

8.0 Gabon

AAP	Africa Adaptation Programme
BMU	Bundesministeriums für Umwelt, Naturschutz und Reaktorischerheit (Germany)
COMIFAC	Central African Forests Commission
GDP	Gross Domestic Product
FAO	Food and Agriculture Organization of the United Nations
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

Straddling the equator, the country of Gabon in west-central Africa has a narrow coastal plain and some savannah ecosystem in its eastern and southern regions. The remainder of the country's interior, about 85 per cent of its 267,667 km² area, is covered by tropical rainforests. Home to approximately 1.5 million people¹¹⁸ (86 per cent of whom live in urban areas), Gabon is one of the most developed countries in sub-Saharan Africa. Much of its income is derived from oil revenues, although the country also has a strong tourism industry. Agriculture remains a critical economic sector, engaging 52 per cent of the country's work force (USDS, 2010). Despite the countries relatively high GDP per capita (US\$8,600 in 2010), many people in the country remain poor. Over 90 per cent of Gabon's income is earned by 20 per cent of its population, while one-third of its citizens live in poverty (USDS, 2010).

A. Adaptation Needs and Priorities

Gabon currently enjoys an equatorial climate. The country is hot and humid all year, receiving 1500 mm to 4000 mm of annual precipitation. This rain falls principally in two wet seasons: April to June, and October to December (MFWFEPN, 2004).

Model projections suggest that its climate will become warmer over time; temperatures are projected to increase by between 0.9 and 2.5°C by the 2060s, with warming being faster in the interior. As elsewhere in Middle Africa, this warming will be characterized by an increase in “hot” days and nights and a decrease in “cold” days and nights (McSweeney et al., 2008). Projected changes in precipitation in Gabon vary across climate models, ranging from a projected decrease of 22 per cent to a projected increase of 25 per cent by the

¹¹⁸ By 2050, the population of Gabon is expected reach 2.5 million (UNFPA, 2010).

2090s. Most models agree that an increasing proportion of the annual total rainfall will fall in heavy events—up to 11 per cent (with increases for all seasons) (McSweeney et al., 2008). Projected sea level rise along Gabon coast could be between 0.13 meters and 0.56 meters, depending on the emissions scenario (McSweeney et al., 2008).

Based on current understanding of the projected changes in its climate, Gabon identified four particularly vulnerable sectors in its First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC): coastal zones, water resources, agriculture and health (MFWFEPN, 2004).

The **coastal zone** was identified in Gabon's First National Communication as the region of the country most vulnerable to the impacts of climate change. The zone is home to 75 per cent of the country's population, in part because two of its major urban centers are located on the coast. The country's capital, Libreville, is located on the Gabon River estuary and is an average of 6.5m above sea level. Port Gentil is the center of Gabon's petroleum production and is an average of 4m above sea level. Additional concerns are the country's large offshore exclusive economic zone with significant petroleum exploitation and vast fisheries potential. Sea level rise is expected to:

- Increase coastal erosion up to three meters per year in Libreville and six meters per year in Cap Lopez (Port Gentil);
- Increase the risk of flooding, particularly in estuaries and deltas;
- Increase the disbursement of coastal pollution, putting fisheries and mangroves at risk;
- Increase the salinity of coastal aquifers;
- Increase risk of habitat destruction for coastal communities in Libreville and Port Gentil; and
- Resulting challenges for population management.

In response to these concerns, Gabon has proposed several different types of actions:

- Active adaptation responses: protection of urban and peri-urban coastal zones, particularly Libreville and Port Gentil (and their surroundings); and the protection of mangroves and sensitive/degraded coastal zones;
- Passive adaptation responses: such as the displacement and resettlement of affected populations (particularly for Port Gentil); and environmental awareness-raising and education programs;
- Supporting actions: including sustainable management of water, fishery and vegetation resources; protection and concerted development of the coastal zone, including better control of coastal erosion and pollution; strengthened institutional frameworks

for coastal zone governance; strengthened judicial frameworks and regulations; and improved capacities and national expertise on coastal zone management; and

- Putting in place integrated, multidisciplinary research policies for coastal zone management.

The **freshwater resource** vulnerability of Gabon relates primarily to the impact of increased rainfall in some areas, which could potentially lead to: increased volumes for rivers; increased erosion and loss of soil; impacts on vegetation; proliferation of marsh lands; impacts on fisheries and fish distributions; increase in risk of water-borne diseases; accelerated degradation of roads; and habitat destruction for riverine populations. In light of these concerns, proposed adaptation actions included:

- Protection measures: the construction of dikes for protection against flooding and to control water flow; the construction of dams and basins for increased water storage capacity; and the protection of embankments against erosion, particularly around Lambaréné (capital of Moyen-Ogooué district).
- Maintenance activities: dredging activities to reduce water flow resistance; enlarging waterways to lower water levels; and reducing the number of waterfalls and rapids to improve navigability;
- Early warning system: installation of an early warning system for the Ogooué Basin at Lambaréné to monitor and announce rapid water level rise;
- Prevention (for Lambaréné): establishing a risk prevention plan, with a particular focus on areas prone to flooding; and undertaking an associated mapping exercise to identify at-risk areas and construction guidelines; and
- Social measures for populations living in at-risk areas: resettlement programs; and a pilot project in new home construction techniques which are less vulnerable to flooding.

The **agricultural sector** is also of concern to Gabon, given that only 5 per cent of this heavily-forested country is arable and is currently used for plantation and subsistence farming. Changes in temperature and rainfall could influence the physical, chemical and biological composition of the country's soils, and agriculture production is expected to decrease under a medium warming scenario. Additional concerns for Gabon include the potential for increased erosion due to more rainfall, changes in soil quality, and greater water content in the soil altering the balance of micro-organisms. Key actions to reduce vulnerability within the agriculture sector were identified as being:

- Research and define critical climate thresholds for local crops;
- Improve technical capacities to support traditional cultivation practices in the face of climate change;
- Soil protection and restoration programs to improve fertility for increased productive capacity;

- Initiate agroforestry projects in an effort to enrich soils; and
- Repair and rehabilitate weather stations in the country’s interior.

Human health concerns for Gabon focus primarily on the potential increase in water-borne diseases. Proposed responses include:

- Strengthen screening programs for river blindness;
- Evaluation of the possibilities for improved delivery of clean drinking water;
- Reduce deforestation rates; and
- Analysis of the links between population displacement plans and the risk of climate-related disease.

B. National Level Policies and Strategic Documents

Under the guidance of the Ministry of Forests, Water, Fisheries, the Environment and the Protection of Nature, Gabon prepared its First National Communication in 2004. Gabon, with the highest level of development among countries in Middle Africa, is not characterized as an LDC, and as such will not be preparing a National Adaptation Programme of Action. Since this time, the Government of Gabon has made climate change a key component of its “Green Gabon” initiative, along with biodiversity, sustainable development and the fight against pollution.

More recently, in May 2010, the government established a Climate Council to develop national policies relating to climate change, as well as prepare a National Climate Plan. The development of this plan will require the participation of a number of committees representing a variety of stakeholder groups from the government, private sector and civil society (energy, industry, agriculture, forests and fisheries, transport, waste, public awareness, training and research, telecommunications). Once complete, the National Climate Plan will be integrated into the country’s broader development plan. The Climate Council reports directly to the Head of State. The government has also established a National Carbon Agency and a National Observatory to monitor climate risks.

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

Name of Policy Action	Government Division Responsible	Status	Sector(s) of Focus	Summary description
1. First National Communication to the UNFCCC ¹¹⁹	Ministry of Forests, Water, Marine fisheries, the Environment and the Protection of Nature	Submitted December 2004	Coastal zones, water, agriculture, human health	Gabon’s First National Communication describes the country’s efforts to implement the UNFCCC. The document presents the national context, provides an inventory of national greenhouse

¹¹⁹ UNFCCC, http://unfccc.int/essential_background/library/items/3599.php?such=j&symbol=GAB/COM/1%20B#beg

Name of Policy Action	Government Division Responsible	Status	Sector(s) of Focus	Summary description
				gas emissions, evaluates national vulnerabilities to climate change, and presents mitigation and adaptation options for addressing these impacts and vulnerabilities.

C. Current Adaptation Action

The number of climate change adaptation projects underway in Gabon is very low relative to other Middle African countries. The country has no national projects underway, but is part of the following two regional programs:

- Gabon is one of four Middle Africa countries participating in the “Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa” program, or Africa Adaptation Programme. This multi-national, US\$92 million initiative was launched in 20 African countries by the Japan International Cooperation Agency in 2010. The Gabon component of the program is a US\$2.465 million project focused on supporting institutional capacity for better adaptation in the country’s coastal zones. Given the significant size of the project, this is the largest adaptation activity underway in the Gabon. It is designed as a capacity building and policy formation project, and by aiming to strengthen coastal zone resilience directly addresses the priority vulnerability assessment of the First National Communication (UNDP, 2010).
- As a member of the Central African Forests Commission (COMIFAC), Gabon will also benefit from its current project on climate change scenarios for the Congo Basin. The extent of activities being carried out in Gabon under the project is unknown, but it is hoped that these scenarios will enable decision makers in the country and throughout the COMIFAC region to adapt and prepare their natural resource management strategies to meet the regional challenges of climate change (BMU, 2010).

Table 2: Current Adaptation Projects and Programs active in Gabon

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
Participation in Regional and Global Actions							
1.	Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa (or Africa Adaptation Program – AAP) ¹²⁰	Under this program, UNDP will assist 20 African countries in implementing integrated and comprehensive adaptation actions and resilience plans. The projects will ensure that national development processes incorporate climate change risks	Japan International Cooperation Agency Budget:	UNDP	Capacity building; Policy formation and integration; Knowledge	2008 – 2011 Government	African: 20 African countries ¹²¹ including Cameroon, Gabon,

¹²⁰ ALM, <http://www.adaptationlearning.net/program/africa-adaptation-programme> and UNDP-APP, <http://www.undp-aap.org/>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)	
	and opportunities to secure development gains under a changing climate. UNDP will help countries establish an enabling environment and develop the capacity required to design, finance, implement, and monitor long-term and cost-effective adaptation policies and plans.	US\$92 million		communication			Republic of Congo, and STP	
		<p><i>In Gabon: “Supporting institutional capacity for better adaptation in coastal zones in Gabon”¹²²</i></p> <ul style="list-style-type: none"> • <i>Objective:</i> To put in place a stronger institutional framework for the management of the country’s coastal zone, home to the majority of the Gabon’s population. The project will include a strengthening of scientific and technical capacities for coastal management, and will demonstrate innovative practices and technologies for the rehabilitation and management of coastal zones. • <i>Implementing agency:</i> Gabon Ministry of Water, Forests, the Environment and Sustainable Development • <i>Budget:</i> \$2.465 million 						
2.	Climate Change Scenarios for the Congo Basin ¹²³	The project aims to provide national and regional decision-makers with climate change scenarios that have been calculated specifically for the Congo Basin, and which will enable them to adapt natural resource management strategies to climate change.	BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany)	GIZ and COMIFAC	Research; Policy (integration)	2009 – 2011	Climate information services	African: COMIFAC (Burundi, Cameroon, CAR, Chad, Congo, DRC, Equatorial Guinea, Gabon, Rwanda, Sao Tome and Principe)
<i>In Gabon: More information required</i>								

¹²¹ These countries are: Burkina Faso, Cameroon, Congo, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Malawi, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome et Principe, Senegal, Tanzania and Tunisia.

¹²² UNDP, <http://www.undp-adaptation.org/portfolio/projectR.php?id=116>

¹²³ BMU, <http://www.bmu-klimaschutzinitiative.de/en/projects?p=1&d=550>

D. Proposed Adaptation Action

Gabon identified a number of potential adaptation strategies in its First National Communication in its key vulnerable sectors: coastal zone management, freshwater resources, agriculture and human health (MFWFEPN, 2004). The government also identified a number of adaptation projects and programs that could be implemented to help the country deal with climate risks (see Table 3 below).

Action to address some of the priorities identified in the First National Communication has been initiated. The country's first proposed project, "Scoping Project Examining the Strategic and Operational Requirements of a Coastal Zone Management Plan," for example, is related to the country's ongoing AAP project. As well, Gabon's National Observatory, focused on identifying climate risks, may be linked to the proposed establishment of a national observatory for the country's coastal zone, a national center for oceanographic facts and information and a national center for climate risk management.

Table 3: Proposed Adaptation Projects and Programs in Gabon

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
1. Scoping project examining the strategic and operational requirements of a coastal zone management plan	To integrate climate change into coastal zone management plans, and to put into place a coherent and efficient organizational plan detailing the responsibilities of various national institutions, depending on their strengths and competences.	Policy formation and integration	Coastal zone management	Coastal zone
		Notes: May be partially addressed through subsequent climate action.		
2. Creation of a national observatory for the coastal zone	To put in place an observation system for the coastal zone, with the goal of creating a more coherent approach to coastal zone activities, including production and protection.	Field implementation	Coastal zone management	Coastal zone
		Notes: May be partially addressed through subsequent climate action.		
3. Research project on soil conservation in coastal villages	To survey current soil conditions in coastal communities, identify at-risk regions, and elaborate a response plan.	Research	Coastal zone management	Coastal zone
		Notes:		
4. Vulnerability assessment for lake, river and lagoon zones	To evaluate vulnerabilities to climate change in lake, river and lagoon areas	Assessment	Freshwater supply	Lake, river and lagoon zones
		Notes:		
5. Research project on the dynamics of vulnerable ecosystems and impacts on associated socio-	To survey vulnerable ecosystems and identify impacts of climate change on socio-economic activities	Research	Ecosystem conservation	Vulnerable ecosystems
		Notes: May be partially addressed through subsequent climate action.		

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
	economic activities			
6.	Establishment of a national center for oceanographic facts and information	Research; Knowledge communication	Marine management	Coastal zone
		Notes: May be partially addressed through subsequent climate action.		
7.	Establish a center for climate risk management	Capacity building; Field implementation	Climate information services	National
	To establish a national center on climate risk management and a network of experts who can help to evaluate climate risks faced by various sectors and identify response strategies	Notes: May be partially addressed through subsequent climate action.		

E. Assessment

Gabon is the most developed country in the region and its vulnerabilities to climate change are relatively low. Nevertheless, the government of Gabon has integrated climate change into national policies more than in any other country in the region. Also, through the structures of the new Climate Council (see Section B), the government has tried to create a participative process for formulating the national climate plan; by involving a wide variety of stakeholders, they are helping to ensure broad engagement and implementation.

Gabon’s coastal zone is home to most of the country’s population, and was identified in its National Communication as being the region most vulnerable to the impacts of climate change. Coastal zone management has therefore fittingly been the focus of existing and proposed adaptation projects. Nevertheless, the focus on coastal zone management seems to come at the expense of other sectors that should still be considered vulnerable to climate change: water, agriculture (food security) and human health. While not identified as a priority area for adaptation efforts, attention to the differential impacts of climate change on gender also warrants greater attention. Projects and policies relating to these other sectors could be developed and implemented.

Adaptation activities remain very high-level thus far and opportunities for community-based adaptation projects could be explored. The capacity of domestic civil society to implement adaptation programs might be improved given that the current projects are being implemented by government ministries, external partners and United Nations agencies.



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