

# **Republic of Liberia**

## **Liberia's First Adaptation Communication to the United Nations Framework Convention on Climate Change (UNFCCC)**

**November 2021**

## Republic of Liberia

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Environmental Protection Agency of Liberia  
Government of Liberia  
Monrovia, Liberia



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## List of Abbreviations

AdCom	Adaptation Communication
AfT	Agenda for Transformation
CAP	Coastal Add-On Project
CBD	Convention on Biodiversity
CBIT	Capacity Building Initiative for Transparency
CCAC	Climate and Clean Air Coalition
CCKSP	Climate Change Knowledge Sharing Platform of Liberia
CITES	Convention on International Trade in Endangered Species of Wild Fauna & Flora
CMS	Convention on Migratory Species
COP	Conference of Parties
CSO	Civil Society Organization
EKMS	Environmental Knowledge Management System
EPA	Environmental Protection Agency of Liberia
EST	Environmentally Sound Technology
FDA	Forest Development Authority
GCF	Green Climate Fund
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
NGP	National Gender Policy of Liberia
GST	Global Stocktake
HSSP	Health Systems Strengthening Project
ICT	Information Communication Technology
ICZM	Integrated Coastal Zone Management
IDA	International Development Association
IISD	International Institute for Sustainable Development
KYE	Know Your Environment
LASIP	Liberia Agriculture Sector Investment Program
LISGIS	Liberia Institute for Statistics and Geo-Information Services
LSMFP	Liberia Sustainable Management of Fisheries Project
MA	Master of Arts
MMA	Monrovia Metropolitan Area
MMCRP	Monrovia Metropolitan Climate Resilience Project
MOA	Ministry of Agriculture
MSc	Master of Science
M&E	Monitoring and Evaluation
MFDP	Ministry of Finance and Development Planning
MRV	Measurement, Reporting, and Verification
NAP	National Adaptation Plan

NAPA	National Adaptation Programme of Action
NAPDRR	National Action Plan for Disaster Risk Reduction of Liberia
NCCS	National Climate Change Secretariat
NCCSC	National Climate Change Steering Committee
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NDMA	National Disaster Management Agency
NDMP	National Disaster Management Policy
NDP	National Development Plan
NEP	National Environmental Policy
NFSNS	National Food Security and Nutrition Strategy
NGO	Non-Governmental Organization
NPRSCC	National Policy and Response Strategy to Climate Change
PAPD	Pro-Poor Agenda for Prosperity and Development
RCM	Regional Climate Model
SDG	Sustainable Development Goal
SFDRR	Sendai Framework for Disaster Risk Reduction
SNC	Second National Communication
TAP	Technology Action Plan
TNA	Technology Needs Assessment
UL	University of Liberia
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development

## Executive Summary

The Republic of Liberia is confronted with the threat and related impacts of climate change. Adapting to these impacts is imperative to protect lives, property, livelihoods and socio-economic activities, and to conserve the natural environment.

Liberia's national development document, The Pro-Poor Agenda for Prosperity and Development 2018 to 2023 recognizes the impacts of climate change on development, and calls for the integration of climate change considerations and the building of resilience into the country's national development programs and plans. The National Policy and Response Strategy to Climate Change (NPRSCC) was launched in 2018 to enable better coordination of climate change work; and to enhance efforts related to Liberia's National Adaptation Plan (NAP) and Nationally Determined Contribution (NDC). Liberia is strengthening her capacity to measure, track and report adaptation data through a Capacity Building Initiative for Transparency (CBIT) initiative that is implemented through the Environmental Protection Agency of Liberia (EPA).

Liberia is a party to the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. To meet the requirements of these international agreements, the country submitted her first NDC that included an adaptation component to the UNFCCC in 2015. Liberia submitted her Second National Communication (SNC) that included a section on vulnerability and adaptation to the UNFCCC in 2021. The country's NAP was completed in 2021.

The Government of Liberia has prepared this national Adaptation Communication (AdCom) in accordance with Article 7 of the Paris Agreement, Decision 9/CMA.1 (2018). The AdCom will inform synthesis reporting for the UNFCCC's Global Stocktake (GST) that will take place from 2021 to 2023 to assess progress towards achieving the goals of the Paris Agreement. Liberia's AdCom contributes to strengthening adaptation action and support for Liberia; to enhancing learning and understanding of adaptation needs and actions; and to enhancing the visibility and profile of adaptation, and its balance with mitigation. The AdCom was prepared using a country-driven process led by the EPA and in accordance with the draft supplementary guidance of the UNFCCC's Adaptation Committee (AC19/GUID/6B).

This AdCom provides a summary of Liberia's national circumstances with respect to the current climate and projections of future trends; and reviews the country's climate vulnerability, risks and impacts. In addition, the AdCom highlights Liberia's adaptation priorities; implementation and support needs; recent adaptation actions; monitoring and evaluation (M&E) of adaptation action; and plans and goals for the country's key adaptation sectors: Agriculture, Coastal zones, Health, Forestry and Fisheries. This AdCom cross-references to key national climate change documents and processes (NDC, NAP, Second National Communication [SNC], Technology Needs Assessment [TNA], etc.) where appropriate.

Implementation of adaptation priorities will require that the country address many challenges including limited and inadequate financial support, limited technical expertise, lack of adequate adaptation technologies, limited specific sectoral adaptation policies, limited adaptation knowledge and information sharing, as well as inadequate political will and support. It is vital to address these challenges to enhance the implementation of national adaptation priority actions. As such, Liberia's Revised NDC reports that an investment of USD 89,945,000 dollars will be required to achieve the country's adaptation targets from 2020 to 2025.

The proposed next steps to advance adaptation actions in Liberia will focus on the following:

- a. Defining Liberia's NDC implementation modalities;*
- b. Accessing financing for the identified adaptation implementation and support needs;*
- c. Achieving / realizing Liberia's National Adaptation Plan (NAP, 2020-2030); and*
- d. Reporting on the implementation of adaptation plans and actions.*

## **1.0 National Circumstances, Institutional Arrangements and Legal Frameworks**

This section includes a summary of Liberia's national circumstances with respect to climate change for the purpose of the country's first Adaptation Communications (AdCom). Liberia's national circumstances are described in detail in chapter 4 of the country's National Adaptation Plan (NAP, 2020-2030). In addition, chapter 1 of Liberia's Second National Communication (SNC, 2021) to the UNFCCC provides a narrative description of the national circumstances in regard to climate change, including national geography, system and structure of governance, population, weather and climate, and economic profile.

### **1.1 National circumstances**

Liberia is situated on the West Coast of Africa and is bounded by longitude 7° 18' to 11° 30' West and latitude 4° 20' to 8° 30' North. The country covers an area of 111,370 square km with a coastal belt about 570 km in length; extending 149 km inward. The country is bordered by Guinea on the North, Côte d'Ivoire on the East, Sierra Leone on the West and the Atlantic Ocean on the south (EPA, 2021c). According to Liberia's Institute of Statistics and Geo-information Services (LISGIS) 2008 census, the population of the country was 3.48 million. Liberia's estimated population in 2018 was 4,809,768 (LISGIS, 2021).

Liberia's NAP 2020-2030 explains that the climate of Liberia is predominantly equatorial with four distinct elevation zones: the coastal belt, the rolling hills, the plateaus and the northern highlands. Generally, Liberia experiences two seasons due to the movement of the inter-tropical convergence zone: a wet season which usually falls between May and November and a dry season which runs between December and April during which time the dry and dusty harmattan winds blow off the Sahara Desert. As an exception, the southernmost parts of the country receive rainfall almost throughout the year.

The average annual precipitation for Liberia is 2,500 mm, but there are some regional variations. Liberia's NAP explains that average rainfall is higher in coastal areas where it exceeds 3,000 mm annually and decreases towards the country's interior. In Monrovia, for example, precipitation reaches 5,000 mm per year, with maximum amounts in June and July when nearly 1,000 mm of rain falls each month, with decreases in the month of August (EPA, 2013). The country's mean annual precipitation has decreased since 1960. From 1961 to 2016, the country's mean monthly precipitation varied from 27 mm in January to 400 mm in September.

Temperatures in Liberia are highly influenced by the seasons. Nationally, temperatures during the rainy season are relatively low because of near-complete cloud cover, and slight diurnal variation occurs. From 1970 to 1999, temperatures typically ranged from 24 °C to 25 °C during the wet season and 24 °C to 27 °C during the dry season. National temperature information

collected from the Robert International Airport weather station between 2009 and 2012 showed a variation in temperature from 23 °C to 33 °C annually.

Liberia's NAP includes projections of future trends for temperature and precipitation that show that Liberia will continue to be affected by changing climatic conditions. Global Climate Modeling data indicates that the mean annual temperature is projected to increase by 1.8 °C between 2040 and 2059. The RCP 8.5 (high greenhouse gas emissions scenario) projects 44 additional hot days with temperatures above 35 °C by mid-century while the daily maximum temperatures are projected to increase by 1 °C to 2 °C. The number of hot nights is also expected to increase by 37 nights by mid-century meaning that 89% of all nights will be hot, and by 49 nights by the end of the century meaning that 95% of all nights will be hot. Average temperatures are estimated to increase by 1.54 °C in 2050 and 1.90 °C in 2080, thus warming Monrovia during the dry season by 1.30 °C by 2050 and by 1.85 °C by 2080 during the wet season). Nimba is projected to warm by an average temperature of 1.50 °C by 2050 and 2.13 °C by 2080 during the dry season. The southeastern region, especially the Sapo National Park, is projected to warm slightly with an estimated average increase of 1.44 °C by 2050 and 1.95 °C by 2080 during the dry season; and an increase of 1.29 °C by 2050 and 1.73 °C by 2080 in the wet season.

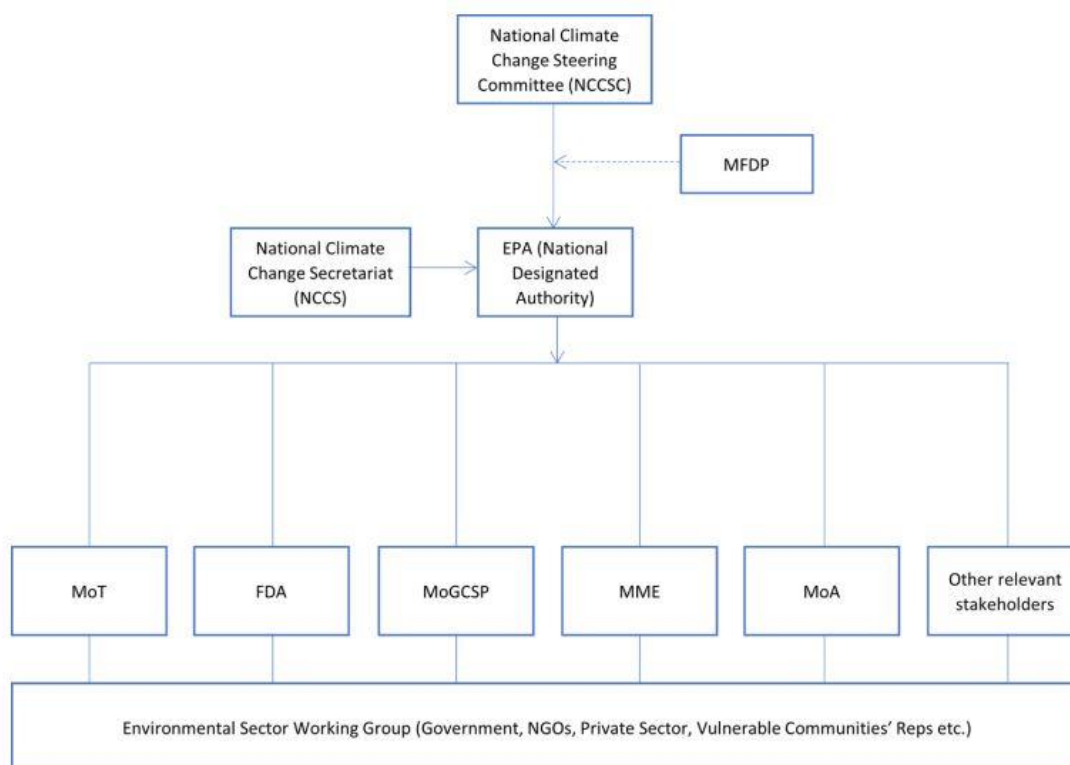
Liberia's NAP indicates that the Regional Climate Models (RCMs) were used to project Liberia's climate from 2010 to 2050, and the mean air temperature is expected to increase by 0.4 °C to 1.3 °C. Furthermore, the EPA (2013) estimated that the average increase in temperature in the 2020s would be 0.6 °C; and temperature would increase by a cumulative total of 1.3 °C by the middle of the 21<sup>st</sup> century (EPA, 2018).

## **1.2 Institutional arrangements and legal frameworks**

In order to properly implement and coordinate climate change initiatives across all sectors at both national and sub-national levels, various institutions play a role in the planning and implementation of climate change activities in the country (illustrated below in figure 1). A brief description is included below and more detailed information about Liberia's institutional arrangements for climate change is available in chapter 1.6 of Liberia's SNC.

The National Climate Change Steering Committee (NCCSC) is responsible for overall climate change activities in Liberia. The NCCSC is the overarching institutional structure which has the mandate to coordinate and supervise the implementation of the climate change policy. Established by the President in October 2010, the committee is chaired by the Minister of Finance and Development Planning (MFDP) and its 16 members provide high-level policy coordination and oversight. The committee is guided by expert advice from its technical working groups.

**Figure 1: Institutional arrangements for climate change in Liberia**



**Source:** EPA, 2021, Liberia's Second National Communication to the UNFCCC.

The National Climate Change Secretariat (NCCS) serves as the operational arm of the NCCSC and provides coordination, and monitoring and evaluation. It is housed at the Environmental Protection Agency of Liberia (EPA) and coordinates climate change-related activities, accesses information, monitors key programs and activities, and promotes inter-institutional cooperation.

The EPA is the Republic's regulatory agency responsible for ensuring the sustainable usage, management and protection of the environment and its natural resources. Based on the agency's mandate, it coordinates with other ministries and agencies to implement major activities under the policy. The EPA is the Focal Point for the UNFCCC, the Operational Focal Point for the Global Environment Facility (GEF) and the National Designated Authority (NDA) for the Green Climate Fund (GCF).

Table 1 provides an overview of some key national policies and frameworks that are related to Liberia's adaptation policies.

**Table 1: Key national policies/ laws relating to climate change adaptation**

National policy / law	Description and relation to climate change adaptation
Liberia's	The NDC shows that Liberia recognizes the current and future threats of climate change. The

Revised Nationally Determined Contribution, 2021	<p>document describes some efforts and initiatives that have been undertaken by Liberia to address climate change threats.</p> <p>The revised NDC includes climate change adaptation targets for eight sectors: Agriculture, Forests, Coastal zones, Fisheries, Health, Transport, Energy and Waste; as well as cross-cutting targets for urban green corridors.</p> <p>In the revised NDC, Liberia commits to reducing its economy-wide greenhouse gas emissions by 64% below the projected business-as-usual level by 2030, through a combination of the following: unconditional greenhouse gas reductions of 10% below business-as-usual, resulting in an absolute emissions level of 11,187Gg CO<sub>2</sub>e in 2030; with an additional 54% reduction conditional upon international support, which would result in an absolute emissions level of 4,537Gg CO<sub>2</sub>e in 2030.</p> <p>The NDC outlines a national system for monitoring and evaluation (M&amp;E) for adaptation actions, and measurement, reporting, and verification (MRV) for mitigation actions. It states the policy and institutional arrangements for NDC implementation, includes an analysis of the co-benefits of adaptation and mitigation, and highlights the direct and indirect investment needed to implement the NDC.</p> <p>EPA. (2021). <i>Liberia's Revised Nationally Determined Contribution</i>. Submitted to the UNFCCC on August 4, 2021. <a href="https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia%20First/Liberia's%20Updated%20NDC_RL_FINAL%20(002).pdf">https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia%20First/Liberia's%20Updated%20NDC_RL_FINAL%20(002).pdf</a></p>
Liberia National Adaptation Plan 2020 -2030	<p>The purpose of the document is to provide an overall framework to guide Liberia in developing, coordinating and implementing its National Adaptation Plan. The NAP process will implement a sectoral-based approach to climate change adaptation planning in Liberia, with adaptation priorities identified for crucial sectors such as agriculture, forestry, energy, fisheries, coastal zones and waste management. The NAP process also outlines the alignment between existing national, regional, and international policies and legal frameworks.</p> <p>The objectives of this NAP process are to:</p> <ul style="list-style-type: none"> <li>-Provide a framework and procedures for sharing of information of scientific, technical, and traditional knowledge on climate change risk management; and develop capacity-building measures;</li> <li>-Coordinate sectors (including both public and private sector stakeholders), institutions, and universities on climate change risk management using awareness with a focus on the improvement of climate risk management actions; and</li> <li>-Encourage participation from sector stakeholders and line agencies responsible for key sectors to identify and propose measures to promote adaptation to reduce climate change risk.</li> </ul> <p>EPA. (2021). <i>Liberia National Adaptation Plan 2020-2030</i>.</p>
Liberia's Second National Communication (SNC) the UNFCCC, 2021	<p>The SNC is a reporting activity that is required by Article 12 of the Convention and based on COP 8 Guidelines for National Communications for Non-Annex 1 Parties (Decision 17/CP.8). The SNC also enhances general awareness and knowledge on climate change related issues in Liberia.</p> <p>Liberia's Second National Communication gives an account of many climate change adaptation and mitigation initiatives and efforts undertaken in the country. Liberia's SNC includes: climate change vulnerability and adaptation assessment, national greenhouse gas inventory, greenhouse gas mitigation assessment, climate change technology transfer, and development assessment and capacity building to address climate change-related impacts.</p> <p>EPA. (2021). <i>Liberia's Second National Communication to the UNFCCC</i>. <a href="https://unfccc.int/sites/default/files/resource/SNC.pdf">https://unfccc.int/sites/default/files/resource/SNC.pdf</a></p>

Pro-Poor Agenda for Prosperity and Development (PAPD) 2018-2023	<p>The PAPD is a five-year national development plan aimed at addressing the basic needs of Liberians for income security, better access to basic services and greater opportunities for self-improvement in an enabling environment that is inclusive and stable. Its long-term goal is to raise the per capita income levels and economic status of Liberia to a middle-income country, as outlined under the Vision 2030 framework.</p> <p>The PAPD aligns with the African Union Agenda 2063 and Sustainable Development Goals (SDGs) across all three sustainability dimensions: economic, social and environmental with a special emphasis on human development and peace.</p> <p>Ministry of Finance and Development Planning. (2018). <i>Pro-Poor Agenda for Prosperity and Development (2018-2023)</i>. <a href="https://globalnaps.org/wp-content/uploads/2019/01/liberia-national-development-agenda-pro-poor-agenda.pdf">https://globalnaps.org/wp-content/uploads/2019/01/liberia-national-development-agenda-pro-poor-agenda.pdf</a></p>
National Policy and Response Strategy on Climate Change (NPRSCC), 2018	<p>The policy and strategy document ensures that climate change adaptation and mitigation issues are mainstreamed at the policy level and in key sectorial and cross-sectorial development efforts.</p> <p>The NPRSCC includes concrete policies and measures in specific areas on climate change adaptation and mitigation, actions, resource mobilization plans, and an M&amp;E framework.</p> <p>EPA. (2018). <i>National Policy and Response Strategy on Climate Change</i>. <a href="https://epa.gov.lr/content/national-policy-and-response-strategy-climate-change">https://epa.gov.lr/content/national-policy-and-response-strategy-climate-change</a></p>
Agenda for Transformation: Steps Toward Liberia Rising, 2013	<p>The country's national development document recognizes climate change adaptation and mitigation under Pillar V as a cross-cutting issue.</p> <p>Ministry of Planning and Economic Affairs. (2013). <i>Agenda for Transformation: Steps Toward Liberia Rising</i>. <a href="https://www.mfdp.gov.lr/index.php/docs/national-development-plan/agenda-for-transformation">https://www.mfdp.gov.lr/index.php/docs/national-development-plan/agenda-for-transformation</a></p>
National Disaster Management Policy (NDMP), 2012	<p>The National Disaster Management Policy provides an overall framework for disaster management in Liberia. The NDMP compliments other national plans, policies and legislations related to drought and climate change management, and it provides a platform for the harmonization of all disaster risks management strategies and policies in Liberia.</p> <p>It aims at integrating risk reduction, as appropriate, into development policies and planning at all levels of government, including the environment, land, coastal areas; agriculture and forestry sectors.</p> <p>National Disaster Management Agency. (2012). <i>National Disaster Management Policy</i>. <a href="https://www.mia.gov.lr/doc/Web%201%20National%20Disaster%20Risk%20Management%20Policy-clean-12102012.pdf">https://www.mia.gov.lr/doc/Web%201%20National%20Disaster%20Risk%20Management%20Policy-clean-12102012.pdf</a></p>
Liberia National Adaptation Programme of Action (NAPA) 2008.	<p>Liberia's National Adaptation Program of Actions (NAPA) provides measures to cope with the urgent and immediate needs associated with increasing climatic volatility and future climate change.</p> <p>The NAPA prioritizes three areas for adaptation: i) enhancing resilience in the agriculture sector to increasing rainfall variability through the diversification of crop cultivation and small ruminants rearing; ii) building of a national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters; and ii) building of coastal defense systems to reduce the vulnerability of urban coastal areas.</p> <p>The NAPA further recognizes long-term adaptation initiatives, including fisheries, health, and transport; and indicates that all will be implemented with an integrated gender-responsive approach to ensure progress toward efficient and effective adaptive capacity and resilience.</p> <p>EPA. (2008). <i>Liberia: National Adaptation Programme of Action (NAPA)</i>.</p>

	<a href="https://unfccc.int/resource/docs/napa/lbr01.pdf">https://unfccc.int/resource/docs/napa/lbr01.pdf</a>
The National Environmental Policy of the Republic of Liberia, 2002	<p>The overall goal of the national environment policy is to ensure long-term economic prosperity of Liberia through sustainable social and economic development, which enhances environmental quality and resource productivity on a long-term basis that meets the requirements of the present generation without endangering the potential of future generations to meet their own needs.</p> <p>Government of Liberia. (2002). <i>The National Environmental Policy of the Republic of Liberia</i>. <a href="https://files2.trunity.org/files/181701_181800/181704/liberia_national_environmental_policy-2.pdf">https://files2.trunity.org/files/181701_181800/181704/liberia_national_environmental_policy-2.pdf</a></p>

## 2.0 Impacts, Risks and Vulnerabilities

This section summarizes information found in key national adaptation documents. Detailed narratives of climate change impacts and vulnerability and the impact of climate change in the key adaptation sectors (agriculture, coastal zone, forestry, fisheries and health) are available in chapter 4 of Liberia's SNC (2021), chapter 3 of Liberia's revised NDC (2021) and chapter 4.6 of Liberia's NAP (NAP, 2020- 2030).

The Liberian population experiences the impacts of climate change including loss of livelihoods, incomes and settlements, as well as increased risks relating to adverse health impacts. The 2008 National Adaptation Programme of Action (NAPA) revealed that the adverse effects of climate change variability and extreme events were already significantly impacting Liberia. The climate hazards identified during the NAPA process included changes in rainfall patterns, extreme coastal flooding events, and sea level rise and its related impacts. The country faces significant climate change-associated risks due to high level of dependence on climate sensitive activities, including rain-fed agriculture, which makes the country vulnerable to climate variability and change.

Climate change impacts in Liberia are marked by irregular rainfall patterns, flooding, high temperatures, and coastal erosion. These hazards result in crop and livestock losses that intensify food insecurity, lead to loss of incomes and disrupt livelihood activities. Moreover, the coastal zone in Liberia is the most populated and economically vibrant area but coastal erosion continues to pose increasing threats to coastal cities, including major infrastructure and investments. Currently, the impacts of climate change induced coastal erosion are resulting in the displacement of coastal residents, disruption of livelihood activities, and the loss of lives and properties. The limited supporting infrastructure increases the level of vulnerability of the population. The combination of these direct impacts on the population could gradually undermine national security.

Women and children are the most vulnerable to the impacts of climate change. However, their unique knowledge and perspectives also provide opportunities for inclusive, equitable and efficient adaptation responses and coping strategies.

The key climate impacts in the priority adaptation sectors in Liberia are summarized below:

- Agriculture: increased crop loss and or crop failure as a result of extreme weather events, increased pests and weeds, and the increased likelihood of widespread pathogen outbreaks.
- Water Resources: rising temperatures contribute to insufficient water levels for basic sanitation and infrastructure, and diminished water quality.
- Fisheries: rising temperatures are leading to shifts in the distribution of species, loss of biodiversity, and meagre livelihoods for fisherpersons.
- Coastal Zones: coastal zone flooding results in erosion of the coastline, damage to houses and infrastructure, and poor sanitation of land and aquifers.

Future climate scenarios indicate that the temperature in Liberia will increase by 1.3 °C by 2050. This increase and projected changes in precipitation are expected to exacerbate the impacts listed above and to reduce productivity in the agriculture, forestry, fisheries, and water resources sectors.

### **3.0 National Adaptation Priorities, Strategies, Policies, Plans, Goals and Actions**

#### **3.1 Key priority sectors and strategies for adaptation**

Liberia's most recent climate change documents, the NAP (2020-2030), the SNC (2021), and the revised NDC (2021) identify the key national priority sectors for climate change adaptation as "Agriculture, Forestry, Coastal zones, Fisheries and Health". Consultations undertaken during the country-driven process to develop Liberia's Adaptation Communication recommended that Transport and Waste be included as cross-cutting sectors in this communication.

The adaptation strategies for the five priority sectors and cross-cutting actions are well documented in chapter 5 (*Adaptation strategies*) of Liberia's NAP (2020- 2030). The adaptation strategies in the NAP are aligned with Liberia's National Policy and Response Strategy on Climate Change (NPRSCC, 2018), and are meant to complement or upscale, but not duplicate, ongoing adaptation actions that are delivered through various projects and programs being implemented locally (county level) and nationally either by the government, civil society, private sector and academia. The NAP outlines the goals, gaps, indicators, expected outcomes and the responsible implementers or entities for each of the proposed adaptation strategies.

#### **3.2 Plans, goals and actions**

The NAP process was established in 2010 as part of the Cancun Adaptation Framework to complement the existing short-term oriented, "urgent and immediate" focused National

Adaptation Programmes of Action (NAPAs). Liberia's NAP (2020-2030) represents and outlines the country's ten-year adaptation plan. It aims to identify medium- and long-term adaptation needs and to develop and implement strategies and programmes to address those needs. These adaptation needs and programmes are consistent with the short- and long-term (2025 and 2030) adaptation targets, actions and policy measures set out in chapter 3.3 of Liberia's revised NDC.

The NAP process is continuous, progressive, and iterative; and it follows a country-driven, gender-sensitive, participatory and fully transparent approach. The NAP process plays a critical role in reducing vulnerability and building adaptive capacity by mainstreaming adaptation into all sector-specific and national development planning. The NAP document serves as a blueprint to guide the overall process and provides structure. The NAP will be in effect for ten years (2020-2030), during which time there will be ongoing monitoring and evaluation. In approximately 2029, the first period of implementation will be reviewed, and a new framework will be developed to guide the period from 2031-2040.

Liberia has conducted vulnerability and risk assessments in several priority sectors including agriculture, forestry, waste management, coastal zones, fisheries, and energy. Liberia has also engaged in ongoing efforts to build institutional and human capacities to support adaptation efforts. EPA, working in partnership with the United Nations Development Programme (UNDP), has implemented the GCF-funded "NAP Readiness project" to support the NAP process. This project has built capacity for climate change adaptation, mainstreamed gender considerations into Liberia's adaptation response, mainstreamed climate change in the budget process, and produced climate change vulnerability and risk assessments in consultation with its main stakeholders.

## **4.0 Support and Implementation Needs for Liberia**

The nation's key adaptation support and implementation needs are: *Financial needs, Technical needs, Capacity building needs, Technology needs, Information & awareness with consideration of political support*. Adequate financial support is very vital to address the support and implementation needs. The provision of reliable and adequate financial support for adaptation in Liberia will subsequently facilitate the achievement of other needs.

### **4.1 Financial: Cost of meeting adaptation needs under the NDC**

The Government of Liberia will continue to need international support, partnerships and cooperation to implement adaptation actions identified through her revised NDC targets and the NAP process. As such, this section of the AdCom aims to highlight the support that is needed to implement or achieve Liberia's NAP targets and the adaptation targets set out in the country's updated NDC (2021). This support includes but is not limited to flexible financing, climate-proofing infrastructure, capacity building and technical assistance to manage and address climate change adaptation. The Liberia's NDC costing and cost-benefit analysis estimated that a total

investment of USD 89,945,000 will be required to achieve its adaptation targets through 2025. Additional information regarding implementation costs to achieve Liberia's mitigation targets and other costs are provided in chapter 8 of the country's revised NDC (Republic of Liberia, 2021).

Liberia has developed a Monitoring and Evaluation (M&E) system for the NAP process to ensure accountability and its commitment to review and report on progress and support (finance, technology transfer and capacity building) received for implementation. Liberia recognizes that M&E is a fundamental pillar of its NAP and the adaptation component of the NDC for the purpose of transparency and accountability. Hence, the implementation of the country's M&E will also require full financing throughout the NAP and NDC implementation processes.

## **4.2 Information, awareness and knowledge sharing**

Liberia faces significant climate risks due to a high level of dependence on other nations or institutions in regard to information generation and awareness raising (EPA, 2013). Hence, Liberia is far behind in statistics and data collection, and civil awareness and education are needed to help the country reduce the high risks of climate change. The government of Liberia through many initiatives has engaged in addressing the high level of concerns with respect to the challenge of inadequate climate adaptation knowledge and information sharing at every level of the society. With the current efforts, more needs to be done in reaching out or decentralizing these efforts and initiatives across the country. Education, public awareness and hands-on training of vulnerable communities must be seen as a major priority to address the national issues and concerns relating to climate change that affect the wellbeing of the people.

Addressing this challenge requires more financial and technical support in line with the mandate of the UNFCCC through its Article 6 on climate education and training, and the Paris Agreement (Article 12) that states "Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement".

## **4.3 Technical, capacity building and technology needs**

Liberia, like most countries in the West African region, is experiencing the effects of climate change that include a rising sea level, increased intensity in rainfall, and rising temperatures. As the country grapples with the challenges posed by climate change, its economic, social, political and environmental development are threatened.

Liberia is one of 23 countries participating in Phase III of the Technology Needs Assessment (TNA) within the framework of the UNFCCC. The aim of the TNA process is to assist Liberia to identify and analyze priority technology needs, which can form the basis for a portfolio of

Environmentally Sound Technology (EST) projects and programmes to facilitate the adoption, transfer and diffusion of said technologies. TNAs are central to the work of Liberia on technology transfer and present an opportunity to track an evolving need for new equipment, techniques, practical knowledge and skills, which are necessary to adapt and reduce the vulnerability of sectors and livelihoods to the adverse impacts of climate change.

The country requires specific and modern climate change adaptation technologies across different sectors to address the direct impacts of climate change that are affecting the country's socio-economic and environmental development. Furthermore, there is a very high need to build the technical capacity of the country through direct hands-on training in regard to climate change data collection across different sectors (agriculture, health, coastal, forestry and fisheries). To address the barrier or gap of limited technical capacity across sectors, long-term and short-term technical training for specific adaptation components, including university programs and degrees, are highly recommended. The approach to training needs to change from the usual or regular theoretical workshop to practical hands-on training for national technicians to enable the country to achieve its adaptation targets. The training should cover specialized climate change programs in which the technicians acquire a certificate or diploma. Hence, these skills will enable technicians to operate the different technologies across sectors to enhance the resilience of vulnerable communities.

For adaptation, the TNA identified adaptation technologies in two sectors, Agriculture and Coastal zones, listed below:

- *Agriculture*: Value addition to agriculture products, improved storage (drying and freezing of agriculture products), integrated soil fertility management, crop diversification and new varieties, irrigation, ecological pest management and mixed farming.
- *Coastal Zone*: Integrated coastal zone management, flood early warning systems, rock revetments, groynes, seawalls, beach nourishment, planting of coconut trees along beaches, coastal wetland protection, and restoration of coastal vegetation (coconut trees, almond trees, mangroves, etc.).

A Barrier Analysis and Enabling Framework, followed by a Technology Action Plan (TAP) for implementation (adoption, transfer and diffusion) were conducted for three priority technologies per sector. The TAP reports provided an estimated cost for the implementation of each technology in the two adaptation sectors, and are available on the TNA website (<https://tech-action.unepdtu.org/country/liberia/>).

## **5.0 Implementation of Adaptation Actions and Plans**

Many efforts and initiatives have been undertaken and are being implemented in Liberia to address the alarming impacts of climate change that are disrupting livelihood activities and

destroying unique ecosystems, destabilizing socio-economic activities and accelerating environmental degradation. Some of the major climate change adaptation actions and plans are listed below.

For information on additional national efforts related to climate change adaptation, Liberia's NAP, SNC and revised NDC provide detailed accounts of adaptation actions that have been implemented up to 2021, as well as future plans and actions to be implemented up to the year 2030. As such, the following sections provide a high-level summary of major adaptation actions across the country.

## **5.1. Progress and results achieved as national adaptation efforts for recognition**

Section 1.2 (table 1) of this report provides information on national climate change policies.

### *Networking, knowledge and information sharing: Progress and achievements*

As climate change has become a major threat to Liberia's social-economic and environmental sustainability, the country has taken some initiatives to address the limited knowledge and information sharing among climate change actors that result from inadequate coordination among institutions. The measures taken by the government of Liberia and its partners aim to increase the resilience of vulnerable communities by ensuring that they have access to information on appropriate adaptive practices and knowledge sharing. In so doing, the government of Liberia has along with its partners developed national networks, platforms, programs and groups that are exclusively dedicated to sharing climate change national adaptation (and mitigation) knowledge and information.

- *Climate Change Knowledge Sharing Platform of Liberia (CCKSP)*. The Government of Liberia and its climate partners have established a national CCKSP. The design of the website was completed in December 2019 with technical support from UNDP with funding through the GCF. Through the CCKSP, the Liberia government aims to facilitate the expansion of knowledge and the building of capacities. The website serves as an online hub for sharing knowledge among researchers, policy makers, and non-governmental organizations (NGOs) in particular. It features adaptation and mitigation projects and hosts climate documents and discussions, and can be accessed at <http://ccksp.gnf.tf>.
- *Environmental Knowledge Management System (EKMS)*. The EKMS was funded by the GEF, through the UNDP. The EKMS is a web-based platform which provides free and open access to information from key government and partner institutions relating to the implementation of the Rio Conventions in Liberia. The EKMS was created to strengthen institutional coordination between the EPA and partner government institutions as well as NGOs that have direct linkages with environmental policies and development. It is intended to increase access and disseminate key information and promote adequate public

awareness and education. In so doing, it serves as a repository for all natural resource management institutions, data, information, and knowledge. It can be accessed at <https://ekmsliberia.info/>

- *Environmental Studies Master's Degree Programs at the University of Liberia (UL).* The University of Liberia, supported by the UNDP's NAP project, established a Master's Degree Program in Environmental Studies, including Climate Change. The establishment of this master's degree program is a major achievement for Liberia, a country that lacks adequate climate change expertise. The Environmental Studies curriculum is designed to offer a Master of Arts (MA) and a Master of Science (MSc) in various disciplines in environmental studies. The MSc and MA stress the importance of understanding the interrelationships between the humanities, social sciences, climate change, and natural science engineering, agriculture, and forestry disciplines. A more detailed account of this program is provided in chapter 9.2 of Liberia's SNC.
- *Other climate change knowledge and information sharing groups and networks/programs.* Liberia's SNC (chapter: 9.2.4) provides a detailed account of other climate change knowledge and information sharing groups or networks founded by youth groups, civil society organizations (CSOs) and local communities that are also dedicated to disseminating climate knowledge and information to climate change-affected, vulnerable and at risk populations. The initiatives taken by these groups highly complement the efforts of the national government on networking and climate information sharing.

#### Coastal zone: Progress and achievements

- *The Coastal Add-On Project (CAP).* Funded by the GEF through the UNDP, the project seeks to enhance resilience of Liberia's Montserrado County vulnerable coastal areas to climate change risks. The CAP constructed more than 900 linear meters of coastal defense revetment in the D-Twe Kru-town area from June 2018 to June 2019. The project seeks to reduce the vulnerability of the community's population and natural coastal environment to climate change risks and enhance the capacity of the community to recover from coastal erosion impacts.
- *Buchanan Coastal Defense Project.* A CAP supported project that was implemented by the Ministry of Mines and Energy. From 2016 to 2017, this project constructed about 250 linear meters of coastal defense revetment in Buchanan city, Grand Bassa County, along the Fanti-town and Atlantic street area to mitigate the alarming rate of coastal erosion that was of national concern.
- *Liberia Climate Change Assessment Project (2013).* Implemented by the United States Agency for International Development (USAID)-Liberia Mission to assist the Government of Liberia to develop climate data. This project assessed and developed

climate data and future climate projections for the country. The project presented the level of coastal vulnerability identified in the coastal zone of Liberia from climate change impacts and recommended sustainable interventions. This assessment is an asset for the coastal zone communities, and has been used by stakeholders to solicit funding from climate change donors in order to implement coastal adaptation projects.

- *Implementation of the Monrovia Metropolitan Climate Resilience Project (MMCRP).* Funded by the GCF, the project aims to enhance the resilience of vulnerable coastal communities to climate-induced sea-level rise by constructing coastal defense structures, developing a coastal zone management plan, and supporting livelihood diversification. Table 2 below highlights the objectives and some key adaptation benefits of the project to the population and the environment.

**Table 2:** Key highlights of the Monrovia Metropolitan Climate Resilience Project

<b>Key highlights of the MMCRP</b>	
<b>Objectives/ Overview</b>	<p>The MMCRP will enhance coastal protection, foster improved coastal management and present local communities with diversified climate-resilient livelihoods. The project will build the long-term climate resilience of coastal communities in Liberia by both addressing immediate adaptation priorities and creating an enabling environment for up-scaling coastal adaptation initiatives to other parts of Monrovia and Liberia. The interventions of the project are in three inter-related focus areas: i) coastal protection; ii) coastal management; and iii) diversified climate-resilient livelihoods.</p> <p>The project will address one of the most urgent adaptation needs in Monrovia by constructing a rock revetment to protect “West Point” against coastal erosion and storms. From an infrastructural perspective, the project will protect and build the climate resilience of approximately 10,800 people in West Point and avoid damages of up to USD 47 million to the individual and communal property of West Point residents as well as securing launch sites for fishing boats which will have a positive impact on the fisheries sector. The construction of this coastal protection infrastructure will form part of a strategic, cohesive coastal adaptation strategy using an Integrated Coastal Zone Management approach.</p> <p>The project will increase local adaptive capacity by strengthening gender- and climate-sensitive livelihoods and protecting mangroves in the Mesurado Wetland within Monrovia. Specifically, adaptive capacity in Monrovia will be increased by: i) safeguarding ecosystem services provided by mangroves and increasing the resilience of the ecosystems to climate change, through community co-management agreements between government and communities; ii) improving community knowledge on climate change impacts and adaptation practices; and iii) strengthening climate-sensitive livelihoods and supporting the uptake of climate-resilient livelihoods.</p>
<b>Primary Beneficiaries</b>	<p>The project will directly benefit approximately 250,000 people through coastal defense, enhanced livelihoods, and improved protection of mangrove ecosystems. In addition, the project will indirectly benefit approximately 1 million people through the adoption of a transformative, climate risk-informed Integrated Coastal Zone Management approach for Liberia, with the first phase of implementation focused on</p>

	the Monrovia Metropolitan Area. The combination of direct and indirect beneficiaries under this project will ultimately confer adaptation benefits on one quarter of the total population of Liberia.
<b>Expected outcomes</b>	<p><i>Output 1:</i> Protection of coastal communities and infrastructure at West Point against erosion caused by sea-level rise and increasingly frequent high-intensity storms.</p> <p><i>Output 2:</i> Institutional capacity building and policy support for the implementation of Integrated Coastal Zone Management across Liberia.</p> <p><i>Output 3:</i> Protecting mangroves and strengthening gender- and climate-sensitive livelihoods to build local climate resilience in Monrovia.</p>
Source: Government of Liberia and UNDP. (2021). <i>GCF Funding Proposal: Monrovia Metropolitan Climate Resilience Project</i> . <a href="https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp160.pdf">https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp160.pdf</a>	

- *Up-scaling Activities to Mainstream Climate Change Adaptation and Resilience to Enhance Livelihood Security for Coastal Communities in Sinoe County, Liberia.* Submission of project proposal to the GEF.
- *Improved Resilience through Community Adaptation Project.* A project under the Community Upgrading Funds implemented by Cities Alliance to support national efforts.

#### Agriculture sector: Progress and achievements

- *Enhancing Resilience to Climate Change by Mainstreaming Adaptation Concerns into Agricultural Sector Development* (UNDP-GEF). 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 ruminant rearing. The major goals of the project are to: 1) reduce to a considerable extent the impacts of extreme weather effects on farm productivity; 2) encourage and promote the diversification of sustainable agricultural productivity; and 3) increase the food production level of farm families.
- *Liberia Forest Program.* The Central Bank of Liberia reported that rubber is one of the dominant generators of state revenues, accounting for 17.5% of the total export receipts in 2017. Commercial rubber farms employ an estimated 30,000 people, and up to 60,000 smallholder households are involved in growing rubber trees. To ensure and continue this progress, the Liberia Forest Program is improving the rubber sector through technical and financial support. In particular, the program provides long-term financing to smallholder rubber farmers for the replanting and renovation of aging rubber plantations. Technical assistance is focused on adopting agronomic best practices and environmental sustainability, and improving adaptation to climate change.
- *National Food Security and Nutrition Strategy* (2009). The key objective of this strategy is to make certain that all Liberians have reliable access to the food they need “to live active and healthy lives”. Although the strategy encompasses the food security and nutrition needs of all Liberians, it prioritizes the needs of food for insecure and nutritionally vulnerable groups in the society, including the elderly and disabled.

- *Liberia Agriculture Sector Investment Program* (2009). The program seeks to transform Liberian agriculture and, in so doing, maximize the sector's contribution to national economic growth, employment and income generation, food and nutrition security, and poverty reduction.
- *Liberian Agricultural Sector Investment Plan* (2018-2022). It aims to increase and strengthen investment in the agricultural sector to increase resilience and build the country's adaptive capacity to climate change.

*Health sector: Progress and achievements:*

- *Liberia Health Systems Strengthening Project* (2013- 2018). The project has an estimated budget of USD 5 million from the Health Result Innovation Trust Fund and USD 10 million from the International Development Association.
- *Post-Ebola health system strengthening and epidemic prevention* (2016 to 2020). The general resilience of the system has been enhanced and the specific aspects of emergency care and disease control have been increasingly strengthened.

*Forestry sector: Progress and achievements:*

- *Liberia Forest Sector Project* (2016-2023). Aims to strengthen forest conservation and build capacity for the establishment of 30% forest cover reserve for adaptation and mitigation. The project provides opportunities for sustainable charcoal production and sustainable forest management. This will increase the ability of forest-dependent communities and forest ecosystems to adapt to the impacts of climate change.
- *Liberia Forest Program*. Financed under the USD 150 million commitment of the Liberia-Norwegian partnership agreement. Considering that forests provide vital ecosystem services that are pivotal to human well-being and sustainable development, the government of Liberia through its PAPD is strengthening policy and legal frameworks for sustainable forest management to provide opportunities for forest dependent communities to improve their livelihoods against the negative impacts of climate change.
- *Liberia National Forestry Policy and Implementation Strategy* (2006). This policy presents several strategic objectives, including optimizing the economic, social and environmental benefits from forest resources to ensure that forestry development contributes to national development goals; and coordinating on international commitments with other relevant branches of government.

*Fishery sector: Progress and achievements:*

- *Net Exchange Program* (2021). Ongoing in the nine coastal counties of Liberia, the program is geared towards exchanging monofilament nets for multifilament nets. The

program is funded by the World Bank through the government of Liberia's National Fisheries and Aquaculture Authority.

- *Liberia Sustainable Management of Fisheries Project (LSMFP)*. Approved by the World Bank in 2021, the project is funded by the International Development Association (IDA) and includes US\$20 million grant and US\$20 million credit. The project will improve conditions for fishermen and women, increase value addition for export, help address the economic vulnerability of the Liberian economy to climate change, and reduce vulnerability of food security. The LSMFP will support the establishment of an industrial and an artisanal fish landing site at the Mesurado Pier in Monrovia, and other artisanal landing sites in Margibi, Maryland, Grand Bassa, Sinoe and Grand Kru counties.

## 5.2. Cooperation on enhancing adaptation at the regional and international level

Liberia recognizes the current and future threats of climate change and has undertaken several initiatives to address those direct threats that impact the country's socio-economic and environmental progress and its people. Key among those initiatives to address the threats of climate change to the country are the ratification of the UNFCCC, the Kyoto Protocol and the Paris Agreement; reporting to the UNFCCC through Liberia's National Communications and this AdCom; and the preparation of a number of climate change plans and strategies including the NAPA, the NAP, and the National Policy and Response Strategy on Climate Change. These initiatives all aim to achieve the country's commitments to address climate change.

## 5.3. Barriers, challenges and gaps related to the implementation of adaptation

Various national documents, including Liberia's SNC have identified the major barriers, challenges and gaps related to the implementation of adaptation-related projects and the NAP. These are summarized below in Table 3.

**Table 3:** Identified national barriers and gaps to adaptation implementation

Barrier Category	Specific barrier	Barriers Description
Financial	High cost of implementation of adaptation plans and projects	Nationally, there is no reliable available budgetary allotment to support the implementation of climate adaptation programs (e.g., construction and maintenance of coastal defense systems, agricultural programs for adaptation) due to competing national development projects; and the high cost of implementing adaptation projects.
	Limited access to funding and lack of national budgetary support	
Information and Awareness	Limited and inadequate information and awareness in the rural areas of Liberia	Limited and inadequate dissemination of information and climate change knowledge sharing in rural Liberia makes it difficult to adapt to climate change impacts that affect lives, properties and the environment in those areas.
Technical	Limited technical expertise and technologies in most of the different adaptation	National expertise is lacking across the different adaptation sectors to support the implementation of major technical adaptation programs.

	sectors or disciplines	
Legal and Regulatory	Limited specific adaptation policies or frameworks for some sectors	The limited or lack of specific climate change adaptation policies for some sectors makes the implementation of sustainable management difficult.
Political	Lack of political will	There is limited political will to support or approve budgetary allotments for the implementation of adaptation projects and activities.

#### 5.4. Good practices, lessons learned and information-sharing

With the help of partners, the government of Liberia has developed some key national networks, platforms, programs and groups in an effort to increase awareness and promote information and knowledge sharing that will enable adequate coordination among institutions at all levels. Additional initiatives regarding climate change knowledge and information sharing that can be added to those listed in section 5.1 include:

- *Climate Saturday*. Run by the Action for Climate Empowerment focal point of the EPA, the aim of this program is to buttress national efforts that aim to promote initiatives to enhance action to adapt to climate change by taking discussions to local community dwellers in local languages.
- *Talk the Environment*. An environmental awareness radio program.
- *Knowing Your Environment (KYE)*. An environmental knowledge and information sharing program that aims to promote climate change knowledge sharing.

The lessons retained from these good practices of information sharing included an improved understanding of raising awareness and disseminating information about climate change issues. The challenges and gaps encountered during these initiatives provided learning that was used to improve the country's revised NDC and the NAP process. Furthermore, the lessons learned from the implementation of climate change adaptation activities in the country will need to be collected and submitted to policymakers to influence future adaptation implementation and decision making. The decentralization of climate information and knowledge is recommended.

#### 5.5. Monitoring and evaluation

Liberia's NAP provides an M&E system to ensure the continued building of resilience and reducing of vulnerabilities to climate change in the longer term. To track progress in building the adaptive capacity of climate change-affected and vulnerable population and systems, Liberia has developed a theory of change and proposed some indicators to track the major changes expected in resilience up to the year 2030. The M&E process for adaptation has six elements:

1. Preparation for adaptation;

2. Climate change risk and vulnerabilities assessment;
3. Adaptation needs;
4. Assessing adaptation needs;
5. Implementing adaptation into policies; and
6. Monitoring and evaluating adaptation.

Liberia's NAP indicates that the national M&E system will collect information on the progress of the NAP's implementation; assess and analyze the information; and provide outputs for the required reporting on progress to the UNFCCC. The reviewed outcomes and lessons learned will inform regular updates of the NAP, and the process will involve relevant line ministries, agencies and entities. It is aligned with the M&E Framework of Liberia's National Policy and Response Strategy on Climate Change (2018), and EPA is the lead entity on the NAP's M&E.

Liberia's NAP process is also aligned with the national MRV system with regard to the governance structure which allows the EPA to lead on the coordination and reporting of all climate-related MRV activities to the UNFCCC and other bodies.

## **6.0 Contribution to Other International Frameworks and Conventions**

Liberia is party to at least ten multilateral environmental agreements which include but are not limited to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); the Cartagena Protocol on Biosafety; the Ramsar Convention on Wetlands of International Importance; the Convention on Migratory Species (CMS); and the Montreal Protocol on Ozone Depleting Substances. Liberia's efforts under the two other Rio Conventions, the United Nations Convention on Biological Diversity (CBD) and the UN Convention to Combat Desertification/ Land Degradation (UNCCD), are closely aligned with Liberia's adaptation priorities.

In 2015, Liberia committed to the attainment of the Sustainable Development Goals (SDGs), and has made a significant progress and several efforts in this regard. Liberia has aligned its National Policy and Response Strategy on climate change with Agenda 2030 of the SDGs. The country's current development agenda (PAPD) and the SDGs are also aligned. In an effort to support and continue Liberia's commitment to achieve Agenda 2030, the UNDP in Liberia has supported the government to develop a roadmap for the domestication of the SDGs into the country's next national development plan. The roadmap outlines the key steps to translate the SDGs into plans, policies and programmes. This will ensure that climate change adaptation issues are mainstreamed at the policy level and in key sectorial and cross-sectorial development efforts.

Liberia's attainment of the SDGs will help build and upscale the country's ability to adapt to climate change-related negative impacts through the improvement of climate smart agricultural practices, provision and development of climate adaptation technologies, access to climate information and communications technology (ICT), climate change education and technical training, sustainable environmental and resources management, and enhancement of gender participation in climate adaptation activities or initiatives.

Liberia signed the Sendai Framework for Disaster Risk Reduction (SFDRR) and developed a National Action Plan for Disaster Risk Reduction: 2016 to 2021. The mission of the action plan is "to apply and effectively implement all legal and institutional frameworks and innovative technological approaches to reduce national and local community vulnerabilities and disaster risks within the context of sustainable development". The vision of the national action plan is, "by the year 2030, Liberia has established measures to effectively prevent or reduce the impact of and recover from natural and human induced disasters".

Liberia also has a National Disaster Management Agency (NDMA) that upholds the SFDRR. The NDMA in partnership with EPA and UNDP in 2019 commenced the development of a disaster risk assessment and national risk reduction strategy for Liberia. These efforts and initiatives provide guidance and direction for actions to prevent or manage and reduce the risk of disasters, and to promote resilience for all at the national and regional levels in line with the Sendai Framework.

Liberia became partner to the Climate and Clean Air Coalition (CCAC) in 2014 with the goal of taking national action to reduce short-lived climate pollutants from diesel fuel methane, tropospheric ozone and other fine particulate matters that have impacts on health, agriculture and the climate.

## **7.0 Gender-responsive Adaptation Action and Traditional Knowledge, Knowledge of Indigenous Peoples and Local Knowledge related to Adaptation**

The impacts of climate change affect men and women differently. This is mostly due to their social responsibilities, roles, power relations, culture and other factors that often lead to women having limited access and control over resources, less inputs to decision making, and limited and inadequate involvement and participation in many key societal affairs. In order to address this gap of inequality, the government of Liberia has been involved in many initiatives, including the development of Liberia's National Gender Policy that guarantees the rights of women to access justice. This policy also calls for and promotes equal rights to education, jobs and many more opportunities regarding gender considerations.

In adherence to the National Gender Policy of Liberia, the involvement and participation of women and youth groups has significantly increased in many national processes, projects, and programs. Some national processes relating to climate change that have a very high level of gender representation include Liberia's NDC revision and validation process, Liberia's NAP process, Liberia's TNA process, and the development of this national Adaptation Communication document. Below are examples of how adaptation processes in Liberia have engaged women and youth.

- *Liberia's NDC National Gender Dialogue.* The National Gender Dialogue was held under the theme "Women leading for climate action; a catalyst for Liberia's NDC ambition" from October 27 to 28<sup>th</sup> 2020 in Gompa City, Nimba County. The goal was to incorporate gender inclusiveness in Liberia's NDC for effective and efficient implementation. The dialogue championed the advancement of women's economic empowerment and participation in the revision process of Liberia's NDC; ensured that women remained an integral part of Liberia's NDC revision process; and ensured inclusiveness in environmental planning and decision-making through capacity building for women-owned enterprises to enable their integration into economic activity, environmental and climate change discussions, and decision-making.
- *NDC's National Youth Dialogue.* The NDC revision process also had a youth dialogue that was held on September 16, 2020 in Gompa City, Nimba County. The meeting brought together over 35 youth organizations from across Liberia. The Youth Dialogue produced the "Ganta Declaration" which commits the youth population of Liberia to remain engaged throughout the NDC development and implementation process. Since the signing of this Declaration, the youth community of Liberia has become engaged in the NDC process.

*Examples of traditional knowledge, knowledge of indigenous peoples related to adaptation:*

Liberia's TNA reports (Agriculture, Energy and Coastal zone) on the adoption and transfer of adaptation and mitigation technologies in Liberia provide significant information and details of gender-inclusive adaptation actions and traditional knowledge of indigenous peoples and local knowledge with respect to climate change adaptation in Liberia. The account below focuses on a traditional knowledge relating to adaptation in the coastal zone of Liberia.

The 2019 TNA coastal zone report (chapter: 3.3) describes that hard engineering coastal defense measures are commonly used in Liberia. Soft or green measures of coastal defense systems have been practiced by indigenous peoples in Maryland and Grand-Kru Counties for more than 60 years. The green measures consist of planting of coconut trees and occasionally almond trees along the beaches. The planting of the coconut trees started during the 1950s in the Maryland area and 1980s in the Grand Kru area. Residents of those counties reported that the coconut trees or plantations along the beaches were primarily planted to be used as food or for agriculture

purposes as a means to generate income. The trees also provided shelter for their homes, protecting them against the ocean's high intensity winds that often destroy roofs. The trees also serve as a preventive measure against coastal erosion. Beaches (shorelines) with coconut trees plantation are much more stable than those without them as it relates to beach degradation by coastal erosion. Most of the coconut tree plantations along those beaches were planted by women and youth.

The TNA's coastal zone report encourages the planting of more coconut trees along beaches in order to reduce the level of vulnerability to the impacts of coastal erosion and flooding. This requires external financial and technical support to facilitate and improve the technique and its process. The report recommends and encourages the widespread adoption of such green measures and technologies and their diffusion across Liberia as they are environmentally sustainable coastal technologies that provide many benefits (environmental, economic, agricultural, and ecological).

## **8.0 Next Steps**

The proposed next steps with respect to adaptation focus on the implementation of the strategies and pathways to realize Liberia's national adaptation priorities and plans; and reporting on progress, gaps and challenges, and needs. In this regard, Liberia will develop implementation modalities for its NDC that will serve as a tool or guidance to help meet the country's climate change adaptation and mitigation targets over the next five years (2020- 2025). These modalities will outline steps to implement Liberia's NAP.

As such, the proposed next steps for adaptation will focus on the following:

- a. Defining Liberia's NDC implementation modalities;*
- b. Accessing financing for the identified adaptation implementation and support needs;*
- c. Achieving / realizing Liberia's National Adaptation Plan (NAP, 2020-2030); and*
- d. Reporting on the implementation of adaptation plans and actions.*

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