

7.0 Guinea

ENDA-TM	Environment and Development Action in the Third World
IDRC	International Development Research Centre
LDCF	Least Developed Countries Fund
MAEEEF	Ministry of Agriculture, Livestock, Environment, Water Resources and Forests (Ministère de l'agriculture, de l'élevage, de l'environnement, des eaux et forêts)
MMGE	Ministry of Mines, Geology and Environment (Ministère des mines, de la géologie et de l'environnement)
NAPA	National Adaptation Programme of Action
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

The West African country of Guinea (or Guinea-Conakry) extends from the Atlantic Ocean eastward through four regions: the lowland region of Lower Guinea that forms part of the Guinean forest-savanna mosaic eco-region; the mountainous Middle Guinea in the central region of the country; the north-eastern savannah region of Upper Guinea; and the south-eastern rainforests of Forest Guinea. Twenty-two West African rivers have their origins in Guinea's mountains, including the Niger, Gambia and Senegal Rivers. Although the country possesses major mineral and hydropower resources (including almost half of the world's bauxite reserves), nearly half of Guinea's approximately 10.3 million inhabitants live below the poverty line (CIA, 2010). Agriculture continues to be the dominant livelihood activity in the country, providing employment for 76 per cent of the labor force (CIA, 2010). The country also is experiencing a number of environmental concerns, including the slow degradation of natural resources (UNDP, 2009), unsustainable agricultural practice, bushfires, and uncontrolled exploitation of forest and wildlife resources (MAEEEF, 2007). Large areas of agricultural land are currently abandoned due to soil salinization and acidification. These economic and environmental factors affect Guinea's resilience and increase the likelihood of climate variability and climate change affecting local livelihoods and the country's overall long-term national development (UNDP, 2009).

A. Adaptation Needs and Priorities

Guinea's current climate varies from being tropical along its coastal region and within much of its interior to being drier with greater variations in temperature in the Sahalian Upper Guinea. Climate projections in Guinea are uncertain but suggest that Middle and Upper Guinea will see significant warming by 2100 (varying from an increase of 0.3°C to 4.8°C), and that temperatures will also rise but to a lesser

extent in the Lower Guinea and Forest Guinea regions (0.2°C to 3.9°C). Significant decreases in rainfall are also possible—projections suggest that rainfall could decrease by 34.5 per cent by 2050 and by 40.4 per cent by 2100—along with greater rainfall variability and risk of floods, droughts, storms and negative impacts on surface and groundwater resources (MAEEEF, 2007). Climate change-induced sea level rise of anywhere from 15 cm to 78 cm could also affect Guinea’s coastal areas (UNDP, 2009). This combination of changes is expected to negatively affect Guinea’s key economic sectors. Socio-economic groups judged to be most at risk include farmers, gardeners, stockbreeders, fishermen, fish smokers, salt producers, traders, transporters, hunters, brick manufacturers, and operators of mines and quarries (MAEEEF, 2007).

Based on analysis completed through its Initial National Communication (submitted in 2002) and its National Adaptation Programme of Action (NAPA) submitted in 2007, Guinea has identified the following vulnerable sectors (MAEEEF, 2007):

- *Agriculture:* Climate change is projected to cause infrastructure destruction, saline intrusion, shortages in potable water and the loss of agricultural land and/or decreased yield (UNDP, 2009). Of particular concern is rice cultivation in Lower Guinea, which represents approximately 42 per cent of region’s agricultural production.
- *Water resources:* The flow of water in river and streams is expected to undergo a significant reduction, especially in northern regions. For example, flow in the Niger River is expected to be reduced by anywhere from 16 to 54 per cent. Impacts on potable water resources, including salt-water intrusion, might cause a proliferation of waterborne diseases (UNDP, 2009).
- *Forests:* It is expected that current vegetation native to specific regions of the country will shift their location. Mangrove forests, which play a fundamental role in maintaining an environmental equilibrium in the coastal zones, are one of the resources most vulnerable to the impacts of climate change (UNDP, 2009).
- *Coastal regions:* Guinea’s fisheries sector is likely to be adverse affected as the productivity of marketable species is likely to be reduced. Moreover, the smoking of fish, an activity that is extremely dependent on the mangrove forests, will be reduced (UNDP, 2009).

The capacity of Guinea to respond to these projected impacts is hampered by a number of factors, including: the low financial capacity of most households, which affects the adaptive capacity of communities; the need to adapt measures or practices to local conditions and the insufficient capacity to implement those measures; lack of technical support from government experts; low institutional and financial capacity of the decentralized administration; lack of community retention of best practices and lessons learned from previous initiatives; and the poor condition of infrastructure due to poor maintenance and low investment (UNDP, 2009). A lack of meteorology information has also been cited as an obstacle to adaptation. According to UNDP (2009), Guinea’s system of meteorological data collection and sharing



is currently not appropriate, resulting in incomplete data sets, weak analysis and no dissemination. The restoration of meteorological stations is also needed if communities are to plan adaptation measures based on the most up-to-date information.

Taking into account key vulnerabilities and capacity limitation, Guinea's NAPA draws up as many as 25 community-level projects related to these adaptation priorities and underlines the need to undertake measures at the community and village level. These projects are presented in Table 3.

B. National Level Policies and Strategic Documents

Guinea submitted first National Communication in 2002 and its NAPA in 2007. Within its NAPA, Guinea notes that a number of its planned adaptation actions could be achieved through implementation of five existing government policies: (1) the country's Strategy for Poverty Reduction; (2) Policy Letter for Agricultural Development; (3) Policy Letter for Livestock Development; (4) Forestry Policy and (5) the National Action Plan for the Environment. Most of these policies were adopted in the early 1990s and, although not specifically developed for this purpose, their implementation would contribute to reducing Guinea's vulnerability to the impacts of climate change.

- *The Forest Policy* (Politique Forestière) was adopted in 1990 by the Government of Guinea and has six major objectives: ensure the sustainability of the national heritage of renewable natural resources; ensure and develop the surfaces to be used permanently in the forest; apply the best methods to provide maximum benefits and property indefinitely; assist and monitor various aspects in their exploitation, processing and marketing of forest products; closely involve the whole of government, businesses, associations, communities and all citizens in forest policy; and operate effectively instruments of this policy.
- The *Policy Letter for Agricultural Development* (La Lettre de Politique de Développement Agricole) was launched in December 1991. It identifies as priority areas the promotion of food security, the revival of export crops and preservation of the productive base through better management of natural resources. Taking into account macroeconomic constraints and the experience gained in implementation of this policy, nine priority areas have been identified (e.g. the promotion of food security; sustainable management of natural resources, and the improvement of agricultural production). Four of these nine areas are perfectly integrated with Guinea's adaptation to climate change objectives (MAEEEF, 2007).
- The *Policy Letter for Livestock Development* (La Lettre de Politique de Développement de l'Élevage) was first adopted in 1991 and then again in 1997. The objective of this document related to achieving a better choice of pasture for livestock is noted in the NAPA as being supportive of adaptation action in Guinea.

- *The National Action Plan for the Environment* (Le Plan National d’Action pour l’Environnement), adopted in 1994, sets as priorities: improving the living environment; enhancing biodiversity and rare cultural resources and generally ensuring sound management of all natural resources, including marine; and preventing major risks, not only climate but also related to human activities in both urban and rural areas.

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

Name of Policy Action		Government Division Responsible	Status	Summary description
1.	National Communication on Climate Change	Ministry of Mining, Geology and Environment (MMGE) (Ministère des mines, de la géologie et de l’environnement)	Released in 2002	This document describes the steps Guinea is taking and envisages undertaking to implement the UNFCCC. It underlines key vulnerabilities (Water resources, coastal zone, agriculture, livestock and forestry) as well as potential adaptation measures.
2.	National Adaptation Program of Action on Climate Change	Ministry of Agriculture, Livestock, Environment, Water and Forestry (Ministère de l’agriculture, de l’élevage, de l’environnement, des eaux et forets - MAEEEF)	Released in 2007	The NAPA identifies national and regional climate change impacts and climate change adaptation measures to address those impacts. A total of 25 priority interventions have been identified.

C. Current Adaptation Action

A very low number of adaptation projects are currently underway in Guinea. This includes the “Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea’s Vulnerable Coastal Zones” project funded by the Least Developed Countries Fund (LDCF) that is addressing concerns related to the management of Guinea’s coastal areas in a changing climate. Guinea is also involved in a few regional adaptation programs.

Table 2: Current Adaptation Actions in Guinea

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
National Action							
1.	Adaptation to Climate Change and Strategies to Reduce the Risk of Water-borne Illnesses in Guinea's Forested Zones ¹⁶²	This project aims to develop and introduce important adaptation measures in Guinea's forested areas and to help reduce the risk of water-borne illnesses, schistosomiasis in particular. Expected results include the creation of tools for adapting to climate change which take into account sanitary conditions and the sustainable management of water resources.	DFID and IDRC through the CCAA program	Université de Conakry (Centre d'Études et de Recherche en Environnement)	Research	2008 – ?	Human health Forested zones
2.	Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea's Vulnerable Coastal Zones ¹⁶³	The objective is to strengthen the protection of vulnerable Guinean coastal communities and areas against the adverse impacts of climate change and climate variability and to reinforce their capacities to adapt to climate change.	LDCF	UNDP	Capacity building; Knowledge communication; Community-based adaptation	2009 – 2014	Coastal zone management Coastal areas
Participation in Regional and Global Projects							
3.	Interdisciplinary and Participative Research on Interactions between Ecosystems, Climate and Societies in West Africa ¹⁶⁴	The project will identify the relations between ecosystem vulnerabilities and human populations in order to scientifically support political responses to climate change.	France's Foreign Affairs Ministry	Agence inter établissements de la recherche pour le développement (Inter-institutional Research Agency for Development)	Research	2007 – 2011	Ecosystem conservation <i>Regional:</i> Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea,

¹⁶² IDRC, http://www.idrc.ca/cp/ev-120851-201-1-DO_TOPIC.html

¹⁶³ <http://gefonline.org/projectDetailsSQL.cfm?projID=3703>

¹⁶⁴ <http://www.aird.fr/ripecsa/index.htm>.

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
							Guinea-Bissau, Mali, Mauritania, Niger, Nigeria, Senegal, Togo
<i>In Guinea: Unknown</i>							
4.	Adapting Fishing Policy to Climate Change with the Aid of Scientific and Endogenous Knowledge ¹⁶⁵	Canada	IDRC; Environment and Development Action in the Third World	Capacity building; Policy formation and integration; Research	2008 – 2011	Fisheries	<i>Regional:</i> Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania and Senegal
<i>In Guinea: unknown</i>							

D. Proposed Adaptation Action

Through its NAPA, Guinea has identified 25 priority adaptation actions that touch upon needs in the sectors of agriculture, water, forests and coastal areas. Many of these recommended actions call for specific actions to be undertaken at the community level.

¹⁶⁵ http://www.idrc.ca/en/ev-139740-201_104682-1-IDRC_ADM_INFO.html

Table 3: Priority projects identified in Guinea's NAPA

Name		Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
1.	Support the development of community and private plantations of cashew	To contribute to environmental conservation and poverty reduction	Capacity building	Forestry	Mandiana, Kankan, Dinguiraye, Kouroussa, Dabola, Tougué, Mali, Koudara, Beyla, Boké, Sigui, Gaoual
2.	Support for the implementation of management plans for community forests	To contribute to the sustainable management of forest resources and fight against the adverse effects of climate change.	Capacity building	Forestry	Faranah, Kissidougou et Gueckédou
3.	Valorization of knowledge and positive endogenous practices	To promote ecosystem conservation and uses with high ecologic values.	Capacity building; Assessment	Ecosystem conservation	Kouroussa, Beyla, Koundara et Boké
4.	Initiation of coastal populations to the technique of mangrove oyster farming	To contribute to food self-sufficiency and to preserve the mangrove ecosystem	Capacity building	Coastal zone management; Fisheries	Boffa, Dubréka, Forécariah
5.	Soil anti-erosion and protection	To fight against land degradation to mitigate climate change impacts	Capacity building; Knowledge communication	Agriculture	Tougué, Mali, Lélouma, Dalaba, Mamou et Koubia
6.	Promoting the use of solar energy for drying fish to reduce the use of wood for smoking	To contribute to the preservation of the mangrove by the use of solar dryers	Knowledge communication; Field implementation	Energy	National
7.	Promotion of compressed earth brick to reduce the environmental impacts of bricks for cooking	To contribute to environmental preservation and improvement of living conditions of populations	Capacity building; Knowledge communication; Field implementation	Buildings	Kankan, Kouroussa, Sigui, Dabola, Faranah, Dinguiraye, Mamou Labé, Kindia Kissidougou, N'Zérékoré et Macenta
8.	Intensification of cultivation of pearl millet in the north of Guinea	Promote the cultivation of resistant varieties to drought in order to ensure food security.	Knowledge communication	Agriculture	Koundara, Gaoual, Mali, Sigui, Kankan, Mandiana, Dinguiraye
9.	Promoting the use of solar energy in the extraction of sea salt	To contribute to the preservation of mangrove ecosystems and increase salt production.	Capacity building; Knowledge sharing	Energy; Coastal zone management	Boffa, Dubréka, Forécariah, Coyah, Boké
10.	Promotion of wire fences and hedges in Middle Guinea	To limit the cuts in order to promote the regeneration of vegetation	Knowledge communication; Capacity building	Forestry	Dalaba, Labé, Koubia, Mali, Lélouma, Tougué

Name		Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
11.	Development of an early warning system to secure agricultural productivity	To reduce poverty and secure food production by means of an early warning system.	Capacity building; Field implementation	Disaster risk reduction; Agriculture	National
12.	Fire management and prevention	To contribute to the preservation of the savannah ecosystems for sustainable development.	Knowledge communication; Capacity building	Fire management	Faranah, Dabola, Kouroussa, Dinguiraye, Siguiri, Mandiana, Kankan, Kérouané, Beyla, Kissidoukou et Gueckédou
13.	Protection of the agricultural areas on the waterfront	To limit the effect of saltwater intrusion in the coastal plains of Kaback and Koba to improve their productivity	Capacity building; Field implementation	Coastal zone management	Forécariah, Boffa
14.	Dissemination of Multilateral Environmental Agreements and national legal texts relating to the protection and sustainable use of natural resources	To contribute to the environmental protection and the sustainable use of resources	Knowledge communication	Government	National
15.	Promotion of environmental education for coastal communities	To contribute to the preservation of coastal and marine environments	Knowledge communication	Coastal zone management; Marine management	Boké, Boffa, Dubréka, Coyah, Conakry, Forécariah
16.	Building of multipurpose micro-dams	To control water for different uses to adapt to the impacts of climate change	Capacity building; Field implementation	Freshwater supply	Siguiri, Gaoual, Lélouma et Dinguiraye
17.	Building of water retention systems on hills	To control water for different uses	Capacity building; Field implementation	Freshwater supply	Dinguiraye, Tougué, Gaoual
18.	Improved wells	To promote the use of groundwater to meet drinking water needs.	Capacity building; Field implementation	Freshwater supply	Mali, Koubia, Mandiana, Siguiri, Koundara
19.	Purification of surface waters by Hydropur	To improve access to drinking water	Capacity building; Field implementation	Freshwater supply	Mandiana, Tougué, Boké, Beyla
20.	Extension of impluviums	To meet drinking water needs of populations in isolated areas	Capacity building; Field implementation	Freshwater supply	Lélouma, Labé, Mali, Tougué, Dinguiraye, Koundara et Mandiana
21.	Protection of spawning grounds in the	To protect spawning areas and promote	Knowledge communication	Fisheries	Boffa, Dubréka et Forécariah

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
estuaries of the Fatala, Konkouré and Méllacoré	sustainable management of resources			
22. Irrigated rice development in Middle and Upper Guinea	To ensure food security and to mitigate the adverse effects of shifting cultivation.	Capacity building; Knowledge communication	Agriculture	Siguiiri, Koundara
23. Promotion of small ruminant livestock	To increase populations' incomes, to contribute to food security and to reduce pressure on natural resources	Knowledge communication	Agriculture	Siguiiri, Kouroussa, Mali, Koundara, Beyla
24. Promotion of horticultural crops	To improve the incomes of targeted groups and to contribute to food security	Knowledge communication	Agriculture	Kouroussa, Koundara, Lola, Mali
25. The creation of cane rat ranches to reduce bush fires and improve the living conditions of rural populations	To improve the living conditions of populations and the preservation of the environment. The cane rats are the main resource for food and hunting them often causes bushfires.	Knowledge communication; Field implementation	Agriculture	Kérouané, Kankan, Beyla, Lola et Guéckédou

E. Assessment

Guinea's NAPA is very ambitious, listing 25 projects to be undertaken throughout the country. To date, however, few adaptation projects are being undertaken in the country. The current projects focus in the coastal, agriculture and fisheries sectors, leaving needs with respect to the priority sectors of water resources and forestry still to be met. Gender is also not a focal area of any current adaptation projects. As well, although cited as barrier to taking effective adaptation action by UNDP (2009), none of the NAPA projects proposed by Guinea address the need for improved climate information services. The absence of an effective climate monitoring and forecasting system in the country could undermine other adaptation efforts taken by the country.

The limited amount of adaptation action in Guinea may be due to the decision by international donors to significantly reduce their development programming in the country until it completes a successful democratic transition (CIA, 2010). As well, it has been observed that the current government has concentrated its energy on establishing international donor relationships in the context of emergency assistance rather than support for climate change adaptation (OneWorld, 2010). As noted previously, another obstacle to the implementation of adaptation measures in Guinea is the lack of sufficient local capacity to implement identified measures. As a consequence, almost all the country's NAPA projects involve capacity building and training, even when the project aims to build new infrastructure.



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