

6.0 Democratic Republic of the Congo

ARD	Agriculture and Rural Development
BMU	Bundesministeriums für Umwelt, Naturschutz und Reaktorischerheit (Germany)
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Germany)
CAR	Central African Republic
CGIAR	Consultative Group on International Agricultural Research
CIFOR	Center for International Forestry Research
COMIFAC	Central African Forests Commission
DFID	Department for International Development (UK)
DRC	Democratic Republic of the Congo
DRM	disaster risk management
DRR	disaster risk reduction
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
IDRC	International Development Research Centre
IUCN	International Union for the Conservation of Nature
LDCF	Least Developed Countries Fund
NAPA	National Adaptation Programme of Action
NGO	non-governmental organization
PRSP	Poverty Reduction Strategy Paper
REDD	Reduced Emissions from Deforestation and Forest Degradation
SASKI	Sustainable Agriculture Systems, Knowledge and Information
SIDA	Swedish International Development Agency
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development

The Democratic Republic of the Congo (DRC) is the largest country in Middle Africa by population and land mass—with an estimated population of 67.8 million (in 2010)⁹⁸ and an area of 2,345,409 km² (making it the third largest country in Africa and the 12th largest in the world) (UNFPA, 2010; USDS, 2010). The country's landscape is dominated by the world's second largest area of tropical rainforest—which stores 8 per cent of global forest carbon—as well as mountainous terraces, plateaus, savannahs, grasslands and mountains. Although incredibly rich in natural resources such as timber, energy, minerals and gemstones, the DRC is presently ranked 168 out of 169 on the UNDP's Human Development Index (UNDP, 2010). About 70 per cent of the economy is informal, and dominated by rural sectors; industrial development remains embryonic (MENCT, 2009). Per capita GDP in 2008 was US\$182 (UNDP, 2010).

There is an enormous legacy of conflict in the country due to the Second Congo War (1998 to 2003). Insecurity persists in the east of the country and continues to cause the loss of human life and limit development efforts. Substantial environmental damage and degradation has been one of many results of the country's past and present conflicts.

A. Adaptation Needs and Priorities

The climate of the DRC is largely equatorial, but varies due to the country's immense size. It is hot and humid in much of the north and west (in the tropical rainforest in the Congo River basin) and cooler and drier in the southern, central and eastern parts of the country (USDS, 2010). In recent years there has been an observed persistence of excessive heat waves, violent rains, soil degradation, prolongation of the dry season, and an increase in drought and floods (MENCT, 2009). Climate change is projected to result in a moderate increase in mean annual temperatures, with estimates suggesting a rise by 2050 of 1 to 2.5°C (World Bank, n.d.) and 1.72 to 2.08°C (MENCT, 2009). The impact of this process on precipitation is less certain, with estimates suggesting that mean annual rainfall could remain static (World Bank, n.d.) or increase by between 0.3 and 7.5 per cent by 2050 (MENCT, 2009). No significant changes in consecutive dry days or in extreme rainfall events (the maximum 5-day precipitation) are projected (World Bank, n.d.), although it has been suggested that the south of the country will likely experience a shorter rainy season; the season could decrease from 7 to 5 months in the south-eastern province of Katanga (MENCT, 2009).

These changes in climate are expected to augment existing vulnerabilities of the DRC—along with the potential for significant population growth putting greater demand for water and other resources. The DRC has identified several areas of particular concern and strategies by which these vulnerabilities might be addressed. These actions are summaries in Table 1 below.

⁹⁸ Estimates suggest that the population of the DRC will grow to 147.5 million in 2050 (UNFPA, 2010).

Table 1: Vulnerabilities and proposed adaptation strategies for the DRC (MENCT, 2009)

Sector	Vulnerability	Proposed Adaptation Strategies
Freshwater Resources	• Due to the country's substantial existing water resources, water scarcity at a national level is not a concern for the DRC at the moment. • However, water accessibility remains a problem as most of the population continues to access water from rivers, wells, rain and troughs. Rarely is this water of good quality and it is usually of insufficient quantity. • More intense rainfall events are threatening human life, causing erosion, destroying basic infrastructure and destroying settlements.	• Evaluation and monitoring of water resources, particularly those of the Congo River system and its Kinshasa-area tributaries, and the quality and quantity of both surface and groundwater • Impact of the system on the quantity and quality of groundwater for enhanced resource allocation planning • Characterization and development of the watersheds identified in Kinshasa for control of the surface run-off • Protection of water resources against pollution • Support of adaptation infrastructure capable of handling the projected hydrological variations, and improved understanding of the economic, social, and ecological costs of the adopted measures • Establishment of communities on the Kinshasa hill areas and on the Batéké Plateau in order to protect them from the negative effects of increased flooding
Agriculture	• Increased temperatures could reduce crop yields, as many crops are already close to the thermal tolerance level.	• Improved zoning for land use • Reforestation programs in deforested areas • Soil improvement programs • Strengthened pricing systems and distribution chains for agricultural producers • Orientation towards economic activities with reduced impacts on the forests • Community-based management of forest ecosystems • Agricultural extension services • Yield-improvement research • Improving local knowledge for stronger ecosystem conservation • Infrastructure rehabilitation
Human health	• Likely to be a change in the distribution of human disease with higher temperatures and higher rainfall. • The incidence of malaria is expected to increase.	• Health risk management, such as through epidemiological monitoring for early detection and early response and improved capacity to respond among clinicians, researchers and the pharmaceutical industry. • Formulation of a Priority Action Programme • Various possible adaptation measures: - Strengthening of medical personnel's professional capacities - Identification and destruction of pathogens - Organization of preventive action against vector-borne diseases - Strengthening of decontamination systems - Organization of the education and training systems, and awareness-raising

		programs for the population - Improvement of the food supply system - increased use of anti-mosquito grids - Better use of treated mosquito nets - Eradication of mosquito breeding grounds - Mosquito eradication on a national scale - Strengthening the population's nutritional capacities - Work to reduce social exclusion and increase community-based programs - Mapping climate risk
Coastal zone management	• Erosion has increased along the DRC's short Atlantic coastline since 1980. • Saltwater intrusion is affecting water tables. • The region has also experienced a loss of biodiversity in the mangrove marine park, material and agricultural production losses, greater sedimentation and sand deposits, and unwanted expansion of mangrove forests into inhabited areas.	• Regulation of mangrove development • Coastal area development policy • Delineation of building and residential areas • Diversification of activities for farmers and fishers
Land and ecosystem degradation	• Changes in the region's floral composition and shifts in biodiversity. • Desertification in parts of the country could become a greater concern should deforestation continue to create new microclimates while temperatures rise. • Threats to soil conservation. • Potential increase in forest and brush fires.	

B. National Level Policies and Strategic Documents

Under the United Nations Framework Convention on Climate Change (UNFCCC), DRC submitted its First National Communication in 2000 and its Second National Communication in 2009. In between, the country prepared its National Adaptation Programme of Action (NAPA), which was released in 2006. Summaries of all three documents are provided in Table 1 below.

These documents remain the main government policy initiatives on climate change adaptation; consideration of the impacts of climate change has not yet been integrated into other policy initiatives. For example, no explicit mention of climate change adaptation is made in the country's most recent Poverty Reduction Strategy Paper (completed in 2007), although implementation of the UNFCCC is mentioned under the "Environment" pillar. However, the DRC is in the process of formulating—in conjunction with the Food and

Agriculture Organization (FAO)—a National Programme for Food Security (Programme National pour la Sécurité Alimentaire). The goal of this program is to increase production and productivity of the agricultural sector to ensure national food security, thereby at least partially addressing one key areas of vulnerability, as identified by the country's Second National Communication.

Table 2: 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 ⁹⁹	Ministry of Business, Land, Environment and Tourism	Submitted November 2000	Water, agriculture, coastal zones	The document describes the action taken by the DRC on climate change mitigation and adaptation. It provides an overview of the country's context, followed by an inventory of domestic greenhouse gas emissions. The report describes various climate change scenarios expected for the country, along with vulnerabilities in three priority areas: water resources, agriculture and coastal zones. Strategies are then presented that can help to strengthen adaptive capacity and reduce vulnerability.
2.	National Adaptation Programme of Action ¹⁰⁰	Ministry of the Environment	Submitted September 2006	Multiple	The NAPA identifies national climate change impacts and describes corresponding vulnerabilities, most of which are aligned to poverty. It then lists the adaptation measures required to address these impacts and vulnerabilities.
3.	Second National Communication to the UNFCCC ¹⁰¹	Ministry of Environment, Nature Conservation and Tourism	Submitted November 2009	Water, coasts, health, forests, agriculture	The DRC's Second National Communication updates the information and strategies contained in its First National Communication. In the interim period, the context changed considerably to due violent conflict, which has increased poverty and compromised health systems, among other impacts. The Second National Communication provides updated figures on national greenhouse gas emissions, climate change vulnerability and adaptation requirements, with a sectoral focus on water, coasts, health, forests and agriculture. It concludes by providing technological requirements, climate observation capacities, environmental management capacities and public awareness on climate change.

⁹⁹ UNFCCC, http://unfccc.int/essential_background/library/items/3599.php?rec=j&preref=3428#beg

¹⁰⁰ UNFCCC, <http://unfccc.int/resource/docs/napa/cod01.pdf>

¹⁰¹ UNFCCC, http://unfccc.int/essential_background/library/items/3599.php?such=j&symbol=%20COD/COM/2%20E#beg

C. Current Adaptation Action

As the largest and most populous country in Middle Africa, it is perhaps not surprising that the DRC has a high number of adaptation projects relative to its regional neighbors. It is currently benefitting from a limited number of national projects and participation in a few regional and global projects and programs. The projects focus primarily (though not exclusively) on agriculture, forestry and energy, and tend towards research and capacity building.

The largest national project is a US\$6.05 million, project funded in part by the Least Developed Countries Fund (LDCF) and implemented in a partnership between the United Nations Development Programme (UNDP) and the national government.¹⁰² The project, “Building the Capacity of the Agriculture Sector in DR Congo to Plan for and Respond to the Additional Threats Posed by Climate Change on Food Production and Security,” aims to build the capacity of the agricultural sector, so that those in the sector can better plan and respond to the emerging threats posed by climate change on food production and security. It is one of three LDCF-funded projects currently being implemented in the region. On a national level, DRC has also received US\$250,000 in Fast Start Financing through the United States Agency for International Development (USAID) to increase water storage capacity and thereby help build the resilience of water systems to climate stress.¹⁰³

On a regional level, DRC is participating in the Climate Change Adaptation in Africa program, co-financed by the International Development Research Centre (IDRC) and the UK Department for International Development (DFID). Their project, “Altering the Climate of Poverty under Climate Change: The Forests of the Congo Basin,” aims to underscore the importance of the Congo Basin forests in climate change adaptation efforts. This research and policy-formation project is also being implemented in neighboring Cameroon and Central African Republic, and will rely on community participation and perspectives in all three countries to develop appropriate forest management strategies. The project is being implemented by the Center for International Forestry Research (CIFOR), and is part of their larger global program on enhancing the role of forests in climate change adaptation (IDRC, 2008).

Between 2007 and 2009, Helio International implemented a research project on climate-proofing energy systems in a number of African countries, including Cameroon and the DRC. The objective of the project was to develop a methodology and indicators for assessing the vulnerability of energy systems to climate change, and to adapt these systems to climate change (Helio International, 2009).

¹⁰² UNDP, <http://www.undp-adaptation.org/portfolio/projectR.php?id=114>

¹⁰³ USDS, <http://www.state.gov/g/oes/rls/rpts/faststart/merge/151251.htm>

As a member of the Central African Forests Commission (COMIFAC), DRC will also benefit from its current project on climate change scenarios for the Congo Basin. The extent of activities being carried out in DRC 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).

Finally, two projects were undertaken in a number of African countries, including the DRC, with funding from the Global Facility for Disaster Reduction and Recovery (GFDRR). The projects aimed to build capacity and share knowledge on disaster risk reduction and risk management, with a partial focus on climate change adaptation. More information is required on the specific activities carried out under each grant in the DRC (GFDRR, 2008a; GFDRR, 2008b).

Table 3: Current Adaptation Projects and Programs active in the Democratic Republic of the Congo

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
National Action							
1. Building the Capacity of the Agriculture Sector in the Democratic Republic of the Congo to Plan for and Respond to the Additional Threats Posed by Climate Change on Food Production and Security ¹⁰⁴	The project seeks to reduce vulnerability among rural populations in four selected sites by promoting: the renewal of agro-genetic material through provision of germplasm more suited for expected climate conditions, as well as the creation or strengthening of the agricultural chain of support (extension services, technological tools, agro-meteorological information and planning) from local to provincial and national levels. Building on current rehabilitation and reconstruction efforts, including efforts to promote decentralization and to reform the public sector, the project will facilitate the demonstration of adaptation measures relevant to planning at all levels, taking into account regional specificities.	LDCF, co-financing Budget: US\$7.51 million	UNDP; Ministry of Environment, Conservation of Nature, Water and Forests	Capacity building; Field implementation	2009 – 2015	Agriculture	National

¹⁰⁴ UNDP, <http://www.undp-adaptation.org/portfolio/projectR.php?id=114> and http://www.unclearn.org/sites/www.unclearn.org/files/inventory/GEF61_0.pdf

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
2.	<i>To be determined</i>	To increase water storage to reduce variability in the water supply in the DRC, helping to increase resilience to climate stresses on water systems. ¹⁰⁵	USAID Budget: \$250,000		Field implementation	2010 – ?	Freshwater supply	
Participation in Regional and Global Actions								
3.	Climate Proofing Energy Systems: Vulnerability-Adaptation-Resilience ¹⁰⁶	The objective is to develop a methodology and indicators in order to evaluate the vulnerability of energy systems to climate change and to adapt to climate change.	France; GIZ; BMZ; IUCN; and La Francophonie	HELIO International	Research; Assessment	2007 – 2009	Energy	African: Benin, Burkina Faso, Cameroon, DRC, Kenya, Nigeria, Senegal, Tanzania and Uganda
			<i>In DRC: Conducted an assessment of the vulnerability and resilience of energy systems to climate change in the DRC</i>					
4.	Enhancing the Disaster Risk Reduction Capacity in Agriculture and Rural Development ¹⁰⁷	Preparation of 10 capacity building modules on pre- and post-disaster risk management and mainstreaming of disaster risk reduction in agriculture and rural development, with a focus on climate change adaptation.	Global Facility for Disaster Reduction and Recovery Budget: US\$50,000	Agriculture and Rural Development (ARD) and Sustainable Agriculture Systems, Knowledge and Information (SASKI)	Capacity building	2008 – 2010 (closed)	Agriculture; Disaster risk management	African: Burkina Faso, Comoros, DRC, Eritrea, Ethiopia, Kenya, Madagascar, Niger, Rwanda, Senegal, Seychelles
			<i>In DRC: More information required</i>					
5.	Altering the Climate	This project aims to underscore the	DFID and	CIFOR	Research;	2008 – 2011	Forestry	<i>Regional:</i>

¹⁰⁵ USDS, <http://www.state.gov/g/oes/rls/rpts/faststart/merge/151251.htm>

¹⁰⁶ Helio, <http://www.helio-international.org/projects/VAR09.cfm#reports>

¹⁰⁷ GFDRR, http://gfdr.org/gfdr/ca_projects/detail/1228

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	of Poverty under Climate Change: The forests of Congo Basin ¹⁰⁸	importance of the Congo basin forests in climate change adaptation efforts in Cameroon, Central African Republic and the Democratic Republic of Congo. Researchers will map adaptation priorities and policies in the countries under study. They will engage with stakeholders to ensure that local perspectives are brought to bear on forest management strategies.	IDRC through the CCAA program		Community-based adaptation; Policy formation and integration			Cameroon, CAR, DRC
			In DRC: More information required					
6.	Climate Change Scenarios for the Congo Basin ¹⁰⁹	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	2009 – 2011	Climate information services	African: COMIFAC (Burundi, Cameroon, CAR, Chad, Congo, DRC, Equatorial Guinea, Gabon, Rwanda, Sao Tome and Principe)
			In DRC: More information required					
7.	Adapting to Climate Change Induced Water Stress in the Nile River Basin ¹¹⁰	To build the resilience of ecosystems and economies that are most vulnerable to climate change induced water stress in the Nile Basin countries through building key adaptive capacity and piloting adaptation in "hotspots" with technical, policy and financial interventions.	SIDA	UNEP, Nile Basin Initiative	Vulnerability assessment; Capacity building; Policy formation and integration	2009 – 2012	Water; Disaster risk reduction; Security	African: Burundi, DRC, Egypt, Eritrea, Ethiopia, Kenya, Rwanda,

¹⁰⁸ IDRC, http://www.idrc.ca/ccaa/ev-127592-201_104835-1-IDRC_ADM_INFO.html. This project is part of the larger CGIAR/CIFOR initiative “Enhancing the Role of Forests in Adaptation to Climate Change”: <http://www.cifor.org/forest-research/research-themes/adapting-to-climate-change.html>

¹⁰⁹ BMU, <http://www.bmu-klimaschutzinitiative.de/en/projects?p=1&d=550>

¹¹⁰ UNEP, <http://www.unep.org/climatechange/adaptation/EcosystemBasedAdaptation/NileRiverBasin/tabid/29584/Default.aspx>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
							Sudan, Tanzania, Uganda
		In DRC: More information required					
8.	Southern Africa Regional Climate Change Program ¹¹¹	DFID, SIDA	OneWorld Sustainable Investments	Policy formation and integration; Research	2009 – 2014	Government; Climate information services	African: 15 countries, ¹¹² including Angola and the DRC
		In DRC: More information required					

D. Proposed Adaptation Action

In its 2006 NAPA, the DRC listed only one potential adaptation project aimed at addressing the identified national climate vulnerabilities—a project aimed at strengthening the productive capacity of the agricultural sector for three crops (manioc, rice and corn) in the face of climate change (see Table 4). This research project was proposed to be national in scope, but focused exclusively on agriculture and food security. No projects were proposed for other vulnerable sectors in the country.

Table 4: Proposed Adaptation Projects and Programs in the Democratic Republic of the Congo

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
1. Strengthening the productive capacity of the agricultural sector: Focus on manioc, rice and corn	To promote, among targeted communities, the growth and use of seeds more resistant to climate change and plight, and which generate larger yields given local conditions. This will include the identification of sites for cultivation, cultivation itself,	Research; Field implementation	Agriculture	National
		Notes: The project will focus be implemented in districts		

¹¹¹ Southern Africa Regional Climate Change Program, http://www.rccp.org.za/index.php?option=com_content&view=article&id=68&Itemid=61&lang=en

¹¹² These countries are: Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
	harvesting, transport and distribution.	around the country.		

E. Assessment

Through the submission of its first and second National Communications and NAPA, the government of DRC has shown continual engagement with the UNFCCC process. However, the country has not progressed with the establishment of dedicated climate change (adaptation) plan, or with the integration of adaptation into various sectoral and national plans. As well, much of the focus for national climate change policies in the DRC is on the domestic potential for Reduced Emissions from Deforestation and Forest Degradation (REDD) projects, and the country's enormous mitigation role as a global carbon sink.

Still, the DRC is also highly vulnerable to the impacts of climate change, primarily because of the country's pervasive and chronic poverty, and the reliance of the population on climate-dependent sectors. The legacy of conflict, particularly in the east of the country, continues to influence national climate vulnerability. In response, the government is involved in a limited number of adaptation (national and multi-country) projects. These projects are focused on a number of vulnerable sectors, including forests, agriculture, energy, water and disaster risk management. The health sector, despite being identified as an area vulnerable to climate change, has yet to receive any project funding. Nor is gender a prominent component of any current adaptation project or proposed strategy. These are areas for potential adaptation investment. A variety of types of current projects are also underway: research, policy formation, capacity building, knowledge sharing, and vulnerability assessment. A limited amount of concrete adaptation action, including community-based adaptation, has been undertaken to date. Stakeholder engagement, including the private sector and civil society, could be increased and domestic capacities for implementing adaptation programs must be improved. At present, all projects are being implemented by government ministries, external partners and UN agencies.

Adaptation projects currently underway display a good diversity of funding sources; the country has not relied on one particular donor, but rather receives adaptation funding from a variety of bilateral, multilateral and NGO partners. Although the number of adaptation projects in the DRC is high relative to its neighbors, there are vast differences between their size, population and levels of development. As such, per capita spending on adaptation to climate change is much lower in DRC than in the rest of the region.

References:

Bundesministeriums für Umwelt, Naturschutz und Reaktorischerheit [BMU] (2010). Climate Change Scenarios for the Congo Basin. Retrieved from <http://www.bmu-klimaschutzinitiative.de/en/projects?p=1&d=550>

Global Facility for Disaster Reduction and Recovery [GFDRR] (2008b). Enhancing the Disaster Risk Reduction Capacity in Agriculture and Rural Development. Retrieved from http://gfdrr.org/gfdrr/ca_projects/detail/1228

Helio International (2009). Energy Systems: Vulnerability-Adaptation-Resilience: Democratic Republic of Congo. Paris. Retrieved from <http://www.helio-international.org/VARRDC.En.pdf>

International Development Research Centre [IDRC] (2008). Altering the Climate of Poverty under Climate Change: the Forests of Congo Basin. IDRC: Ottawa. Retrieved from http://www.idrc.ca/ccaa/ev-127592-201_104835-1-IDRC_ADM_INFO.html

Ministry of Business, Land, Environment and Tourism (2000). *First National Communication for the UNFCCC*. Kinshasa: Ministry of Business, Land, Environment and Tourism of the Democratic Republic of Congo.

Ministry of the Environment (2006). *National Adaptation Programme of Action*. Kinshasa: Ministry of the Environment of the Democratic Republic of Congo and the United Nations Development Programme.

Ministry of the Environment, Nature Conservation and Tourism [MENCT] (2009). *Second National Communication for the UNFCCC*. Ministry of the Environment, Nature Conservation and Tourism of the Democratic Republic of Congo: Kinshasa.

United Nations Development Programme [UNDP] (2010). *Human Development Report 2010: The Real Wealth of Nations: Pathways to Human Development*. UNDP: New York.

United Nations Population Fund [UNFPA] (2010). *The State of World Population 2010: From conflict and crisis to renewal: generations of change*. New York: United Nations Population Fund.



United States Department of State [USDS] (2010). Background Note: Democratic Republic of the Congo. Retrieved from <http://www.state.gov/r/pa/ei/bgn/2825.htm>

World Bank (undated). Climate Change Knowledge Portal. Retrieved from <http://sdwebx.worldbank.org/climateportal/>