public infrastructure such as roads, electricity, public sanitation or safe water supply since about 1995. Development aid has focused on humanitarian emergencies and is now targeting rehabilitation efforts. The country is also starting to rebuild its economy, including the production and export of products such as raw timber and rubber (CIA, 2010). Agriculture accounts for more than half of Liberia's GDP, and forestry for a further third (EPAL, 2008).

A. Adaptation Needs and Priorities

Although there are no precise projections for temperature and rainfall trends in Liberia, it is expected that climate change will lead to more variable rainfall patterns, shorter and more intense rainy seasons, longer dry seasons, and increased temperatures year-round (LDCF, 2010). As well, a one meter rise in sea level could lead to inundation of about 95 km² of Liberia's coastal area; about half of the land lost would be on the sheltered coast (Wiles, 2005) and would include parts of Monrovia. It is estimated that this process would result in a loss of 250 million (US\$) worth of land and infrastructure (LDCF, 2009) and, through greater flooding and soil salinity, undermine agricultural development in Liberia (LDCF, 2010).

Liberia is already experiencing changes consistent with these expected trends. People are being displaced from Monrovia and Buchanan (important cities for the growth and development of Liberia's economy) due to sea level rise (LDCF, 2009). And agriculture production and farming practices have been negatively affected by reduced soil moisture, greater difficulty in identifying the optimal time to plant crops, and more frequent occurrence of pests, weeds and animal diseases (LDCF, 2010). These changes are occurring within a country already made vulnerable to climate variability by unsustainable logging practices, unregulated coastal mining, high levels of charcoal and fire

wood consumption, and decreasing river flows due to high evaporation (EPAL, 2008). Soil productivity has suffered a marked decrease in some regions, resulting in significantly decreased local incomes (LDCF, 2009).

Liberia has not yet submitted a National Communication but did complete development of its National Adaptation Programme of Action (NAPA) in 2008. This document identifies four key vulnerable sectors—agriculture, public health, fisheries and forestry—and proposed adaptation actions (EPAL, 2008; ALM, undated):

- *Agriculture*: altering the timing of crop cultivation in response to changing patterns of rainfall; inter-cropping, irrigation, and the optimization of lowland/swamp farming practices; pest control including fencing of farms against rodents, bird scarecrows, regular weeding, and the use of high echoing bells; maintaining fast growing nitrogen fixing tree species to improve soil fertility; and using multiple-purpose tree species on farmlands to maintain forest cover;
- *Public health*: identifying and disinfecting stagnant water sources that are breeding grounds for insects; promoting hygiene and sanitation education and awareness, including clinical interventions and community health education programs; and strengthening the roll back malaria program and providing a range of herbal treatments;
- *Fisheries*: reducing the number of fishing licenses issued to foreign vessels; raising the licensing fee for demersal trawlers; regulating fishing practices to prevent overexploitation and fishing in restricted areas; instituting appropriate surveillance of Liberian fishing waters; funding research aimed at fishery-related database development; and formulating a national fishing policy; and
- *Forestry*: although Liberia still has large tracts of forested area that are threatened by a combination of unsustainable practices and a changing climate, it is recommended that no immediate adaptation initiatives be undertaken at the present time apart from increasing climate change awareness and finalizing wetlands legislation then in development.

Instead of a listing a number of small scale adaptation projects, Liberia's NAPA identifies broad national adaptation strategies across a range of rural economic sectors. For example, for the agriculture sector, the NAPA suggests exploring how land use could be diversified through a cycle of crop rotation and livestock production. This is a lower cost approach than the more typical drive for higher crop yields through seed varieties and irrigation (OneWorld, 2010). Liberia's NAPA also cites groups that live in coastal areas and whose livelihoods consist of fishing, farming and low level trading as being particularly vulnerable to the impacts of climate change. According to EPAL (2008), it is these groups for which adaptation should be a priority.

B. National Level Policies and Strategic Documents

Liberia 2008 NAPA recommends that its measures be implemented in connection with the country's Poverty Reduction Strategy¹⁷⁵ and its Roll Back Malaria campaign, among other initiatives. The Liberia's 2008 Poverty Reduction Strategy states that Liberia's Government will work to increase preparedness against natural disasters and emergencies, including climate change risks (IMF, 2008). However, although Liberia has recommended that ideas for climate adaptation be merged into poverty reduction programs already targeting the rural economy, neither the Millennium Development Goals progress report published in 2008 nor the United Nations Development Assistance Framework for 2008-2012 make reference to climate change (OneWorld, 2010).

Table 1: Key Government Policies and Reports reflecting Adaptation Needs, Priorities and Planned Actions

Name of Policy Action		Government Division Responsible	Status	Summary description
1.	National Adaptation Program of Action on Climate Change	Environmental Protection Agency of Liberia	Released in 2008	The NAPA identifies national and regional climate change impacts and climate change adaptation measures to address those impacts. A total of three priority interventions have been identified.
2.	Poverty Reduction Strategy Liberia (IMF, 2008)	Government of Liberia	Released in 2008	Liberia's Poverty Reduction Strategy outlines the steps it plans to promote peace and democracy, revitalize its economy and make progress towards achievement of the Millennium Development Goals. The Strategy identifies actions to reduce vulnerability to the impacts of climate change, such as improve capacity to protect against natural disasters and development of an integrated coastal management plan.

C. Current Adaptation Action

A very low number of adaptation projects are being undertaken in Liberia under the guidance of international organizations. The projects listed in Table 2 are currently underway and focus on agriculture, coastal zones and institutional strengthening of the government. Both of the country's large national projects have been funded through the Least Developed Countries Fund (LDCF). No projects targeting Liberia's public health sector have been encountered.

¹⁷⁵ <http://imf.org/external/pubs/ft/scr/2008/cr08219.pdf>

Table 2: Current Adaptation Actions in Liberia

Name	Objectives	Funder(s)	Implementing Agency(s)	Project type	Duration	Focus Area(s)	Geographic focus (if any)
National Actions							
1.	Strengthening Local Community Capacity to Combat Climate Change and Biodiversity Loss in the Lake Piso Region ¹⁷⁶	UNDP-GEF Small Grants Program Budget: US\$8,000	Farmers Associated to Conserve the Environment	Community-based Adaptation; Capacity building	2010 – 2011	Forestry; Biodiversity	Lake Piso Basin
2.	Enhancing Resilience of Vulnerable Coastal Areas to Climate Change Risks ¹⁷⁷	LDCF	UNDP	Capacity building; Assessment; Community based adaptation	2010 – 2014	Coastal zone management	National
3.	Enhancing Resilience to Climate Change by Mainstreaming Adaption Concerns into Agricultural Sector Development in Liberia ¹⁷⁸	LDCF	UNDP	Capacity building; Assessment	2011 – 2015	Agriculture	National

¹⁷⁶ UNDP-GEF,

http://sgp.undp.org/web/projects/16140/strengthening_local_community_capacity_to_combat_climate_change_and_biodiversity_loss_in_the_lake_pi.html

¹⁷⁷ ALM, <http://www.adaptationlearning.net/project/enhancing-resilience-vulnerable-coastal-areas-climate-change-risks>

¹⁷⁸ ALM, <http://www.adaptationlearning.net/project/enhancing-resilience-climate-change-mainstreaming-adaption-concerns-agricultural-sector-deve>

		project responds to the objectives of the first of Liberia’s NAPA project.						
Participation in Regional and Global Actions								
4.	Capacity Development for Policy Makers: Addressing climate change in key sectors ¹⁷⁹	The project is a targeted capacity development initiative that supports two goals: 1. To increase national capacity to co-ordinate Ministerial views for more effective participation in the UNFCCC process; and 2. To assess investment and financial flows to address climate change for selected key sectors. As a result of this project, both the technical understanding of key climate change issues and their economic and policy implications within the context of the Convention will be enhanced.	United Nations Foundation; Switzerland; Finland; Spain; and Norway <i>Budget:</i> US\$6,953,413	UNDP	Capacity building; Policy formation and integration; Knowledge communication	2008 – 2010	Government	<i>Global:</i> 19 countries, ¹⁸⁰ including Liberia, Niger and Togo
			<i>In Liberia:</i> Liberia will focus on the key sectors of energy (mitigation), forestry (mitigation), and agriculture (adaptation). ¹⁸¹					

D. Proposed Adaptation Action

Within its NAPA, Liberia identified three priority actions. Two of these actions—“Integrated Cropping/Livestock Farming” and “Coastal Defence System for the Cities of Buchanan and Monrovia”¹⁸²—are currently being at least partially implementation by UNDP with financing from the LDCF (see Table 2). These two projects target a large part of the country’s agriculture and coastal sectors. As a result, only one of the projects proposed by Liberia in its NAPA remains unfunded: “Improved Monitoring of Climate Change.”

¹⁷⁹ UNDP, <http://www.undp.org/climatechange/capacity-development.html>

¹⁸⁰ These countries are: Algeria, Bangladesh, Colombia, Costa Rica, Dominican Republic, Ecuador, Gambia, Honduras, Liberia, Namibia, Nepal, Nicaragua, Niger, Paraguay, Peru, St. Lucia, Togo, Turkmenistan, and Uruguay.

¹⁸¹ UNDP-CC, <http://www.undpcc.org/content/liberia-en.aspx>

¹⁸² For coastline protection, the NAPA proposes a full-scale programme of sea defences for the urban regions of Monrovia and Buchanan. This action is priced at \$60 million—very ambitious in scale for a project within the NAPA template. As such, the objectives of this NAPA project are only being partially achieved through the LDCF funded initiative (One World, 2010c).

Table 3: Priority projects identified in Liberia’s NAPA (EPAL, 2008)

Name		Objectives	Project type	Priority Sector(s)	Geographic focus (if any)
1.	Improved Monitoring of Climate Change	The principal objective of this project is to enhance adaptive capacity by rebuilding the national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters.	Field implementation	Climate information services	National

E. Assessment

Based upon the outcomes of its NAPA process, Liberia has been actively seeking ways to mainstream adaptation to climate change in to its development process, such as by inclusion of climate vulnerability considerations in its sectoral and development policies (as outlined in section B). If successful, this process could incentivize implementation of development projects that provide adaptation benefits while also contributing to the realization of Liberia’s development objectives as outline in its National Environmental Policy, the National Reconstruction Development Plan and commitments under its Millennium Development Goals. The objectives of these strategies include: maintaining forest cover of 3.4 million hectares through 2015; increasing the percentage of population with sustained access to improved water sources from 26 to 63 per cent by 2015; and increasing the percentage of people with access to improved sanitation from 26 to 68 per cent by 2015 (EPAL, 2008).

The absence of climate projections in Liberia inhibits its capacity to engage in adaptation planning. Some projections have been made for coastal areas regarding sea level rise but no precise projections for rainfall and temperature patterns are available. Realization of the NAPA project, “Improved Monitoring of Climate Change,” may remedy to the situation by rebuilding the national hydro-meteorological monitoring system and improving the networking system for the measurement of climatic parameters. According to OneWorld (2010), adaptation of the farming and forestry sectors to climate change will be constrained until this core service is restored.

It is interesting to note that although identified as a key vulnerable sector in its NAPA, no projects in the health sector have been proposed or are underway. Liberia’s NAPA recommends that health related actions be implemented in connection with the Roll Back Malaria program, but the extent to which this is actually taking place is not clear. As well, there are no projects for the fishery sector even though it and the communities whose livelihoods depend on fishing have been identified as priorities. Further gaps exist in the areas of forestry, fisheries and gender.

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