Liberia's National Adaptation Plan

Stocktaking report and preliminary road map for advancing Liberia's NAP process

EPA LIBERIA
Environmental Protection Agency
Protecting Liberia's Environment for futureLiberian's

UNDP
Empowered lives.
Resilient nations.

NAP-GSP
NATIONAL ADAPTATION PLAN GLOBAL SUPPORT PROGRAMME

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Acronyms and Abbreviations

AfDB	African Development Bank
AFT	Agenda for Transformation
AMCEN	African Ministers Conference on the Environment
AU	African Union
BFP	Budget Framework Paper
BOP	Budget Option paper
BPN	Budget Policy Notes
CARI	Central Agricultural Research Institute
CC	Climate Change
CCA	Climate Change Adaptation
CCAP	Climate Change Action Plan
CIRDev/EWS	Climate Information for Resilient Development/Early Warning System
CSOs	Civil Society Organizations
COP	Conference of the Parties
ECOWAS	Economic Community of West African States
EPA	Environmental Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FDA	Forestry Development Authority
FCPF	Forest Carbon Partnership Fund
FFI	Fauna and Flora International
GEF	Global Environment Facility
GHG	Greenhouse gas
HIV	Human Immunodeficiency Virus
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IPCC	International Panel on Climate Change
LDCs	Least Developed Countries
LDCF	Least Developed Countries Fund
LEG	Least Developed Countries Expert Group
LINGO	Liberia's International Non-Governmental Organization Forum
LMA	Liberia Maritime Authority
LINA	Liberia News Agency
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LWSC	Liberia Water and Sewage Corporation
MACs	Ministries, Agencies & Commissions
MFDP	Ministry of Finance & Development Planning
MGCSP	Ministry of Gender, Children and Social Protection
MIA	Ministry of Internal Affairs
MICAT	Ministry of Information, Cultural Affairs and Tourism
MLME	Ministry of Land, Mines and Energy
MoA	Ministry of Agriculture
MHSW	Ministry of Health and Social Welfare
MoT	Ministry of Transport
MPEA	Minister of Planning and Economic Affairs
MPW	Ministry of Public Works
MRU	The Mano River Union
M&E	Monitoring and Evaluation
NARC	National Disaster Management Commission (within Ministry of Internal Affairs)
NAP	National Adaptation Plan
NAP-GSP	National Adaptation Plan – Global Support Programme (UNDP-UNEP)
NAPA	National Adaptation Programme of Action to Climate Change
NCCS	National Climate Change Secretariat
NCCSC	National Climate Change Steering Committee

NDRR	Natural Disaster Risk Reduction
NEP	National Energy Policy
NGO	Non-governmental Organization
NOCAL	National Oil Company of Liberia
NPA	National Port Authority of Liberia
NTPS	National Transport Policy Strategy
PIF	Project Identification Form
RREA	Rural Renewable Energy Agency
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SNAP	Stocktaking of National Adaptation Plan
SWG	Sector Working Group
SWOT	Strengths, Weaknesses, Opportunities, Threats Analysis
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development

Acknowledgments

The write up of this report benefited greatly from the insights and support of the participants of the NAP Workshop in Buchanan City between May 13 and 15, 2015. Benjamin S. Karmorh Jr. and Jeremiah Sokan from the Environmental Protection Agency of Liberia for their organizational support during the workshop. Zhe Yuan and Margherita Maiello provided suggestions on the draft report.

Executive Summary

The Environmental Protection Agency (EPA) of the Government of Liberia (GoL) requested support from UNDP to conduct a workshop to start their National Adaptation Plan (NAP) process. The workshop would provide with entry points for the GoL to institutionalize Liberia's National Adaptation Plan (NAP) process. In response, the UNDP led Global Support Programme on NAPs[1] (NAP-GSP) agreed to support the Government to facilitate the startup of the NAP process in Liberia and conduct the workshop and stocktaking of Liberia's activities relevant to the NAP process.

The main results from the NAP workshop and its stocktaking exercise were as follows:

- Climate Information. There is limited scientific data and information on climate impacts, without a climate projection plan. There is limited knowledge of current climate variability and no early warning system data. There is a need to develop and disseminate a set of standard scenarios for Liberia. There is also limited information on vulnerability studies.
- There is a Global Environmental Facility (GEF) project "*Strengthening Liberia's Capability to Provide Climate Information and Services to Enhance Climate Resilient Development and Adaptation to Climate Change*" which will provide the equipment and coverage to generate the necessary climate data that can be used to support the NAP process. However, this will not be fully implemented until 2017. The project has been CEO Endorsed under the GEF, with EPA and the Ministry of Transport (MoT) as executing agencies and UNDP as GEF Agency.
- Human and Institutional Capacities. There is an inadequate level of technical knowledge on adaptation to climate change of staff of sectoral ministries. The Climate Change Secretariat does not have adequate staff competency. It was identified that the relevant ministries do not have the experts and technicians, and there is limited training on climate change issues. Related to climate services, there is limited capacity to monitor, forecast, archive, analyze and communicate hydro-meteorological and climate change information.
- Long Term Vision and Mandate. There is no coherent existing national plan or strategy on climate change adaptation. There is a lack of planning for future climate change impacts. There are plans/strategies that are not harmonized with each other, such as the National Disaster Relief Plan and the National Climate Framework. The institutional arrangements in place that can sustain the NAP process in the long term do not have adequate financial and technical support. The EPA is in charge of coordinating and implementation of the national climate change agenda. The National Climate Change Secretariat (NCCS), the operational arm of the National Climate Change Steering Committee (NCCSC), is weak and not working properly.
- Implementation. The National Adaptation Programme of Action (NAPA) (EPA, 2008) represents the first systematic adaptation actions taken in Liberia with a focus on coastal defense and agriculture. The coastal defense pilot project is led by the Ministry of Land, Mines and Energy (MLME). The agriculture pilot project (with a focus on a small number of counties) is led by the Ministry of Agriculture (MoA). The Climate Information for Resilient Development/Early Warning System (CIRDev/EWS) Project is executed by the MoT. Although these advances, the volume of existing adaptation projects is limited to the NAPA pilot program, and have a limited intervention (e.g. working in 600 meters of coastal line in Buchanan), and are inadequate in terms of the needs in Liberia. There is also limited capacity for implementation.
- It is expected that the NAP will build on the experience on the NAPA, scaling up the pilot projects on coastal defense and agriculture, and including additional sectors such as energy, forestry, waste management & health. However, there are data and capacity limitations to assess and prioritize adaptation options in these new areas.
- Mainstreaming. Climate change has been integrated into the national development document, the Agenda for Transformation (AFT) 2030, in a limited way. In the AFT, climate change is included in Pillar V, Cross-cutting Issues, as part of Environment, and among other issues such as HIV/AIDS, Human Rights and Labor and Employment. The general view of the workshop participants was as the AFT will probably not be reviewed until a new Government comes in 2017, it will not until then that there is an opportunity to better integrate climate change into the national development agenda. As for sectoral development documents, climate change is only identified in the Food and Agriculture Policy and Strategy (2008) of the

[1] Financed by the Global Environment Facility (GEF) Least Developed Countries Fund (LDCF).

Ministry of Agriculture where there is a focus on food security, sustainable agriculture and climate change resilience. As for other sectors, there is no integration of climate change in the development planning and implementation processes. There is lack of capacity of sectoral ministries to integrate adaptation into their strategies.

- Participation. There is limited stakeholder participation in national planning for adaptation. However, there are opportunities to use the current processes to integrate adaptation into national planning, as there are many national policies that go through consultation processes (e.g. National Development Agenda).

Under this local context, the GoL drafted a Road Map to address these issues under the NAP. The road map, foresees short term, medium term and long-term activities that account for political, organizational and operational factors and issues. This road map followed the main objectives of a NAP process as suggested by the United Nations Framework Convention on Climate Change (UNFCCC) and Least Developed Countries Expert Group (LEG) Technical Guidelines, including to take a medium- and long-term approach to reducing vulnerability to the adverse effects of climate change and to facilitate the integration of climate change adaptation (CCA), in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

The road map has several short-term activities (1-6 months) that may be conducted by the GoL independently and takes advantage of the NAP Workshop momentum. It is recommended that EPA leads these short term activities, with the participation of the other relevant Ministries and stakeholders identified during the workshop.

Introduction

The Government of Liberia (GoL) through the Environmental Protection Agency (EPA) requested support from the United Nations Development Programme (UNDP) to conduct a workshop to startup their National Adaptation Plan (NAP) process.[2] The workshop would identify entry points for the GoL to institutionalize Liberia's NAP process. In response, a NAP workshop and stocktaking exercise was held in Buchanan at the Bassa Women Development Association Training Center between Wednesday May 13 and Friday May 15.

A total of 40-50 representatives of various institutions participated in the workshop. The agencies and organizations represented at the workshop included the EPA and the National Climate Change Secretariat (NCCS), Ministry of Finance & Development Planning (MFDP), Ministry of Land, Mines and Energy (MLME), Ministry of Agriculture (MoA), National Disaster Management Commission of the Ministry of Internal Affairs (NARC-MIA), Ministry of Gender, Children and Social Protection (MGCSP), Ministry of Public Works (MPW), Ministry of Transport (MoT), Liberia Water and Sewage Corporation (LWSC), Liberia Maritime Authority (LMA), Land Commission, National Port Authority (NPA), Liberia News Agency (LINA) and the UNDP country office.

The goal of the workshop was to identify the necessary steps to start Liberia's NAP process through multi-stakeholders' engagement. The specific objectives of the workshop included:

- Enhance understanding of the NAP process with key stakeholders in the GoL according to UNFCCC/LEG Technical Guidelines;
- Discuss lessons learnt from ongoing climate mainstreaming and relevant initiatives, such as the National Adaptation Programme of Action to Climate Change (NAPA);
- Discuss the potential entry point for the NAP process in Liberia taking into account the political economy, including existing policies/ planning/strategic/budgeting processes and related projects and programmes;
- Identify specific technical and institutional needs and priorities to support the integration of medium and long-term climate change adaptation into existing national and sub-national planning processes;
- Draft a road map to advance the NAP process;
- Establish a framework for drafting a Project Identification Form (PIF) to support the NAP preparation.

The result of the workshop and UNDP mission was a draft roadmap to operationalize the NAP process in Liberia. The roadmap was elaborated by the participants of the workshop and validated through integrative discussions with all relevant actors for the NAP process present at the workshop. The road map, foresees short term (1-12 months), medium term (1-2 years) and long-term (2+ years) activities that account for political, organizational and operational factors and issues.

Overview of National Adaptation Plan (NAP) process

The National Adaptation Plan (NAP) process was established in 2010 as part of the Cancun Adaptation Framework to complement the existing short-term orientated, "urgent and immediate" focused, National Adaptation Programmes of Action (NAPAs). The NAP process is to support all developing countries, especially the least developed countries (LDCs), in meeting their medium- and long-term adaptation needs. The NAP process is meant to play a critical role in reducing vulnerability and, building adaptive capacity by mainstreaming adaptation into all sector-specific and national development planning. The Least Developed Countries Expert Group (LEG) has published the NAP Technical Guidelines to help countries put in place a system to implement their NAP process.

The main objectives of a NAP process according to UNFCCC and LEG Technical Guidelines are:

[2] In April 2014, the GoL sent a delegation to the NAP-GSP Africa Regional Training Workshop in Addis Ababa, Ethiopia, on Element A – Lay the groundwork and address gaps. During the workshop, they presented their experience on adaptation in the agricultural sector

- To take a medium- and long-term approach to reducing vulnerability to the adverse effects of climate change.
- To facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

Added value of a NAP process to Liberia

As suggested by the UNFCCC and the Technical Guidelines provided by the LEG, there are some characteristics that the NAP process in any country should fulfil.

The NAP process should:

- Follow a country-driven fully transparent approach;
- Be based and guided by the best available science and, as appropriate, traditional and indigenous knowledge;
- Not be prescriptive, nor result in the duplication of efforts undertaken in-country, but rather facilitate country-owned, country-driven action.

The National Adaptation Plan (NAP) process for Liberia seeks to build upon the foundation laid by the experience from the NAPA, to scale up the programmes under that initiative and expand into new areas. Thus, the NAP process can add value by identifying gaps and areas for greater strengthening, and tap opportunities for more effective climate responsive planning and budgeting.

Analyzing the NAP-relevant setting, processes and actors in Liberia

a. Vulnerability to Climate Change in Liberia

Liberia, like other developing countries, especially Least Developed Countries (LDCs), is vulnerable to the impacts of climate change. While Liberia has a low carbon footprint, the impact and effects of climate change may have severe consequences in multiple sectors and areas. According to USAID (2013), expected changes in temperature and precipitation by 2050 and 2080 for most of the country, including Monrovia, are of warmer and wetter climate. The most conservative estimates have Monrovia warming by an estimated average of 1.3°C by 2050 and 1.90°C by 2080. These changes in temperature and precipitation may affect several sectors and areas across Liberia, including agriculture, fisheries, forests, energy production related to the availability of water resources, coastal areas and health. Some of these cases are presented next:

- **Agriculture, Fisheries and Forests**. In Liberia, as much as 70% of the population depends on agriculture for their livelihoods; rural areas, which are as much as 80% vulnerable to food insecurity (EPA, 2013) depend mainly on production of rice and cassava, with bush meat and fish being the main sources of protein. Climate projections suggest that higher temperatures, even with adequate precipitation, will negatively impact rice. Upland rice, the predominant cropping system, will be impacted by changes in seasonality of precipitation. Cassava is a more resilient crop, adapted to high temperatures, drought and erratic rainfall. Geographically, agricultural production in the counties of Bong, Lofa, and Nimba will most likely be affected due to climate change (USAID, 2013). Fisheries will also be affected by climate change due to the increase in sea temperature, and will depend on the type of ecosystem and fishery. Changes in precipitation and evapotranspiration could also affect inland waters. Climate change will impact tropical **forests** due to changes in aridity. Some projections to 2050 indicate that forests in eastern Liberia are the most likely to be impacted due to drier climate.

- **Coastal Areas**. The 350 miles of coastal land areas in Liberia are very much populated and can easily be affected by climate change. The combined effects of ongoing coastal erosion, climate change induced sea level rise, change in the frequency and intensity of storms, increases in precipitation and warmer ocean temperatures can affect coastal areas. According to USAID (2013), with an increase of 1m in sea level, about 50% (48 km^2) of the total land loss due to inundation will be the sheltered coast. Parts of Monrovia (Hotel Africa areas and Bushrod Island), West Point, New Kru Town, River Cess, Buchanan, and Robertsport would be greatly affected as they are less than 1m above sea level.

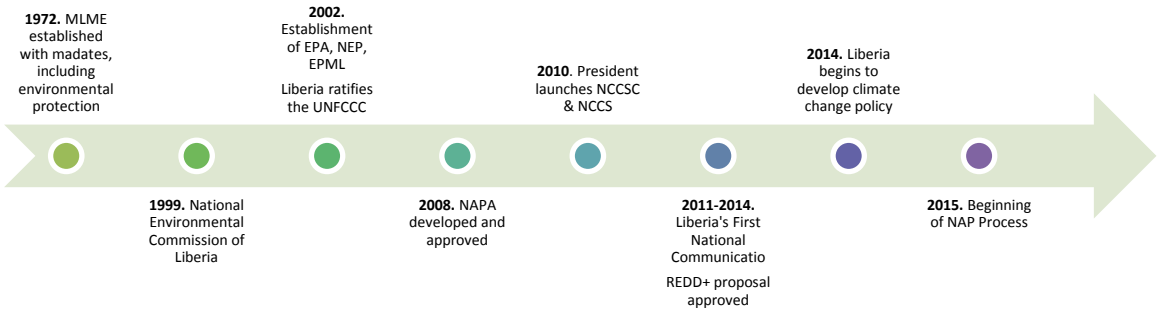
- **Health.** For Liberia, the experience of the Ebola outbreak is still very fresh. This event uncovered the deficiencies of Liberia's health system and the need for improvement. On the other hand, many diseases, such as malaria and dengue, are linked to climatic variations. According to Liberia's Initial National Communication (2013), changes in rainfall will lead to increased vulnerability to malaria, cholera and diarrheal diseases, as well as increased incidences of Lassa fever, schistosomiasis, lymphatic filariasis, yellow fever, hepatitis A, and intestinal worms. The incidence geographic area of dengue fever could affect Liberia, as it may expand from neighboring Côte d'Ivoire.

- **Energy and Water Resources.** It is expected that the water flow in the St. Paul River Basin will be reduced by 0.7%–25% in the 2020s, which will likely reduce hydroelectricity production from the Mount Coffee hydropower plant located in the basin (Liberia Initial National Communication, 2013). At the same time, water supply to Monrovia, the capital city, could also be affected.

b. Policy and planning entry points for Climate Change Adaptation

Figure 1 shows the evolution of environmental and climate change policy in Liberia from 1972 and 2015. As with other countries in the region, climate change policy is fairly recent, with the establishment of the governing structures around the last decade. The EPA, the National Energy Policy (NEP) and the Environmental Protection and Management (EPML) Act were established in 2002. The first action directly related to climate change was the National Adaptation Programme of Action (NAPA), which was launched in 2008 (EPA, 2008). Later, in 2010, the President of Liberia launched the National Climate Change Steering Committee (NCCSC) and the National Climate Change Secretariat (NCCS). In 2012, Liberia presented its first National Communication and in 2014, Liberia began the development of its climate change policy.

Figure 1: Environment and Climate Change Policy Process in Liberia, 1972-2015



National Planning Framework: Climate change has been integrated into the national development document, the 2012-2017 Agenda for Transformation (AFT) 2030, in a limited way. In the AFT, climate change is included in Pillar V, Cross-cutting Issues, as part of Environment, and among other issues such as HIV/AIDS, Human Rights and Labor and Employment. As there will be a change in Government in 2017, there is an opportunity to better integrate climate change into the national development agenda. The next National Planning exercise 2017-2022 may offer a new opportunity to mainstream climate change into the National Planning and budgeting framework.

During the NAP process, between 2015 and 2017, it is expected that climate change will be included in the budget policy, a process that will require the coordination between MFDP and EPA. Table 1 shows the national budgeting process in Liberia. It is expected that climate change should be introduced during the first stages of phase I, supported by the timely appraisal of individual adaptation options for each sector, through sector working groups (SWG).

To reach this stage, in is important that the identification, categorization and appraisal of adaptation options has taken place, including economic, ecosystem and social costs and benefits and possibilities for possible positive and negative impacts from adaptation measures. Some of the challenges include: a) lack of data and

information to support the categorization and appraisal of adaptation options; and b) Limited coordination among relevant ministries to include climate change adaptation options (and associated funding).

Table 1: National Budgeting Process Steps in Liberia

STAGES	OBJECTIVE
Phase I	
1. Establishment of Sector Working Group (SWG)	Launch the SWG, set meeting schedules and venues
2. Conduct revenue estimation and project costing	MFDP to provide revenue estimate based on forecast report
3. Draft Budget Option paper (BOP) for cabinet	Priority setting and agreement, with associated costing
4. Budget call Circular1 drafted	Inclusion of all necessary adjustments from Cabinet
5. Ministries, Agencies & Commissions (MACs) prepares Budget Policy Notes (BPN)	MACs will draft projects and recurrent activities based on approval from Cabinet
6. Cabinet Approve draft Budget Framework Paper (BFP)	Drafted budget framework for cabinet approval
7. Presentation of BPN to Legislature	Cabinet approved BPN sent to Legislature
Phase II	
8. Budget Call Circular 2	Will constitute the adjusted projects and recurrent activities
9. Spending Agencies submit detailed budget	Detailed budget submitted by MACs
10. Budget hearing by MFDP	Justify the need for increment or otherwise
11. Legislature reviews budget thru hearings	Hearing of all spending MACs by the legislature

Source: MFDP presentation at NAP workshop, May 2015

Sector strategies

Table 2 shows the policies, strategies and laws that support climate change policy in Liberia, for both mitigation and adaptation. The table shows that for sectoral development documents, climate change is only identified in the Food and Agriculture Policy and Strategy (2008) of the Ministry of Agriculture where there is a focus on food security, sustainable agriculture and climate change resilience. As for other sectors, there is no integration of climate change in the development planning and implementation processes. There is lack of technical capacity of sectoral ministries to integrate adaptation into their strategies.

Table 2: Precursors to Climate Change Strategies/Policies National Instruments

Policy/Strategy/ Law	Endorsement / Approval date	Ministry / Agency	Sectorial Focus
Environmental Protection and Management (EPML) Act	**2002**	EPA	Environment protection, biodiversity conservation, low emission, etc.
Forestry Reforms Law (2006)	**2006**	FDA	Forestry, sustainable livelihood
National Adaptation Programme of Action (NAPA)	**2008**	EPA, MLME, MoA	Environment, Agriculture, Coastal defense
National Energy Policy (NEP)	**2009**	MLME	Accessible and sustainable energy, low emission
REDD+ Readiness Preparation proposal for support of the FCPF	**2011**	FDA, EPA	Carbon sequestration, reforestation and avoided deforestation, sustainable livelihood
First National Communication	**2013**	EPA	Emission tracking, climate change vulnerability and adaptation
Petroleum Law 2013	**2015**	NOCAL	Petroleum exploration and production, energy use, environmental protection
Food and Agriculture Policy and Strategy	**2008**	MoA	Food security, sustainable agriculture, climate change resilience, etc.
Renewable Energy and Energy Efficiency Policy and Action Plan of Liberia	**2006**	RREA, MLME	Renewable energy, affordable and suitable energy, low emission
National Transport Policy Strategy (NTPS)	**2009**	MoT	Efficient and affordable transport, low emissions

Source: EPA presentation at NAP Workshop, May 2015

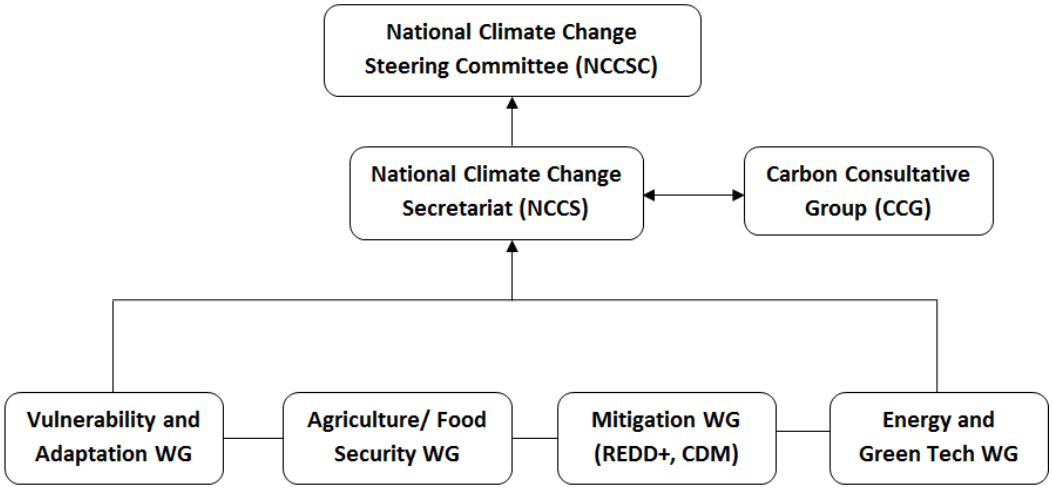
c. Institutional Mechanisms: National Climate Change Secretariat (NCCS)

The National Climate Change Secretariat (NCCS), is the operational arm of the National Climate Change Steering Committee (NCCSC). For the past several years, the NCCS and NCCSC were not operative due to lack of funding to support staff and operations. This situation changed in 2014 through the National Adaption Plan for Action framework under the UNFCCC platform. Under that, the need to re-activate the NCCS and NCCSC was stressed and catalytic funding from the GEF/LDCF/UNDP projects was allotted to jumpstart the NCCS. The NCCS was re-activated in September 2014 and operational since October, 2014; and is currently housed at the EPA.

Under the current structure, the chairman of the NCCS was the Minister of Planning and Economic Affairs (MPEA), with members including MLME, MoA, MoF, Ministry of Gender and Development, Forestry Development Authority (FDA), EPA, National Investment Commission, Liberia Maritime Authority, MIA, World Bank, University of Liberia and Fauna & Flora International (FFI).

Under a new proposed structure, the Office of the President or Office of the Vice President would be the Chairman, with the MFDP and the EPA as Co-Chairmans. Members of the NCCS would include MoA, MGCSP, FDA, MLME, National Investment Commission, LMA, MIA, World Bank, UNDP, Association of Liberian Universities, Ministry of Foreign Affairs, a Civil Society Organization and FFI. The new structure will have an organizational structure as presented in Figure 2: Organization of National Climate Change Secretariat (NCCS)Figure 2.

Figure 2: Organization of National Climate Change Secretariat (NCCS)



d. Existing Climate Change Adaptation and Mitigation Initiatives of Relevance to NAP

NAPA. The National Adaptation Programme of Action (NAPA) (EPA, 2008) represents the first climate change initiative and the first set of systematic adaptation actions taken in Liberia with a focus on three areas: 1) Coastal defense, led by the MLME; 2) Integrated cropping/livestock farming (with a focus on a small number of counties) led by the MoA; and 3) Climate Information for Resilient Development/Early Warning System (CIRDev/EWS) Project, executed by the MoT. Please see Annex 1 for more details.

The **Coastal Defense** project, called "Enhancing Resilience of Vulnerable Coastal Areas to Climate Change Risks in Liberia" has the objective to reduce the incidence of floods, erosion, siltation and degraded landscape. The project covers areas of Monrovia, Buchanan and Robertsports. It started on 2012 for a period of 3 years and a cost of USD 60 million. The expected results of the project are to protect beaches from erosion, increase socio-economic potential of the affected areas, improve the use of coastal resources and established urban growth planning schemes.

The **Climate Change Adaptation Agriculture** Project has the objective to reduce vulnerability of farmers to climate change by diversifying crop farming through the cultivation of soybeans, lowland rice and small ruminants rearing. It is for 2 years at a cost of USD 5 million. The expected results are to strengthen the capacities of rural communities, increase the sustainability of livestock and crop production and reduce the poverty levels of affected communities.

The **Climate Information for Resilient Development/Early Warning System** (CIRDev/EWS) Project has the objective to generate hydrometeorological data and improved networking for the measurement of climatic parameters. The project started in 2013 for 2 years at a cost of USD 3 million. The expected results are to increase the availability of hydrometeorological data, strengthened the national capability to forecast climatic events thereby reducing level of vulnerability to climate hazards and to strengthen the coordination among climate related institutions.

There is a Global Environmental Facility (GEF) project "*Strengthening Liberia's Capability to Provide Climate Information and Services to Enhance Climate Resilient Development and Adaptation to Climate Change*" which will provide the equipment and coverage to generate the necessary climate data that can be used to support the NAP process. However, this will not be fully implemented until 2017. The project has been CEO Endorsed, with EPA and MoT as executing agencies and UNDP as GEF Agency.

It is expected that the NAP will build on the experience on the NAPA, scaling up the pilot projects on adaptation activities, and including additional sectors such as energy, forestry and waste management & health to address medium and long-term adaptation priorities. However, there are technical limitations to assess and prioritize adaptation options in these new areas. There is also the need to mainstream these adaptation initiatives into national development plans and policies and include climate change finance into national budget.

National Communication to UNFCCC: Liberia provided its Initial National Communication to the UNFCCC in 2013. The document presents the national greenhouse gas (GHG) inventory, and assessments for GHG mitigation, climate change and vulnerability and technology and technology transfer.

REDD+: In 2011, Liberia finished it's the REDD+ readiness preparation proposal from the Forest Carbon Partnership Fund (FCPF).

Priority Sectors for NAP. Priority sectors have been identified for the NAP process. These are: a) Costal development and management; b) Agriculture; c) Energy (hydropower); d) Forest (landscape management for climate resilience); e) Health and waste management. Some of these sectors such as coastal management and agriculture are a continuation of the NAPA, where the objective is to scale up the current NAPA pilot projects.

e. Stakeholder Mapping

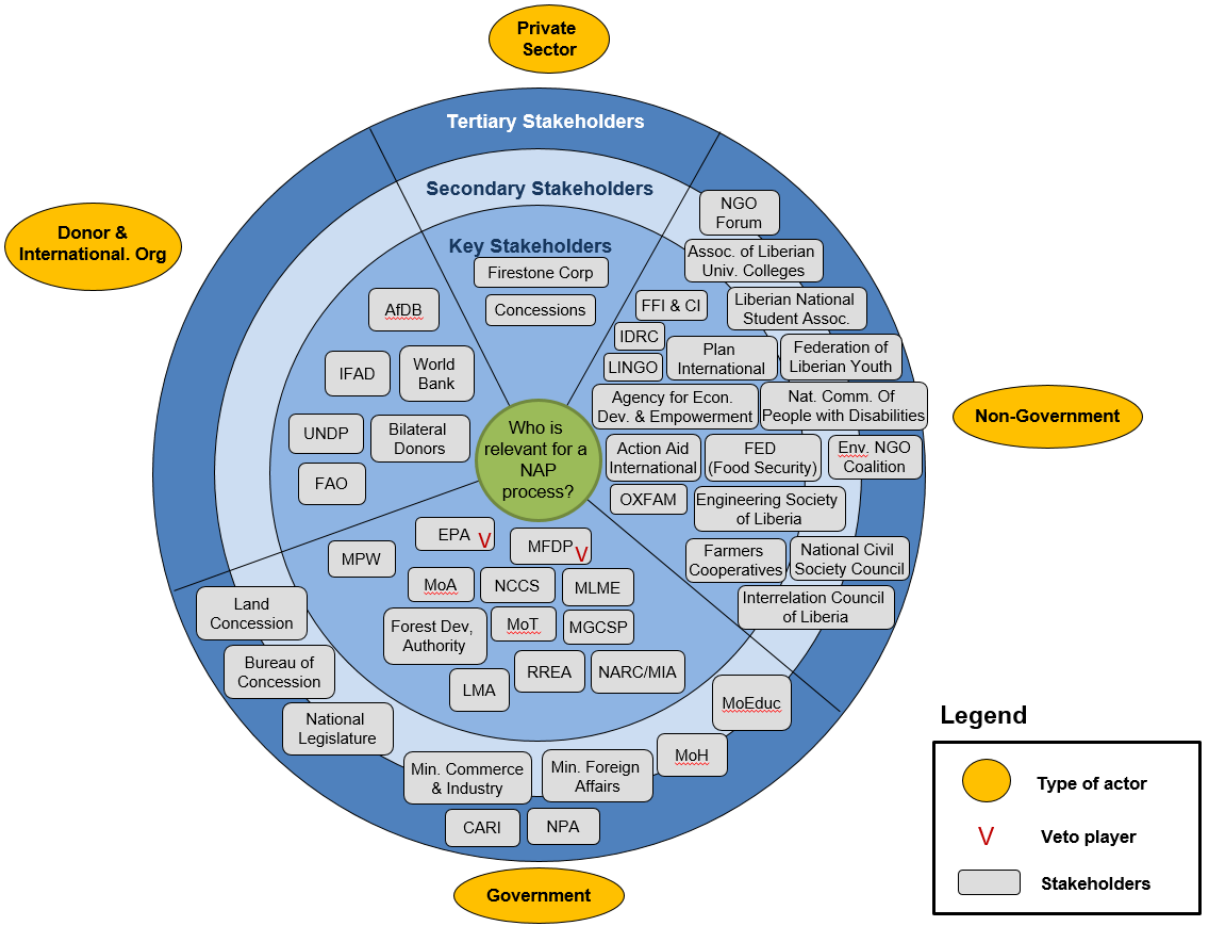
For an overview of the different actors relevant for the NAP process, a stakeholder mapping was conducted during the workshop through interactive participation with the workshop participants (see Figure 3). The mapping is divided into four types of actors that are highly relevant for a successful NAP process: (i) Government institutions, (ii) Non-Government organizations, (iii) private sector, and (iv) donors and international organizations. The mapping shows the most important institutions and actors for the NAP process towards the center, and the least important actors and stakeholders towards there periphery. Some actors have been identified as veto players, namely those institutions or agencies from which the NAP process may depend greatly, and where without them, the process would fail.

The most important **government institutions** include the EPA, NCCS, MoA, MLME, MoT, MPW, MIA, MGCSP, Forest Development Authority and RREA. Other government institutions include the Ministry of Education, Ministry of Information, Cultural Affairs and Tourism (MICAT), Land Commission, Bureau of Concession and the National Investment Commission. Other government institutions relevant to the process, but not as relevant include the National Port Authority, the Ministry of Foreign Affairs, the Ministry of Commerce and Industry, the Central Agricultural Research Institute (CARI) and the National Legislature. Of these institutions, the veto players identified, those stakeholders who are critical for the NAP process were the EPA and the MFDP.

As for the **Non-Governmental** actors, they include non-governmental organizations (NGOs) such as Liberia's International Non-Governmental Organization Forum (LINGO), international NGOs (Oxfam, Action Aid International, the International Development Research Centre (IDRC), Conservation International, Fauna and Flora International (FFI), among others), farmer cooperatives, civil society and universities. NGOs have a substantial presence in Liberia, and provide a large share of the funding for climate adaptation projects. For the **private sector**, two actors were identified, Concessions and the Firestone Corporation.

As for **Donors and International Organizations**, those identified as key players were UNDP, the Food and Agriculture Organization of the United Nations (FAO), the United States Agency for International Development (USAID), the African Development Bank (AfDB), the World Bank, the International Fund for Agricultural Development (IFAD) and bilateral donors.

Figure 3: Stakeholder map for the NAP process in Liberia



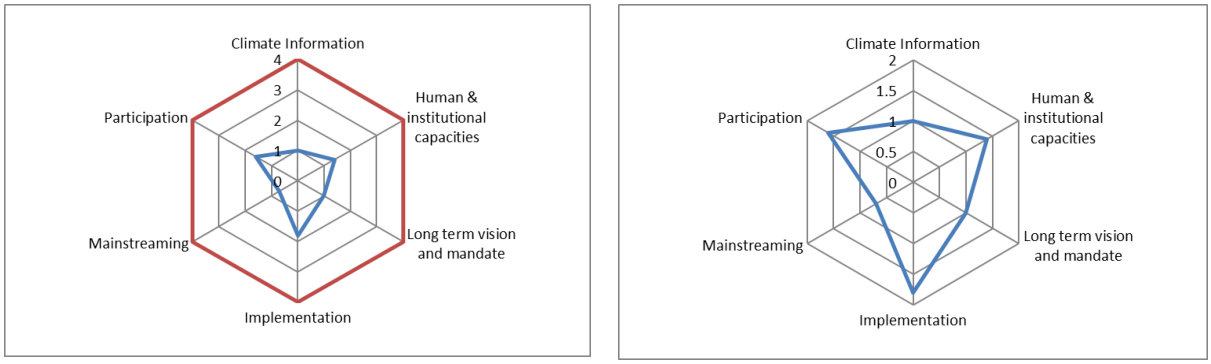
f. Stocktaking of the NAP (SNAP) Analysis

An assessment of the key areas for the NAP process was conducted. Figure 4 summarizes the results of the assessment of these areas, which include: i) climate information; ii) Human and institutional capacities; iii) Long term vision and mandate; iv) Implementation; v) Mainstreaming; and vi) Participation. Please see Annex 2 for a complete overview of the SNAP results.

Overall, the rating on the capacities for the NAP process is relatively low, between 0.5 and 2 out of 4, with an average of 1.3 (Figure 4). In the view of the stakeholders of the process, the strength is in **implementation of adaptation projects** (1.8 out of 4), as there is some experience with the NAPA projects in coastal management, agriculture and early warning systems. However, the volume of existing adaptation projects is limited to the three NAPA pilot programmes. At the same time, the existing NAPA pilot projects have a limited intervention

(e.g. working in 600 meters of coastal line in Buchanan), and are inadequate in terms of the needs in Liberia. There is also limited capacity for implementation. The other area that is rated above average is **participation** (1.6) of stakeholder groups involved in national planning for adaptation as many national policies go through consultation processes.

Figure 4: Results of Stocktaking of the NAP (SNAP) Analysis for Liberia



Note: 0=weak, 1=rather weak, 2=neither weak nor strong, 3=rather strong, 4=strong.

The areas which rate lower are human and institutional capacities (1.4), the long term vision and mandate (1.0) and the availability of climate information (1.0). In terms of the **human and institutional capacities**, the technical knowledge on adaptation to climate change of staff of sectoral ministries is inadequate, as the relevant ministries do not have the experts and trained technicians on climate change adaptation. One of the reasons is that there is limited training on climate change issues. At the same time the NCCS does it is not adequately staffed. Related to climate services, there is limited capacity to monitor, forecast, archive, analyze and communicate hydro-meteorological and climate change information.

In terms of **climate information**, the level of availability of existing climate projections is limited, without a climate projection plan. There is a need to develop and disseminate a set of standard scenarios for Liberia. There is also limited information regarding the level of availability of existing vulnerability studies.

The lowest rated component is the **mainstreaming** (0.7 out of 4) of adaptation issues into the national development strategy and sectoral strategies. As mentioned earlier, climate change has been marginally integrated into national development agenda (AFT 2030) as a cross-cutting issue among other sectors. At the sectoral level, climate change has only been identified in the Food and Agriculture Policy and Strategy. Other sectors do not integrate climate change into their development planning and implementation processes. Based on this stocktaking, an analysis of strengths, weaknesses, opportunities and threats (SWOT) is presented in

Table 3.

Table 3: SWOT-Analysis of existing Climate Change Adaptation processes in Liberia

Strengths (internal origin)	Weaknesses (internal origin)
• NCCSC and NCCS established • On-going experience with implementation of NAPA projects • Stakeholders already identified and their goodwill; they are motivated • Inclusion of climate change on Agenda for Transformation (National Development Plan) as a transversal issue • Available information	• Limited climate information (no early warning data or scientific data on climate impacts) • NCCS is not adequately staffed • Institutions are weak and underfunded • Weak institutional capacity; Relevant ministries do not have expert technicians • Lack of financial support • Lack of political will • NAPA intervention is minimal; lack of implementation capacity; not much implementation power
Opportunities (external origin)	**Threats (external origin)**
• Donor's funding; • Liberia is working to add the political will to complete the beginning of the NAP process by October 2015 • Forthcoming National Development Plan in 2017 • National policies go through consultation process • Experience from NGOs of climate change adaptation	• Sustainability; no long term plan on climate change; no policy on the books • Future political will (by 2017) • Limited institutional coordination • Lack of financial support the next phase • Limited time for information • Outside of agricultural, lack of inclusion of climate change on sectoral strategies or plans

g. Capacity Development Needs Assessment in Liberia

As identified in the previous section, there is a lack of institutional and technical capacity on climate change adaptation in Liberia. To better understand the level of capacities and the type of activities to overcome these barriers, we looked into the policy, organizational and operational levels (Table 4).

At the **policy** level (society's goals, rules and laws), the view is that the institutional capacities needed involve the mainstream of climate change into national policies which would benefit by having first clear adaptation and mitigation policies and laws for financing climate change actions. This process would benefit from information on existing instrument gaps and assessment of adaptation options, and the involvement of MACs and relevant stakeholders. To strengthen these capacities, climate change should be elevated to a debatable political issue through the involvement of high level political participation, such as include it in the agenda for the African Ministers Conference on the Environment (AMCEN). To include climate change into national policies, it must be integrated into the review and formulation process of national policies and coordinate inter-sectoral policy dialogue with the participation of all stakeholders to complement the process, including information of the cost and benefits of adaptation options.

At the **organizational** level (structures, processes and cooperation among stakeholders and key institutions), there are three main areas. First, there is the need to provide stronger political clout for the NCCS and integrate climate change into legislative committees for emerging development issues. Second, the need for enhancing institutional capacity such as the integration of CCA into training programmes in academic/research institutions, country-based learning platforms, fostering research initiatives and creation of synergies among climate change programs. And third, in terms of coordination, the need of climate change adaptation coordination mechanisms within sectors and between agencies and among working groups at county, district and clan level.

Table 4: Institutional and individual capacity development needs assessment in Liberia

Level of capacities	What institutional and individual capacities would be needed?	Which activities (training and beyond training) could strengthen capacities?
Policy Societal values, goals, rules and laws	• Mainstream climate change in national policies • Clear policy on adaptation (NAP) • Clear policy on mitigation (REDD+) • Create awareness at county and national level • Legislation for financing climate change adaptation or mitigation • Review existing instruments and establish gaps • Information (cost/benefits of adaptation in dollars) to inform policy action • Involving MACs/relevant Stakeholders	• Make climate change a debatable political issue • Coordinate inter-sectorial policy dialogue • Review and integrate climate change activities in national policies • African Ministers Conference on the Environment (AMCEN) high level participation • Surveys on cost/benefits of adaptation • Visitation to climate related disastrous issues due to climate change • Participation of all stakeholders
Organizational Structures, processes and cooperation	• Stronger political clout for NCCSC • Legislative committees for emerging development issues • CCA coordination mechanisms within sectors and between agencies • CCA coordination (working groups) at clan, districts and county level • Create synergies among climate change programs • Enhancing institution manpower development • Climate change training programmes in academic/research institutions • Fostering research initiative • County-based learning platforms • Provision of logistical support	• Cabinet discussions • Create house committee on climate change, NDRR, green/sustainable development • Consultative meeting to review institutional policies • Curriculum development • Provision of hands-on training opportunities and mentoring • Technical working groups/units on climate change • Set up think-tanks and climate change networks in counties • Conducing case study and site visit, survey, etc. • Vulnerability assessment or risks assessments • Regular and periodic monitoring and reporting
Operational Financing, implementing and oversight	• High level oversight for climate change • Ensuring effective management team • GoL co-financing • Provision of adequate funding to support implementation • Local country resource mobilization • Tax regimes (e.g. PPP, PES) • Crating effective monitoring and evaluation framework	• Vice President head NCCSC • National budget • Engage/build capacity of tax administrators (LRA/MFDP) • Designing programs and projects • Establishing think-tank • Inclusion of climate change in county development agenda • Carryout monitoring and evaluation

To strengthen these capacities, first include climate change into cabinet discussions, create house committees on climate change, natural disaster risk reduction (NDRR) and green/sustainable development and have consultative meetings to review institutional policies. To development capacity and training, include climate change into curriculum development and provide hands-on training opportunities and mentoring. For coordination, set up technical working groups/units on climate change within agencies and think-tanks and climate change networks in counties. This should be informed by conducting case studies, vulnerability/risks

assessments and site visit and surveys, etc. There should be regular and periodic monitoring and reporting to interested parties on all these issues.

Finally, at the **operational** level (financing, implementation and oversight), there is the need for a high level oversight for climate change, ensuring an effective management team. To strengthen this capacity, is has been identified that the Vice President head the NCCS and include these activities into the national budget. There is also need to provide adequate funding to support implementation, as well as secure GoL co-financing for internationally funded projects. Inclusion of climate change into the planning and national budget process should secure funding from the very beginning of the process. There is also the need for financial incentives (instruments and mechanisms) such as public private partnerships (PPP) and payments for environmental services (PES). Engagement and capacity building of tax administrators (LRA/MFDP) on climate change should engage them on these issues. Finally, there is also the need for crafting an effective monitoring and evaluation (M&E) framework.

From the previous discussion, it is evident that there are some institutional constraints that need to be resolved. To complement the previous analysis,

Table 5 shows an evaluation of the **potential strategies to overcome these institutional constraints** in various areas, namely financial resources for climate change, institutional mandates, technical skills and knowledge and coordination across government institutions (inter-ministerial coordination).

For **financial resources**, the main challenge observed is that climate change has not been a factor in the national budget, resulting into low budget appropriation and GoL co-financing for externally funded projects. This is a consequence of the limited awareness among line ministries and agency about climate change funding and the lack of buy-in from policy makers and politicians. Some of the strategies identified to mainstream climate change into the national development processes is to articulate a strong case for climate change funds into the national budget by increasing the awareness among policy makers and line ministries of the social and economic impacts of climate change in their specific sectors, as well as climate change funding. This should be done with increased coordination among key actors, experts and stakeholders on climate change in Liberia.

At the same time, it is perceived that **institutional mandates** are fragment among ministries and agencies, due to not specific legislation on the matter, among other things. To overcome this, there is the need to conduct a review of the legislation and the mandates of line ministries and agencies and revoke unnecessary mandates to avoid ambiguity. Workshop participants identified the need to take lessons learned from the workshop to their relevant institutions.

The barriers on the **technical skills and knowledge** is the limited availability of specialized professionals, limited training opportunities, the lack of academic programs with climate change in their curriculum and inadequate support to research institutions and limited capacity of extension support services. To overcome these barriers some of the things identified are to provide more training to technical personnel at line ministries and agencies, research institutions and extension staff, develop curriculum in academic and learning institutions and link extension services to climate change information.

In terms of **inter-ministerial and inter-agency coordination**, there is poor coordination between sectors. This is due to the absence of a functional technical working group (TWG) on climate change, MACs do not have adequate knowledge about the impact of climate change and lack technical experts on climate change adaptation. There is also limited knowledge sharing among MACs, which makes assessing information from line ministries a big challenge. To overcome these barriers, first there is a view that the GoL needs to strengthen and empower the National Climate Change Secretariat (NCCS), reflected in budget and staffing. A strengthened NCCS should enhance coordination among relevant institutions. The NCCS should provide comprehensive periodic coordination meeting and provide the platform for knowledge sharing. At the same time, this would provide the environment to establish a functional technical group in the sector, with focal persons assigned to each line ministry, providing access to information and data collection from each MAC. Finally, synergies should be created amongst donor partners and GoL to ensure harmonization of climate change adaptation initiatives.

Table 5: Strategies to overcome institutional constraints in Liberia

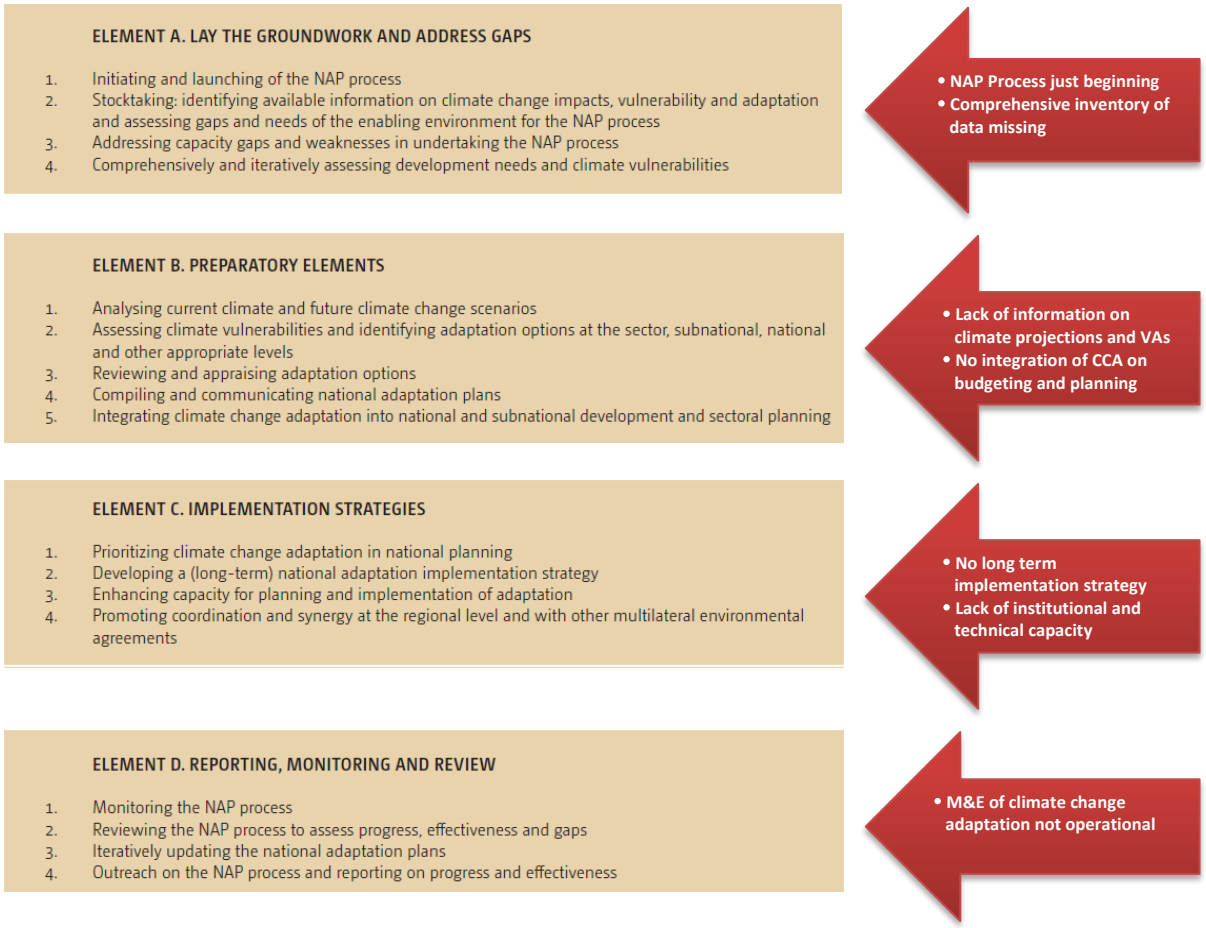
Area	Nature of barriers in Liberia	Strategic responses to overcome barriers
Financial resources for climate change	• Limited efforts to articulate climate change activities • Climate change has not been factor in the national budget (low budgeting appropriation and GoL co-financing) • Lack of buy-in and commitment from politicians, policy maker and/or decision makers • Limited information on climate change funds • Awareness among line ministries and agency for climate change funding • Limited financial data	• Mainstreaming climate change into national development processes • Take stock of existing climate change funds • Articulate strong case for climate change funds in national budget • Increase advocacy and campaigning for policy makers. Explain policymakers the social damages and economic benefits of climate change • Increase awareness among line ministry and climate change funding • Widen financial data information • Increase coordination among key actors (experts and stakeholders)
Institutional mandates	• Issues of fragment mandates especially existing among ministries and agencies • There are several MACs concern with climate change related function • The existing legislation carved • No information on data collection on climate change issue in Liberia	• Need to review the mandate of line ministries and agencies to avoid ambiguity • Revoke unnecessary mandates • Fast-strike ongoing decentralization and reform processes • Review legislations to identify over lapping mandates • Need to take lessons learned from workshop to our relevant institutions
Technical skills and knowledge	• Limited capacity of extension support services • Lack of climate change program in academics and research institutions; less expert in the sector • Limited specialized professionals • Misplacement of professionals • Inadequate support to research institutions • Limited training opportunities	• Training of extension staff; Need to train more people on climate change • Need to link extension to climate change information • Develop curriculum in academic and learning institutions • Build capacities of research institution; material support into research • Harmonization of existing policies
Dialogue and coordination across government (inter-ministerial coordination)	• Clarity of sector lead absent • Poor coordination between sectors; synergies of coordination are weak • Absent of functional technical working group (TWG) • MACs do not have adequate knowledge about the impact of CC • Lack of technical experts in climate change adaptation • Assessing information from line ministries is a big challenge • Limited knowledge sharing • Lack of synergies between donors and GoL	• Strengthen and empower the National Climate Change Secretariat (NCCS) (budget, staffing) • Enhance coordination among relevant institutions • Create comprehensive periodic coordination meeting; Create a loop involving drop box, emails to share information • Establish a functional technical group in the sector • Focal person assigned to line ministry for data collection • Create synergies amongst donor partners and GoL to ensure harmonization

h. Gap Analysis of existing climate change adaptation initiatives in Liberia

Comparing process elements envisaged in the four steps of the NAP Guidelines with the situation in Liberia described in the previous sections of this report, we can identify some shortcomings and gaps, as presented in Figure 5. The value added of the NAP process for Liberia would be to address the key gaps, and develop strategies to address those gaps.

In this process, there needs to be a comprehensive stocktaking of existing climate information and vulnerability studies. Also, there needs to be mechanisms and instruments to mainstream climate change on planning and budgeting at the national and subnational level, involving key sectors such as agriculture, coastal management, energy, health, public works, etc. For that, an assessment and valuation of adaptation options is required. There is also a lack of institutional and technical capacity and no long term implementation strategy for adaptation. Finally, monitoring and evaluation for adaptation processes is also lacking.

Figure 5: Gaps to be addressed in the NAP process for Liberia using the framework of the LEG NAP Guidelines



Deriving entry points and strategic intervention areas for the NAP process

As discussed in the previous sections, Liberia does not have specific national climate change adaptation policies in place. Liberia seeks to utilize the NAP process to mainstream climate change into their current development policies, and influence various government departments to drive the process. There is also a need to have a system or framework to update medium to long term plans and processing adaptation information. Liberia is also seeking to build capacity to conduct adaptation assessments to start the NAP process. The GoL plans to utilize existing institutional structures to conduct assessments to help identify the countries vulnerabilities to climate change. Also, a strong M&E system would provide the general support for the process.

As elaborated in the SWOT analysis, the most salient feature of the adaptation experience in Liberia is the implementation of the pilot projects under the NAPA. However, these processes need to be strengthened during the NAP process. Another potential entry point is the budgeting process as Liberia aims to integrate climate change concerns into their national development planning and budgeting.

Based on an analysis of existing relevant CCA processes and capacities in Liberia, there are several gaps that should be addressed by a successful NAP process. To fill these gaps, there are various **strategic intervention areas** that need to be addressed. A NAP process that integrates activities to address these gaps will provide added value to existing CCA initiatives. It is important to note that the implementation of these strategic intervention areas requires the engagement of key stakeholders and actors, as well as engaging politicians and policy makers to have the political backing. The strategic intervention areas are:

I. **Climate Information.** Generate base information on climate projections, vulnerability studies and economic assessment of adaptation options.
II. **Capacity development.** Support measures to build institutional and technical capacity.
III. **Intersectoral coordinated implementation.** Need to strengthen the NCCS and coordination with line Ministries.
IV. **Planning and Financing.** Integrate climate change into planning and budgeting, matching financing needs with sources.
V. **Implementation of M&E system for CCA.** Establish M&E system at EPA to ensure tracking of progress of climate change adaptation process.

Suggestions for a roadmap for Liberia's NAP process

As part of the results of the workshop, a draft roadmap of the NAP process was established (Table 6), identifying the key aspects of the NAP process relevant for Liberia and associated activities that need to be undertaken, identifying the responsible institutions for those activities. A tentative list of outputs for each activity and a timeframe were identified, as well as possible sources of financing. It is worth noting that this table will probably need to be revised when Liberia formally proceed with the NAP process.

Each of the activities have been classified as short term (3, 3-6, 6-12 months), medium term (1-2 years) and long term (3-5 years), suggesting a period of 2015-2019. Table 7 presents these activities in a tentative timeline to be carried out. Specific institutional roles and responsibilities have been identified for each of the activities identified in the road-map.

Table 6: Preliminary NAP Process Road-Map for Liberia

Steps	Key activities	Responsible Institutions	Outputs	Timeframe	Funding source
1. Lay the groundwork and address gaps (Element A)					
1. Initiating and launching of the national adaptation plan (NAP) process	a. Conduct briefing to policy makers about climate change adaptation challenges opportunities and the NAP process in particular. Consultation with stakeholders (public hearing)	EPA, NCCS	Policy paper for briefing on the NAP process	1-3 months	UNDP, GOL and LDCF
2. Stocktaking	a. Conduct a stocking of on-going and past adaptation activities	EPA, NCCS	Report on synthesis of available information	1-3 months	UNDP, GOL and LDCF
	b. Synthesize available analysis of current and future climate at the broad national/regional level	MoT, MLME, EPA, LISGIS	Geospatial data base in support of the NAP process	12 months	UNDP, GOL and LDCF
	c. Coordinate compilation and development of (distributed / shared) database for the NAP	EPA, NCCS	Knowledge base of observed climate impact vulnerability and potential interventions	1-3 months	UNDP, GOL and LDCF
	d. Conduct a gap analysis to assess strength and weaknesses regarding the capacity, data and information, and resources required to effectively engage the NAP	EPA, NCCS	Gaps and needs analysis report	1-3 months	UNDP, GOL and LDCF
3. Addressing capacity gaps and weaknesses in	a. Develop and enhance enabling institutional and technical capacity for	EPA, NCCS	Strategic document for capacity building, awareness communication	6-12 months	UNDP, GOL and LDCF

Steps	Key activities	Responsible Institutions	Outputs	Timeframe	Funding source
undertaking the NAP process	undertaking the NAP process		and education		
4. Comprehensively and iteratively assessing development needs and climate vulnerabilities	a. Compile information on main development objectives, policies plans and programmes	Lead: EPA and NCCS MFDP, LISGIS	Stocktaking of adaptation activity report	1-3 months	UNDP, GOL and LDCF
2. Preparatory Elements (Element B)					
1. Analyzing current climate and future climate change scenarios	a. Analyze current climate to identify trends in variables and indices that could be used to support planning and decision making	MoT, MLME, MFDP, LMA & EPA	A draft situational analysis of Liberia Climate Change status.	3 – 6 months	Donors & GoL
	b. Characterize broad future climate risks and levels of uncertainty using scenario analysis at international level or as part of regional analysis.	MIA & MoT	Compile comprehensive climate risks report that will inform users of climate change activities in Liberia.	3-6 months	Donors & GoL
2. Assessing climate vulnerabilities identifying adaptation options at sector, subnational, national and other appropriate levels	a. Assess vulnerability to climate change at sector, sub-national, national or appropriate levels (by applying appropriate framework)	MoT, EPA, LISGIS, MFDP & MIA	A matrix depicting climate vulnerabilities at various sector levels prepared. Identification of adaptation options	3 months 3-6 months	Donors & GoL
3. Reviewing and appraising adaptation options	a. Appraise individual adaptation options	MFDP & partners	Various adaptation options appraised.	6 months	Donors & GoL

Steps	Key activities	Responsible Institutions	Outputs	Timeframe	Funding source
4. Compiling and communicating national adaptation plans	a. Compile draft national adaptation plans and make them available for review.	EPA	National draft Adaptation Plans available.	3 months	GoL
5. Integrating climate change adaptation into national and subnational development and sectoral planning	c. Integrating climate change adaptation into national and subnational development and sectoral planning.	EPA & partners	Facilitate the integration of climate change adaptation into existing national and subnational planning processes	2 years	Donors & GoL
3. Implementation Strategies (Element C)					
1. Prioritizing climate change adaptation in national planning	Conduct Baseline Survey on CCA	LISGIS, EPA and affected sectors (MoA, MHSW, MPW, MLME, MoG, MIA, FDA) NAP institutions	Report on survey result	3-6 months	GOL/DP
	Education and Information awareness on CCA	EPA, NCCS, CSOs, Media, MICAT, MOE	Education and awareness conducted	Ongoing	GOL/DP
	Establish an Integrated Data Management System	EPA, LISGIS	Integrated data management system established	3-6 months	GOL/DP
2. Developing a (long-term) national adaptation implementation strategy	Identify targeted interventions	Affected Sectors (MoA, MHSW, MPW, MoG, MIA, FDA)	Targeted interventions identified	3-6 months	GOL/DP
3. Enhancing capacity for planning and implementation of adaptation	Identify Institutional arrangement for Implementation	EPA, NCCS	Institutional arrangement for implementation identified	Ongoing	GOL/DP
	Update National Capacity Needs Assessment (NCNA)	EPA, NCCS	National capacity needs assessment updated	3-6 months	GOL/DP
	Build Human and Institutional Capacity of affected sectors	Affected sectors (MoA, MHSW, MPW, MoG, MIA, FDA)	Number of technicians and institutional capacities developed	1-2 years	GOL/DP

Steps	Key activities	Responsible Institutions	Outputs	Timeframe	Funding source
4. Promoting coordination and synergy at the regional level and with other multilateral environmental agreements	Identify logistical challenges	Affected sectors (MoA, MHSW, MPW, MoG, MIA, FDA)	Report that identifies challenges complied	3-6 months	GoL/DP
	Provide logistical support to affected sectors	MFDP	Number of logistics	1-2 years	GOL/DP
	Holding regional consultations on shared natural resources	MoFA, MFDP, EPA, NCCS MRU, ECOWAS, AU, AfDB, UNECA	Regional consultations on shared natural resources organized	Ongoing	GOL/DP
4. Monitoring and Review (Element D)					
1. Monitoring the NAP Process	a. Identify areas of NAP gap. Example.Table1 (Element B3&5)	MFDP, EPA, MoA, MLME, MIA, CSO, NGO	Matrix report/monitoring plan	3 months	GOL/DONOR
	b. Define Matrix for NAP process gap & data collection plan	MFDP, EPA, MoA, MLME, MIA, CSO, NGO	Database of matrix	3 months	GOL/DONOR
2. Reviewing the NAP process to assess process, effectiveness and gaps	a. Review on a regular basis b. Compile information c. Integrate efforts	MFDP, EPA, MoA, MLME, MIA, CSO, NGO	Evaluation report	(12 months	GOL/Donors
3. Iteratively updating the national adaptation plans	a. Update NAP b. Align update	MFDP, MACs	Updated NAP	2 years	GOL/Donors
4. Outreach of the NAP process and reporting on progress and effectiveness	a. Disseminate NAP document b. Provide information in national communication	EPA	Information in national communication	After NAP has been updated 3 months	GOL/Donors

Table 7: Preliminary NAP Roadmap Activities and Timeline

Activity	Year	1			2	3-5
	Month	1-3	3-6	6-12		
1. Lay the groundwork and address gaps (Element A)						
1.A. Conduct briefing to policy makers about CCA challenges and opportunities. Consultation with stakeholders						
2.A. Conduct a stocking of on-going and past adaptation activities						
2.B. Synthesize available analysis of current and future climate at the broad national/regional level						
2.C. Coordinate compilation and development of (distributed / shared) database for the NAP process						
2.D. Gap analysis to assess strength and weaknesses regarding capacity, data and information, and resources required for NAP						
3.A. Develop and enhance enabling institutional and technical capacity						
4.A Compile information on main development objectives, policies, plans and programmes						
2. Preparatory Elements (Element B)						
1.A. Analyze current climate to identify trends in variables and indices to support planning and decision making						
1.B. Characterize broad future climate risks and levels of uncertainty using scenario analysis						
2.A. Assess vulnerability to climate change at sector, sub-national, national or appropriate levels						
3.A. Appraise individual adaptation options						
4.A. Compile draft national adaptation Plans and make them available for review.						
5.C. Integrating climate change adaptation into national and subnational development and sectoral planning						
3. Implementation Strategies (Element C)						
1.1. Conduct Baseline Survey on CCA						
1.2. Education and Information awareness on CCA						
1.3. Establish an Integrated Data Management System						
2.1. Identify targeted interventions						
3.1. Identify Institutional arrangement for Implementation						
3.2. Update National Capacity Needs Assessment (NCNA)						
3.3. Build Human and Institutional Capacity of affected sectors						
4.1. Identify Logistical Challenges						
4.2. Provide Logistical Support to affected sectors						
4.3. Holding Regional Consultations on shared natural resources						
4. Monitoring and Review (Element D)						
1.A. Identify areas of NAP gap.						
2.B. Define Matrix for NAP process gap & data collection plan)						
2.A. Review on a regular basis						
2.B. Compile information						
2.C. integrate efforts						
3.A. Update NAP						
3.B. Align update						
4.A. Disseminate NAP document						
4.B. Provide information in national communication						

The role of the EPA in the NAP process and implementation of the Road Map

From the above chapters it becomes clear that the NAP process cannot be designed, organized and implemented by EPA alone. Many other actors play roles in the respective fields of expertise or power. However, having the overall expertise in adaptation to climate change as well as access to the international discussion on the NAP process, the EPA should take a facilitating role within the NAP process. The road map has several short-term activities (1-6 months) that may be conducted by the GoL independently and take advantage of the NAP Workshop momentum. It is recommended that EPA leads these short term activities, with the participation of the other relevant Ministries and stakeholders identified during the workshop. Among the activities, they include:

- Conduct briefing to policy makers and consultation with stakeholders to further develop the NAP process.
- Conduct a stocktaking of on-going and past adaptation activities and a baseline survey on climate change adaptation
- Develop and enhance enabling institutional and technical capacity for undertaking the NAP process
- Coordinate compilation and development of (distributed / shared) database for the NAP process
- Conduct a gap analysis to assess strength and weaknesses regarding capacity, data and information, and resources required for NAP
- Compile information on main development objectives, policies plans and programmes.
- Assess vulnerability to climate change at sector, sub-national, national or appropriate levels (by applying appropriate framework)
- Compile draft national adaptation plans and make them available for review.
- Define Matrix for NAP process gap & data collection plan

Also, EPA can provide stakeholders with information on access to NAP/climate change adaptation financing, as well as be the intermediary between discussions on the NAP process and NAP financing on international level and the national stakeholders in collaboration with the MFDP.

References

Environmental Protection Agency of Liberia (EPA). 2008. Liberia National Adaptation Programme of Action (NAPA).

EPA. 2013. Initial National Communication to the UNFCCC. Monrovia.

Republic of Liberia. 2013. Agenda for Transformation: Steps Towards Liberia Rising 2030. Monrovia.

USAID. 2013. Liberia Climate Change Assessment. Prepared by US Department of Agriculture (USDA) Forest Service.

Annex 1. Liberia's National Adaptation Programme of Action (NAPA)[3]

Leading Organization: Global Environment Facility

Executing Agency: Environmental Protection Agency of Liberia (EPA)

- GEF operational focal point: Dr. Fodee Kromah, Executive Director EPA
- Climate Change focal point: Asst. Prof. Benjamin S. Karmorh Jr.

Implementing Agency: UNEP

Funding Source: Least Developed Countries Fund

Co-financing Total: 27,000

Total Amounts: 227,000

Summary: National adaptation programmes of action (NAPAs) provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage. The following summarizes the NAPA for Liberia.

Climate Related Hazards: Agriculture, Forestry, Fisheries, Wetlands, Public Health

Main Human Vulnerabilities and Livelihood Impacts

- Degradation of the agricultural lands and the loss of biodiversity, putting small holder households at risk;
- Absence of an effective early warning system (i.e., a system of meteorological stations) that could allow farmers and other stakeholders to make informed decisions on production strategies;
- Coastal erosion mainly in low-lying areas such as the urban centers of Robertsport, Monrovia, Buchanan and Cestos.

Priority Adaptation Projects

1. Integrated Cropping/Livestock Farming: Enhancing resilience to increasing rainfall variability through the diversification of crop cultivation and small ruminants rearing
2. Improved Monitoring of Climate Change: Enhance adaptive capacity through the rebuilding of the national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters
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

- Priority options in the agricultural sector (crop production sub-sector)
    - Carrying out the timing of crop cultivation in response to changing patterns of rainfall;
    - Inter-cropping, irrigation, and the optimization of lowland/swamp farming practices;

[3] Information taken directly from: http://www.adaptationlearning.net/liberia-napa

    - Pest control including fencing of farms against rodents, bird scare scrolls, regular weeding, and the use of high echoing bells; and
    - Maintaining fast growing nitrogen fixing tree species to improve soil fertility and using multiple-purpose tree species on farmlands to maintain forest cover.

- Priority options in the fisheries sector
    - 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.

- Priority options in the health sector
    - 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.
- Priority options in forest and woodland management

As indicated earlier, Liberia still has large tracts of forested area. These lands are being threatened by a combination of unsustainable practices that are being compounded by a changing climate. While serious, it is recommended that no immediate adaptation initiatives be undertaken at the present time apart from raising the climate change awareness and finalizing wetlands legislation currently in process.

Annex 2. Assessment of success factors of the SNAP Tool

No.	Success factor	Areas of intervention: Test question	Ranking of present situation (0=weak, 1=rather weak, 2=neither weak nor strong, 3=rather strong, 4=strong)	Examples illustrating ranking
1	Climate information	What is the level of availability of existing climate projections?	1 0 1 1 0 **0.6**	Limited information No early warning data, no scientific data on climate impacts Do not have any climate projection plan
2	Climate information	What is the level of availability of existing vulnerability studies?	1 1 2 2 1 **1.4**	Limited information The NLLS does not have storage capacity, technical experience We only have two agencies in the issue
4	Human and institutional capacities	What is the level of technical knowledge on adaptation to climate change of staff of sectoral ministries?	2 1 2 2 0 **1.4**	Inadequate trained manpower Climate change secretariat does not have staff competency; Relevant ministries do not have the experts, technicians Our capacity level is low into climate change
7	Long term vision and mandate	Is there a coherent existing national plan/ strategy for adaptation? (e.g. SPCR, National Adaptation Strategy, NAPA)	0 0 1 1 2 **0.8**	In process There are many documents that are not sync with the other E.g. National Disaster Relief Strategy and National Climate Framework We do not have a long term plan on climate change
8	Long term vision and mandate	To what extent does the official adaptation plan/ strategy take into account the impacts of climate change in the medium and long term?	0 1 1 1 2 **1.0**	In process This is Liberia first time developing the NAPs. The NAPA is short term We as a government do not have a policy on book for climate change
9	Long term vision and mandate	To what extent are there institutional arrangements in place that can sustain the NAP process in the long term?	2 0 2 2 0 **1.2**	Several activities ongoing The institutions are weak and underfunded E.g. NCCS, EPA do not have adequate financial and technical support We have no institutional arrangement for climate change
11	Implementation	What is the volume of existing adaptation projects?	3 2 2 2 0 **1.8**	NAPA already being implemented Adaptation intervention in Liberia is minimal E.g. working in 600 meters out of … We lack the implementation force

No.	Success factor	Areas of intervention: Test question	Ranking of present situation (0=weak, 1=rather weak, 2=neither weak nor strong, 3=rather strong, 4=strong)	Examples illustrating ranking
12	Implementation	What is the quality of existing adaptation projects?	2 2 2 2 1 **1.8**	It is somewhat poor They are inadequate E.g. Buchanan Coastal project There is not much implementation power
13	Mainstreaming	What is the degree of integration of adaptation issues into the national development strategy?	0 0 1 3 0 **0.8**	Limited inclusion of NAP issues on national document Weak because the government does not provide budget support There is no integration adaptation policy for Liberia
14	Mainstreaming	What is the degree of integration of adaptation issues into relevant sectoral strategies?	0 0 1 1 1 **0.6**	Limited inclusion The capacity of sectoral ministries is weak and poor coordination lead to adaptation being taken into strategies We do not have any sectoral strategies
16	Participation	To what extent are all relevant stakeholder groups involved in national planning for adaptation?	1 3 2 2 0 **1.6**	Limited stakeholder participation Many national policies go through consultation processes E.g. National Development Agenda