

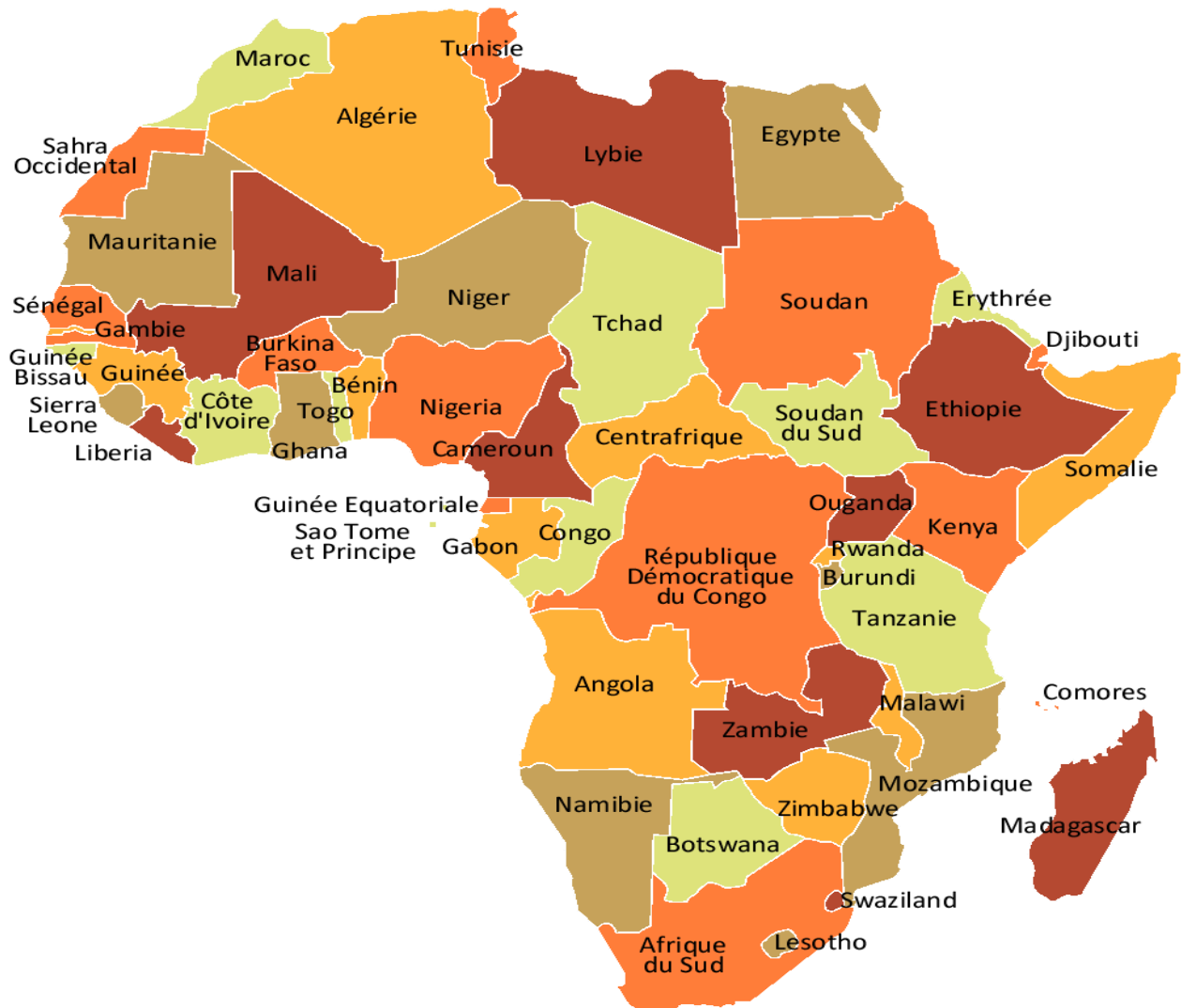


HUMAN DEVELOPMENT IN POOR
COUNTRIES: THE FIGHT AGAINST
CLIMATE CHANGE IN THE CONGO

REPUBLIC OF CONGO



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ATHENS 2018





ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS
MSc IN INTERNATIONAL & EUROPEAN ECONOMIC STUDIES

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THESIS ON HUMAN DEVELOPMENT IN POOR COUNTRIES: THE FIGHT AGAINST
CLIMATE CHANGE IN CONGO

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ATHENS 2018



Table of Contents

Acknowledge:.....	6
PREFACE:	7
INTRODUCTION:.....	7
CHAPTER 1: HUMAN DEVELOPMENT IN POOR COUNTRIES AND CLIMATE CHANGE.....	8
Section 1: CONCEPT ON HUMAN DEVELOPMENT	8
HUMAN DEVELOPMENT	8
Climate change.....	10
Section 2: Human Development, Poverty and Climate Change.....	10
Section 3: Impact of climate change on human development.....	11
Table 3.2- ENVIRONMENTAL CONTRIBUTIONS TO THE MDGs.....	11
CHAPTER 2: GOVERNANCE IN THE REPUBLIC OF CONGO	12
STATUS OF POVERTY STRATEGIC REDUCTION IMPLEMENTATION.....	12
Political governance.....	13
Peace and security	13
Administrative and judicial governance.....	13
Decentralization	14
State Reform	14
Civil Society Organizations and Citizen Participation.....	15
Management of the macroeconomic framework and development orientation	15
Overall and sectorial growth.....	15
Political budget:	16
Tax Policy.....	16
Section 4: Monetary and human poverty	16
Human Poverty	16
Education and Literacy.....	16
Health.....	17
Unemployment and Employment.....	18
Chapter 3: Climate Change On Human Development in Congo.....	18
Geographic and Climate Plan of Climate Change	18
Comparative evolution of rainfall.....	20
Impact on the Biophysical Environment.....	20
Impacts of climate change in the Republic of Congo	21



Long-Term Impact on Human Poverty and Social Inequalities.....	22
Global and National Response to Climate Change	22
World Strategy	22
Mitigation and adaptation: response to climate change.....	23
Mitigation actions of developing countries:	24
Adaptation seen as reducing vulnerability to current climate change and future	24
Policies undertaken by the Government	25
The Republic of Congo has been working for several years to make every effort in reforestation, conservation and forest management	25
Mitigation measures and short- and long-term adaptation to human poverty	26
Medium term mitigation and adaptation: response to urgent needs.....	27
CONCLUSION.....	27
BIBLIOGRAPHY:.....	31



Acknowledge

I would first like to thank God Almighty and Merciful, who has given me the strength and patience to accomplish this Modest Work during these years of study, I wish to express my sincere thanks to those who have helped and contributed to the development of this dissertation and the success of this wonderful academic year.

These thanks go first to the Faculty of Economics, ASOE, for the richness and the quality of their teaching, and, which make great efforts to ensure their students an updated training.

I would like to sincerely thank you, Sir PANOS TSAKLOGLOU, as Director of Memory. I will also remember my son to whom I owe even more his efforts, parents for their contribution, their support and their patience.

Finally, I send my sincerest thanks to all our friends and family, who have always encouraged me in this period of my life that is not easy.

Thanks' everyone.



PREFACE:

The subject of my thesis focuses on current concerns about the promotion of sustainable human development and is titled **"HUMAN DEVELOPMENT IN POOR COUNTRIES: THE FIGHT AGAINST CLIMATE CHANGE IN CONGO"**. The context of its development is characterized by the need to accelerate progress towards sustainable human development more in line with the country's potential.

The purpose of my work is to present an analysis of the effects of climate change on the environment and development, the chosen gateway being the MDGs. It has been established that climate change is responsible for stress / excess water and food insecurity in areas of high ecological risk, the threat and extinction of animal and plant species, soil degradation and environmental degradation and the accentuation of certain pathologies. The detrimental effects of climate change are already evident. Natural disasters are becoming more frequent and devastating. Developing countries increasingly vulnerable. In a nutshell, climate change is able to reverse efforts to achieve human development and eradicate poverty.

Human development, a concept promoted by the United Nations Development Program since 1990, is defined as the process of expanding the opportunities for individuals to lead long and healthy lives, to acquire knowledge and to gain access to the resources necessary to have a decent standard of living. In the absence of these fundamental opportunities, many other opportunities remain unattainable. However, human development does not stop there. Other potentialities to which individuals attach great value range from political, economic and social freedoms to the possibility of expressing creativity or productivity, personal dignity and respect for human rights. (UNDP, 1990 and 1995).

To parameterize the assessment of human development, the Human Development Index (HDI) was developed, as well as a range of other indicators that can measure specific dimensions of human development and later, to reflect the issues of human development and inequality. However, none of these indices include environmental indicators. Subsequently came the concept of sustainable human development, which in addition to the dimensions already mentioned, considers the need to take into account intergenerational interests. It is a question of considering the process of widening the possibilities offered to the present generations, without concealing or hindering those of future generations. From this perspective, environmental and equity issues are at the heart of the concept of sustainable human development. It is in this logic that the Millennium Development Goals of the Millennium Declaration adopted by the Heads of State and Government of the world should be placed at the Millennium Summit under the auspices of the United Nations. United Nations in New York in September 2000. The MDGs are a set of indicators with measurable targets for monitoring progress made by humankind in the implementation of the Millennium Declaration. They include an environmental target that links indicators of human and monetary poverty to indicators of environmental protection and management.

My research continues on the analysis of the various human development indicators, including the MDGs, in relation to the impact of climate change on them. The macroeconomic indicators of the Republic of Congo show an annual rate of high economic growth since the end of the wars (1999) and significant budgetary resources due to the high oil prices over a long period. Paradoxically, this favorable performance of the economy did not result in a clear improvement in human development indicators. Thus, the incidence of income poverty remains high (50.7% in 2005), even though this level is lower than that recorded in 1990 (70%). Nevertheless, more than one in two Congolese lives below the poverty line of 544.4 FCFA per adult and per day.

The general observation is that progress in achieving the MDGs is mixed. The consequences of climate change on the various MDG indicators are then established.

INTRODUCTION:

The Republic of Congo embarked on the momentum initiated since 1990 by UNDP to promote a comprehensive concept of development that takes into account, in a spirit of equity, the priority needs of current generations while preserving those of future generations. This concept is that of Sustainable Human Development (SHD).

The development context of this theme is characterized by the need to accelerate progress towards sustainable human development respectful of environmental constraints in a country where resources in this area are abundant, which could lead to waste. In the Republic of Congo, the issue of climate change is a major interest in terms of the country's place in the global environment, as well as its dependence on environmental resources. The second national communication (SNC) reports that climate change has severely disrupted the seasonal cycle, with the consequent change in the agricultural calendar. They also favored the emergence of new pathologies that are at the origin of the decline in agro pastoral production. In this respect, recent research in the field of health highlights a strong correlation between climate change and the high prevalence of respiratory and cardiovascular diseases. The 5th Global Forum on Sustainable Development, held in Brazzaville in October 2008, echoed the magnitude of the seriousness of climate change impacts, especially, the Congolese economy.



Moreover, the need to accelerate progress towards sustainable human development more in line with the potentialities of the Congo Republic has justified the inclusion of sustainable environmental management among the priorities of the Poverty Reduction Strategy Paper 2008- 2010 (PRSP). For its implementation, the country has just acceded to the completion point of the HIPC initiative in January 2010 after structural and institutional reforms and enjoys an economic context conducive to the growth of the domestic product growth rate, Gross (GDP) very high.

The preparation of this thesis on human development responds to the need to define human-centered development priorities and strategies, taking into account the specific context of each country. This is how the previous work entitled **Wars, and after**. Human Development in Post-Conflict Situations at the center of its concerns the post-conflict situation that prevailed at the time of its elaboration. Despite its immense natural wealth (oil, timber, various minerals) and the progress made in the field of peace, the Republic of Congo is still in a state of underdevelopment characterized by the accentuation of poverty which affects more than half of the population. The population, the decline in primary school enrollment, the burden of external indebtedness, the considerable deterioration of health systems and the development of HIV / AIDS, an HDI weak, placing the country 142nd out of 177 countries in 2003, the isolation of the interior of the country due to the insufficiency and the advanced degradation of transport infrastructure and communication.

The thesis process promote fruitful discussions and exchanges with key stakeholders on the effects of climate change, in order to make recommendations for action to implement adaptation measures to change. These take into account the imperative of promoting sustainable human development (SHD) in the Republic of Congo.

The Republic of Congo has just celebrated the fifty-nine years of its independence. It is legitimate that at this stage, Congolese wonder about their living conditions and scrutinize the future taking into account their environment. Scientists are unanimous in arguing that there is now a positive correlation between increasing temperatures and increasing concentrations of greenhouse gases in the atmosphere. The consequences for development indicators are felt in the country with the risk of receding and weakening ecological systems. It is to be feared that climate change will weaken human development indicators and limit people's opportunities. In the context of the developing country Republic of Congo, to what extent will foreseeable climate disasters further expose vulnerable populations.

However, given the magnitude of the challenges, the will alone is not enough to achieve the desired goals. It must be supported by economic, social and political analyzes that can help social actors make the best policy choices to promote DHD in the country. Among the factors that are at the root of the Congo's problems, the inadequacy of appropriate governance has often been cited as one of the major causes of the social divide and the political, economic and financial difficulties experienced by the country.

CHAPTER 1: HUMAN DEVELOPMENT IN POOR COUNTRIES AND CLIMATE CHANGE

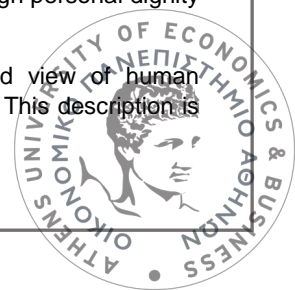
Section 1: CONCEPT ON HUMAN DEVELOPMENT

HUMAN DEVELOPMENT

The first World Report of the United Nations Development Program (UNDP) helped bring the human dimension back to the center of development issues. The economic growth that has long dominated the economic thinking and development policies of developing countries, especially Africa as a model of development, has been put back in its place as a necessary but not sufficient condition for development.

It is that human development is described as "a process of expanding opportunities for individuals. In principle, these possibilities can be infinite and evolve over time. However, regardless of the level of development, the three main possibilities, from the point of view of individuals, are to lead a long and healthy life, to acquire knowledge and to have access to the resources necessary to obtain a level of decent life. In the absence of these fundamental possibilities, a large number other opportunities remain inaccessible. However, human development does not stop there. Other potentialities to which individuals attach great value range from political, economic and social freedoms to the possibility of expressing one's creativity or productivity, through personal dignity and respect for human rights " (UNDP, 1990 and 1995).

Although the first human development report (HDR 1990) would have taken care to present a nuanced view of human development, over time, the sacred expression of "broadening the choice of people" has been widely adopted. This description is



fundamental, but insufficient. Human development involves sustaining positive results over time and combating processes that impoverish people or create oppression and injustice. Principles, such as equity, sustainability and respect for human rights, are therefore essential for human development broadened to the freedoms of individuals in order to:

- (i) Enable them to live long, healthy and creative lives
- (ii) To advance other objectives to which they have reason to value
- (iii) Play an active role in shaping the equity and sustainability of development on a shared planet.

People are both beneficiaries and driving force of human development as individuals and as groups.

This perspective puts the themes of sustainability, equity and empowerment at the heart of human development and its inherent flexibility in that gains can be fragile and vulnerable, and future generations need to be treated fairly. Special efforts are needed to ensure that human development is sustainable over time. Human development also involves fighting structural disparities. And it is about enabling people to exercise their individual choices and participate in processes, shape them and benefit from them at the household, community and national levels.

In the end, the conditions faced by people determine their chances of living satisfactorily. These include the distribution of benefits within their society, opportunities to participate in decision-making and how choices affect the well-being of future generations.

There are three (3) components:

- Welfare: Expanding the true freedom of people so that each individual has the opportunity to flourish;
- Empowerment and agility: empower people and groups to act for meaningful results;
- Justice: Expanding equity, preserving results over time and respecting human rights and other goals of society.¹

HUMAN POVERTY, MONETARY POVERTY AND MILLENNIUM DEVELOPMENT GOALS

According to the United Nations Development Program (UNDP), Poverty is a situation of disability (lack of competence) to enjoy the various aspects of life, how to live a healthy life and long, to have access to the education of one's choice, have sufficient economic resources and participate fully in the life of society (UNDP in Seeda, 2005).

In a perspective of enriching the concept, the World Bank has extended the concept of poverty to encompass everything related to a situation of risk and vulnerability and all lack of expression and power.

From these contents, it is clear that poverty is not, or rather is no longer just a state of material degrade, but is in addition to:

- A physically, healthily and intellectually incapacitating state that does not allow the individual to exploit the opportunities available to him;
- A state of exclusion, stemming from an impossibility to participate in the life of his group and/ or the company and an impossibility to express himself;
- A state of vulnerability to a risk situation in which the individual is constantly bathing.

Poverty has many aspects: in addition to the lack of monetary incomes, poverty concerns hunger or malnutrition, epidemics, illiteracy, lack of access to drinking water, health care, housing, and clothing. Poverty is still living in unsanitary, polluted and risky environments. Poverty is, finally, the absence of power, representation, listening, social networks, all of which are sources of social exclusion. We can talk about monetary poverty that is defined by a monetary income available. In addition to insufficient income, monetary poverty may still be linked to difficult and even irreversible economic and social conditions: jobless, precarious employment, random income, dismissal, over-indebtedness. And Social poverty that is related to isolation more than desired, loneliness (involuntary), exclusion, marginalization. The causes are numerous, they can be related to the family (divorce, death and widowhood, single parent), to natural conditions (floods, cyclones, seizures), on conditions policies (attacks on loved ones, armed conflicts, genocide).

In September 2000, one hundred and ninety one (191) Heads of State and Government adopted the Millennium Declaration with commitments for international cooperation on peace, security and disarmament, with central concerns the eradication of extreme poverty.²

¹ http://hdr.undp.org/sites/default/files/reports/219/hdr_1990_en_complete_nostats.pdf Page 9/21

² <file:///C:/Users/admin/Downloads/IAR05-English-TenYears.pdf>



As a means of promoting development and eradicating poverty, the Millennium Declaration has created a set of goals that have become the Millennium Development Goals and have been successful in gaining broad international support through active engagement of key institutional actors and civil society. The objectives and targets associated with them reflect the commitments on extreme income poverty, primary education, gender equity, child mortality, and maternal health, HIV and AIDS, malaria and HIV / AIDS. Other diseases, environmental sustainability and global partnerships for development.

From a conceptual point of view, the Millennium Development Goals make it possible to define and quantify some key human development priorities because they are based on a minimum level of success. They reflect the possibilities and limits of consensus prevailing within the international community at a given moment and, in large part, do not take into account other important dimensions of inequality and freedoms of action. Human development is a broader framework that includes the Millennium Development Goals, but attaches great importance to more noble principles, such as human rights, democracy and participation, in order to provide guidance. , facilitating change. They are part of the road map that aims to implement the Millennium Declaration by identifying, by 2015, the major global development challenges and addressing, in particular, the key links between poverty and the environment.³

The focus is on the need to ensure a sustainable environment and includes specific targets for integrating the principles of sustainable development into national policies and programs. There is an urgent need to reverse the current trend of wasting environmental resources and improve access to safe drinking water, basic sanitation, basic education, and human health, all to eradicate extreme poverty.

Climate change

These include the decline in agricultural productivity, the increasing scarcity of water, and the increasing frequency and severity of climate shocks, particularly droughts, floods and cyclones. Ecosystem degradation, livelihoods, and increased health risks. Droughts, floods and hurricanes can have permanent negative impacts on human development, especially for the poor. They can lock vulnerable households into cycles of deprivation or into the pitfalls of low human development that can be transmitted from one generation to the next.

Section 2: Human Development, Poverty and Climate Change

Human development can only be sustainable. Thus, human development and sustainable development fit into the same overall purpose. It is through the lens of human development (HDR, 2007/2008) that the tribute to be paid due to climate change, in this case intergenerational poverty traps caused by climatic disturbances, has been highlighted. That the phenomenon called **"segregation in adaptation"**. It was, the first major development report to examine the impact of rising temperatures as evidenced by melting ice caps, changing patterns of precipitation at the local scale, rising sea levels, and forced adaptation for some of the most vulnerable groups on the planet. Around the world, people now view climate change as the most serious threat to their well-being. The idea that the world is facing one of the most important challenges in its history is, nowadays, more widely accepted, namely, the threat of climate change caused by the human race with potentially catastrophic consequences which, for the most part, were unpredictable at the time, in 1990. As a result, it presents a serious risk for the reduction of poverty by threatening to sweep away several decades of development efforts as underlined by the Johannesburg Declaration in 2002 while climate change is a global phenomenon, its adverse effects are felt most by poor people and countries⁴. In particular, they are vulnerable because of their high dependence on natural resources, as well as their limited ability to cope with climate variability and especially extreme weather events. If nothing is done, we will witness a regression in the level of human development, in the sense of changes in the future climate system with serious negative implications for millions of people, living in coastal areas, for people, dependent on agriculture and populations exposed to extreme weather events⁵.

³ <file:///C:/Users/admin/Downloads/IAR05-English-MillenProject.pdf>

⁴ https://www.who.int/mediacentre/events/HSD_Plaq_02.8_def1.pdf page 10

⁵ hdr.undp.org/sites/default/files/reports/268/hdr_20072008_en_complete.pdf Page 24 /28



Section 3: Impact of climate change on human development

Table 3.1- LINKS BETWEEN CLIMATE CHANGE, HUMAN DEVELOPMENT AND
THE HUMAN DEVELOPMENT INDEX

Index of human development		
Life expectancy at birth	Adult literacy rate	Income per capita
Link with climate change or environment		
Lack of access to adequate natural resources (food, clean air, clean water, sanitation) and vulnerability with natural disasters affect the health and life expectancy at birth.	The scarcity of natural resources in rural areas means that family members, especially women, are responsible for housework (gathering firewood or water supply instead of going to school.	Land degradation and lack of good natural resources (fertile land) reduce the income from agricultural activities. The frequency of extreme weather events has a major negative impact on income.

Source: ODHD 2005: (http://hdr.undp.org/sites/default/files/rndh2005_2006_mali.pdf) p21

Table 3.2- ENVIRONMENTAL CONTRIBUTIONS TO THE MDGs

Areas of concern	Goals	Poverty-climate change interactions
<u>Equality of sexes and education</u>	Ensure education primary for all	Environmental degradation contributes to increase the burden on women and children by increasing the time needed to search water and fuel wood and reducing the time available for education or income generating activities. The integration of environmental issues into primary school curricula can influence the behavior of school-going youth, the entire child, and ultimately their parents, promoting sustainable livelihoods.
	Promote equality of gender and empowerment women	Women often play only a limited role in decision-making, whether at the community level or at the national level, which prevents them from being heard effectively, in particular, from expressing their environmental concerns. They often have unequal rights and unsafe access to land and natural resources, which limits their opportunities to access productive assets.
<u>Health</u>	Reduce the infant mortality	Diseases related to water and sanitation such as diarrhea and acute respiratory infections due to indoor air pollution, are two of the main causes of under-five mortality.



Improve maternal health	<p>The impact of indoor air pollution on women's health and the carrying of heavy burdens, water and firewood can affect their ability to procreate and lead to greater risks complication during pregnancy.</p> <p>Malaria, which kills one million children under five every year, can be exacerbated by deforestation, biodiversity loss and poor water management.</p>
Combat HIV / AIDS, malaria and others diseases	<p>The global burden of disease is related to environmental factors mainly air and water pollution, inadequate sanitation and vector-borne diseases, measures to prevent health consequences Environmental factors are important and are often more cost effective than treating the resulting diseases. Environmental risks, such as natural disasters, floods, droughts and the effects of ongoing climate change, affect human health and can put lives at risk.</p>
Establish a global partnership for development	<p>Natural resources and sustainable environmental management contribute to economic development, improved public revenues, and the creation of decent and productive jobs and the reduction of poverty. Developing countries, in particular, Small island states have particular needs for development assistance, including to increase their capacity to adapt to climate change and to address other environmental issues, such as water and waste management</p>

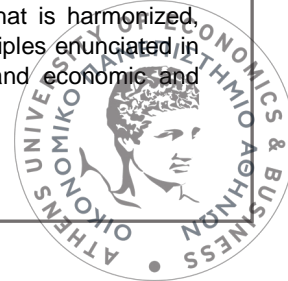
Source: <http://siteresources.worldbank.org/EXTANNREP2K8/Resources/5164353-1222371156065/French.pdf>, page 13

CHAPTER 2: GOVERNANCE IN THE REPUBLIC OF CONGO

The level of human development of a country is very strongly related to the quality of the different forms of governance, political, judicial, administrative, economic, which are conducted. In Congo, neither the strong economic growth observed in 2005, nor the country's ranking as a lower-middle-income country, has resulted in a high level of human development. Many countries with less favorable development conditions than the Congo have higher levels of human development. The root of this paradox must be sought in the state of governance in order to identify the shortcomings and propose the necessary improvements. It is one of the key objects of Human Development in a country.

STATUS OF POVERTY STRATEGIC REDUCTION IMPLEMENTATION

This section is concerned with capacity-building in the Public Administration and Public institutions to enable Congo to run those institutions duly, with cohesive, relevant sectorial policies aimed at ensuring sustainable development. The endorsement of the Paris Declaration by the Republic of Congo has strengthened this political will to undertake development that is harmonized, transparent, inclusive, and more effective, and to join with development partners in building upon the five principles enunciated in that declaration. This consists of improving political governance, administrative and judicial governance, and economic and



financial governance, strengthening peace and security, combating corruption, and including gender and environmental aspects in all actions undertaken.

Political governance

The government has undertaken significant structural and administrative reforms in order to improve political governance, which may be summed up as follows: capacity-building for institutions established under the Constitution, strengthening the culture of democracy and peace, improving the governance of political parties and associations, instituting a policy of quotas for women for all nominations and elections, and guaranteeing the freedom and independence of the communications media. Within this specific framework, the Parliament has played its role not only by ratifying legislation in various sectors, but also by undertaking its own management capacity building and establishing partnerships with international institutions. Parliament has questioned the government on a number of major issues such as the oil issue, fuel shortages, and price increases for basic commodities and building materials, demonstrating that the first signs are now evident of a democratic debate between the Parliament and the government. Participation in the 2008 legislative and local elections increased 17 percent in comparison with 2002 thanks to campaigns conducted both by the government and by the opposition parties to raise people's awareness of their civic rights and the role of members of Parliament. Legislation has been prepared providing support for political parties, in particular with regard to financing matters, and it will be implemented soon.

Peace and security

With regard to this important aspect, the Government is engaged in the consolidation of peace and security on the one hand and the free movement of persons and goods on the other. The actions undertaken in this direction are summarized as follows: Strengthening security to prevent conflicts and build a lasting peace. The construction of racks and ammunition bunkers has made it possible to better control the possession of weapons by the military and gendarmes. The completion of the construction of the headquarters of territorial units of gendarmeries in Niari, Likouala, Cuvette and Brazzaville has strengthened the territorial mesh. Despite the persistence of a resistance pocket in the Pool region, the National Disarmament, Demobilization and Reintegration Program (PNDDR) has made significant progress with the support of the World Bank and the European Union: 85% of illegal weapons were collected and destroyed; 90% of ex-combatants formerly active in the pool are demobilized and joined civil society; 80% of ex-combatants received technical training in the areas of income-generating activities or trades; 90% of former child soldiers received family or social care. The draft military programming and police bills for a period of five to ten years from 2010 are being prepared and will be submitted to the Government for consideration in 2009.

The proximity security was improved by the establishment of well-equipped national police mobile patrols and the construction of police stations was undertaken in Ouessou, Souanké, Pikounda, Ngbala and Ntam in the Sangha. A brigade of repression of banditism (GRB) was created in 2008. The operation " national identity card " and the introduction of biometric passports is proceeding normally. "

Administrative and judicial governance

In the context of administrative and judicial governance, the Government is committed to reforms aimed at: the continuation and completion of civil service reform, legal and judicial reform, the promotion of procedures and legal texts, the reinforcement of the human administrative and penitentiary capacities, the rehabilitation and the construction of and the administrative and penitentiary infrastructures, and the strengthening of the national statistical system.

It should be noted that the success of the implementation of the civil service reforms is decisive, in particular with the revision of the general status of civil servants and contractors, state reform and career management (Law 14). -2007 of 25 July 2007). A draft decree setting out the conditions of access to the civil service for out-of-category employees was sent to the General Secretariat of the Government (SGG) in 2008. The computer pay project (HR Payroll), which has in its program the management of the careers of state agents, was carried out at 80%. This will improve the quality of public services and the relations between administrations and users. In terms of infrastructure, the rehabilitation of an annex building in Brazzaville helped to decongest the ministry. The departmental directorates of the Pool and Cuvette public services are under construction with a planned completion in 2009.

Concerning the juridical governance, The Organic Law No. 22-2008 of July 26, 2008 on the organization, composition, and functioning of the Higher Council of the Court System has been promulgated, and laws were enacted in 2008 to create the following new courts:

- Law No. 12-2008 establishing the Ouessou court of appeal;
- Law No. 13-2008 establishing the Kindamba court of first instance;
- Law No. 14-2008 establishing the Oyo court of first instance;
- Law No. 15-2008 establishing the Mossaka court of first instance.



In addition, work is now under way on adopting three major pieces of legislation: the Congolese Citizenship Code, a draft law on indigenous peoples, and a draft law on the modernization of justice.

With regard to capacity-building, three seminars have been held: one on the "Support for the Rule of Law" project (2008), one on the topic of "Justice, Quality, and Performance," and one entitled "Introduction to OHADA accounting" (2009). Efforts have been made to construct or rehabilitate buildings, with the following being particularly noteworthy:

- Work has been completed on building the Impfondo court of first instance.
- Work has been completed on renovating the Dolisie court of appeal.
- Construction work has continued on the Impfondo, Kinkala, Ouessou, Madingou, Sibiti, and Pointe-Noire prisons.
- Construction work has continued on the Mossaka and Kinkala courts of first instance.
- Construction work has continued on the Ounsé-Talangaï, Ignié, and Ngabé courts.
- Renovation work has continued on the Pointe-Noire courthouse and the Dolisie court of first instance.

Decentralization

Congo has begun a process of decentralization whose pace deserves to be accelerated, taking into account the hopes put in this mode of management to bring the populations closer to the rulers, but especially to make them better assume their responsibilities in the management of the affairs which concern them.

According to the National Forum on State Reform held in 2010, consolidating the decentralization process in Congo requires:

- Definition of the decentralization policy and the implementation strategy
- The transfer of competence and resources to local authorities in matters transferred by law to departments and municipalities
- Development of a program of progressive implementation of the territorial civil service including the elaboration of all the texts of application of the law n ° 5-2005 of May 11, 2005 on the statute of the territorial civil service, the installation of organs, the construction of infrastructure housing organs and the recruitment of agents
- The reform of local taxation to guarantee the financial autonomy of local authorities and reduce their great financial dependence on the state budget
- The definition of a legal framework for decentralized cooperation with local authorities and NGOs

In addition, a local development strategy must be implemented, with:

- ✓ The development and implementation of local development plans, in accordance with a participatory methodology defined in the local development strategy document
- ✓ Promoting people's participation in business management by mobilizing support for grassroots initiatives and community groups
- ✓ The creation / development of a micro finance system
- ✓ The creation of a support fund for decentralization and local development

State Reform

The Congo embarked on the process of State Reform following the instructions of the Head of State contained in the Roadmap to the members of the Government in September 2009. It concerns all actions of change affecting the values as well as the modes of organization and functioning of the institutions, administration and other components of society. Administrative reform, which is an essential component of State reform covers all actions relating to organizational standards, structures, procedures, human resources management and public administration practices, in order to improve its performance. As for sectorial reforms, they implement strategies to contribute to economic, social and cultural development, by strengthening or improving the legitimacy of power, economic productivity, national solidarity, social cohesion or the influence of the country. At the end of the National Forum organized for this purpose in 2010, a preliminary draft plan was formulated. It suggests the following components to implement:

- Clarification of State missions and improvement of the institutional framework
- Decentralization and Local Development
- Consultation with civil society organizations
- Strengthening ethics and professionalism in the administration
- Improvement of public service provision and modernization of management tools



- Moralization of public life and fight against corruption and impunity
- Economic Development Management
- Public Sector / Private Sector Partnership
- Infrastructure development
- Strengthening the social system, national solidarity and the citizenship

Civil Society Organizations and Citizen Participation

The Republic of Congo is witnessing a spectacular development of non-governmental actors, including parties, foundations and various associations and the media. In reality, these actors are fragile vis-à-vis external bodies and even public authorities because of insufficient financial autonomy and technical capacities. Their efficiency in promoting human rights through awareness-raising and information activities, as well as in conflict management and resolution, remains to be proven. The political parties have little efficiency in the animation of the national political and economic life by their strong financial dependence, making embryonic the learning of the democratic rules.

Management of the macroeconomic framework and development orientation

In 2008, the Government of Congo adopted the Strategy Paper for Poverty Reduction (PRSP 2008-2010), a reference document for all socio-economic interventions. This document also served as a reference for development partners for their support in Congo.

The strategic orientations of the PRSP focus on:

1. Improving governance and consolidating peace and security
2. Promoting growth and macroeconomic stability
3. Improving people's access to basic social services
4. Social environment and integration of vulnerable groups
5. Fight against HIV / AIDS

The Government's development vision, which recognized the failure of past strategies, aimed at achieving the Millennium Development Goals and the New Hope Goals. For this, it established a link between the debt relief expected from the HIPC, which was intended to promote more sustained growth and a significant reduction in poverty.

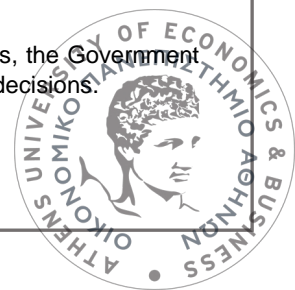
Overall and sectorial growth:

Congo's challenge for economic governance is the impetus for inclusive growth, a more diversified source of jobs. Indeed, over the past period, the relatively strong growth that the Congolese economy has experienced has not produced the expected effects on poverty reduction and on the improvement of the employment situation. This would require a stronger non-oil growth based on building a foundation of basic infrastructure accessible to all, the continuation of the structural reforms undertaken as part of the completion point research at IPTE (PAAGIP, PAAGFP in particular), improving the business climate. The average annual rate of overall growth over the period 2008-2010 was 7.3% largely due to the oil sector (12.0%), while non-oil growth was only 5.3%. % annual average. According to ADB calculations, the Congo would need to record non-oil growth rates of more than 8% per year over a relatively long period to significantly reduce poverty, given unequal income distribution.

On the sectorial distribution plan, it should be noted that the primary sector represented only about 4.5% on average of GDP in value, the non-oil secondary sector on average 75% and the rest, for instance 20.5% on average going back to the tertiary sector. Real growth in the primary sector averaged 6.9 percent over the 2008-2010 period, while the non-oil secondary sector grew on average by 9 percent and the tertiary sector by 7.5 percent. The engine of economic growth has of course been oil, but also public investment in construction, forestry and telecommunications.

The Government has launched a policy to encourage the rural sector, which should produce its effects in the medium term and contribute to the beginning of diversification of the Congolese economy. The greatest weakness of the Government in the area of macroeconomic management lies in the distribution of national wealth to reduce inequalities.

Given the fact that the progress of human development is very much dependent on efforts to reduce inequalities, the Government still has a lot to do in terms of fiscal and fiscal policy, and even monetary policy for aspects that may be national decisions.



Political budget:

Fiscal policy is the set of measures that have an impact on resources or expenditures in the state budget and aimed directly at acting on the economic situation. The state uses the budget as an instrument to act on the economic situation, but also to guide the economic activities in the medium term. As such, they play a significant role in sustainable human development. Congo's fiscal policy during the period was implemented as part of the Government Improvement Plan for Public Financial Management (PADFGFP) and the Action Plan for the Improvement of Public Investment Management (PAAGIP).

Three axes were followed:

- The expenditure chain
- The budget monitoring and evaluation, and pay
- Pension management.

The Structural reforms undertaken in the context of fiscal policy have thus focused on:

- 1) The updating of the budget nomenclature
- 2) The development and adoption of a new public procurement code
- 3) Improving the development of the fiscal policy framework
- 4) Improving the execution and monitoring of the state budget.

Fiscal policy has made it possible to clearly identify the pro-poor sectors, to identify the most appropriate measures at the request of the most vulnerable, and to follow the allocations made for the application of these measures. But this policy needs to be further strengthened, as it is recognized that budget execution is very often below expectations, especially in the social area where disbursement rates are low. This may explain the sluggish progress on access to low-cost services, despite strong allocations of budgetary resources in recent years.

Tax Policy

Tax policy is the set of decisions taken to institute, organize and apply tax levies in accordance with the objectives of the Government. It takes into account imperatives, but also social and economic objectives. It is largely a servant of fiscal policy. The Congo led a dynamic fiscal policy during the period that focused on the following reforms:

- The introduction of the new unique identifier at national level which has allowed the tax authorities to register all taxpayers and create a single file.
- The extension of the SYDONIA software which contributed to the control of the customs base, and consequently to the increase of the customs receipts, even if it is at a still timid pace.
- Capacity building of financial administrations and planning by the Training Program on Medium Term Expenditure Frameworks (MTEF), and The information of the financial authorities.

Section 4: Monetary and human poverty

Human Poverty

Education and Literacy

The constraints of the Congolese education system are known.

It is :

- (i) Insufficient education provision in terms of childcare facilities at all levels;
- (ii) the dilapidated and dilapidated infrastructures, linked, on the one hand, to the lack of sustained maintenance and construction policies, and, on the other, to the socio-political troubles that the country has known;
- (iii) Destruction of all kinds caused by uncivil behavior and spoliation of property by landowners and certain administrations, for lack of title deeds;



- (iv) The creation of establishments whose architecture does not comply with the standards of construction of school structures
- (v) The unequal distribution of school structures and staff across the national territory.

In preschool, the development of the number of establishments is very slow and remains mainly in the service of the big cities (Brazzaville and Pointe Noire) which count altogether 490 functional establishments, in 2007, against 420, in 2003, an increase of 14, 3%. Contrary to the dynamics observed in the other cycles of education (primary, general secondary, higher), the numbers began to fall since 1992, well before the troubled period of the end of the 1990s.

In the primary sector, the number of establishments increased from 1,542 in 2003 to 3,008 in 2007. This change is due to the emergence of private establishments with 1,154 establishments (including 63 approved institutions) in 2007 against 601, in 2003. After an increase in enrollment in the first half of the 1980s (an increase of 400,000 to nearly 500,000 pupils between 1982 and 1987), enrollments almost stabilized until 1997 before starting a sharp decline nearly 45% to hit a floor of 276,000, in 1999 because of the civil war. Subsequently, there is a vigorous recovery. Between 1994/95 and 2007/08, enrollments increased from 511,401 students to 661,548, an increase of 29%.

The gross enrollment ratio (GER) was structurally higher than 100% between 1986 and 2007, except in the late 1990s during the difficult period in the country.

This rate is artificially inflated by the high frequency of repetition (24% of primary pupils redoubled their class, in 2005, they were almost 40%, in 1990), which tends to overestimate effective school coverage. In accordance with article 16 of the school law n° 25-95 of 17 November 1995, the first cycle of secondary education aims to broaden and deepen the general education provided by primary education for the purpose of elevation of the theoretical and practical knowledge necessary for the further pursuit of studies. At the college level, enrollments were generally stable (with a slight downward trend) between 1980 and 1997, before declining considerably (by nearly 37%) between 1997 and 1999.

The numbers have more than doubled since, from 91,571 students to 215,230 between 1998/99 and 2007/08.

Many urban schools have more than 80 students per class. In college, the GER dropped steadily to 35% in 1999, when it was just over a third of its level in the early 1980s.

Since 2000, the TBS has gained 15 points between 2000 and 2005 (from 46 to 61%). The transition rate between primary and secondary school is close to 80% in the Republic of Congo, compared with 70% in these countries. This state of affairs requires an appropriate response in the

as there is no real policy of regulating the flow of students from primary to secondary school and the system "loses" more pupils in primary school than between primary and secondary school.

Article 17 of Law 25-95 of 17 November 1995 stipulates that the purpose of upper secondary education is to pursue higher education. In 2001, the Republic of Congo had 77 general schools, 28 of which

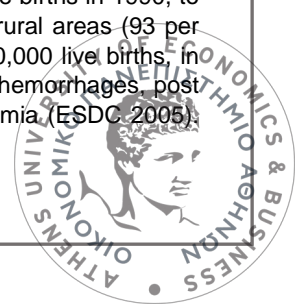
attend 29,486 students against 2,472 in the private sector. At 10,716 girls represent 33,53% of all enrollments at this level. Over the years, the network of upper secondary schools has improved a lot. Indeed, in the aftermath of independence, the Republic of Congo had only two major high schools: the school Pierre Savorgnan De Brazza in Brazzaville and the Victor Augagneur high school in Pointe-Noire. Today, each region has at least one such facility.

As a result, enrollment increased by around 46% from 30,000 in the early 1980s to just over 43,000 in 1996.

Health

The health situation of the Congolese people is not satisfactory with regard to the resources available to the country. Resources allocated annually to the sector could have resulted in much greater results if the governance of the health system had been effective.

The health situation of children under 5 years of age is worrying since the infant-child mortality rate in 1990 increased from 110 deaths per 1,000 live births to 117 deaths per 1,000 live births in 2005. This rate is significantly higher in rural areas (136 deaths per 1,000 live births) than in urban areas (108 deaths per 1,000 live births). Geographically, significant disparities are also observed, with high rates in the northern (142 per thousand) and southern (130 per thousand) regions than in Brazzaville (109 per thousand) and Pointe Noire (102 per thousand).). There are several reasons for the high under-five mortality rate observed. These include poor access to services, poor quality of health care and services, and low awareness of women about the health of children. The health situation of children under one year of age in the Republic of the Congo has improved very slightly between 1990 and 2005. The mortality rate for children under one year of age increased from 83 deaths per thousand live births in 1990, to 75 deaths per 1,000 live births, in 2005. There are also strong geographical disparities. This rate is higher in rural areas (93 per thousand) than in urban areas (66 per thousand). Maternal mortality is steadily increasing: 890 deaths per 100,000 live births, in 1990, 1,100, in 2002, 781, in 2005. It is among the highest in sub-Saharan Africa. Direct causes are obstetric (hemorrhages, post abortum infections /postpartum, etc.). Indirect causes are related to HIV / AIDS, malaria, tuberculosis and anemia. (ESDC 2005).



This situation is paradoxical in that 83% of women receive antenatal care and more than 86% give birth in the presence of trained staff. This clearly raises the problem of the quality of the supply of care and services. Variations in age-specific mortality rates show that the most affected are girls or women aged 20 to 24 (32%), as well as 20 year old girls (25%).

Unemployment and Employment

Unemployment is by its magnitude one of the most central social and economic problems of the developing countries. It is, therefore, an indicator that reflects the degree of inability of an economy to provide employment for its workforce. In general, unemployment can be defined as the inactivity of a person wishing to work. According to the ILO, any person (over the age of 15) who meets the following criteria is unemployed:

(i) "To be without work", for instance to have no activity, even minimal, during the last week;

(ii) "to be available for work", that is to say, to be able to accept any employment opportunity that arises within fifteen days, without a third obligation being an obstacle to return to work; activity;

(iii) "Actively looking for a job, or finding one that starts later". In this sense, the unemployment rate in Congolese urban areas is 16.1%. It is about 5 points higher in women than in men (respectively 18.8% compared to 13.9%), and affects more Brazzaville (17.6%) than Pointe Noire (13.4%), economic city of the country.

Current generations are more affected by unemployment than older ones. In fact, young people aged 15-29 are more affected by unemployment than people aged 50 or over (25.0% vs. 5.4% respectively); people aged 30-49 years occupy an intermediate position (12.7%). Young women are more affected than young men, but in the advanced ages (50 and over) unemployment affects both men and women. This situation, observed in both cities, is practically identical to Brazzaville. On the other hand, in Pointe Noire, unemployment affects both 50 and over the 30-49 age group (respectively 9.3% and 9.1%).

Chapter 3: Climate Change On Human Development in Congo

Geographic and Climate Plan of Climate Change

The geophysical characteristics of the Republic of Congo vary greatly in forest ecosystems in the north and south-west (Batéké, Pool and Niari ranges), from savannah to coastal ecosystems. The relief is articulated around the basins of Congo and KouilouNiari. The Basin of Congo is an immense basin largely occupied by the forest (196,689 km² on the national territory where converge several streams and is bordered on the west by plateaus including Mount Nabemba (1000 m). KouilouNiari, determined by a vast syncline (Niari valley 59,076 km²) of savannah ecosystem, leans against the Mayombe range (900 m altitude), extending parallel to the Atlantic coast to the southwest and against the Chaillu Massif in the Northeast.

The geological substratum of the Republic of Congo offers a diversity of geological formations (detrital, granitic, calcareous, metamorphic rocks), having undergone a strong alteration (ferrallitization, podzolisation) of the impoverished soils, of the sand-sandy texture and the modified soils with a clay texture. The impoverished ferrallitic soils account for about one-third (in the coastal plain, on the Cataractes plateau, in the lousséke on the Batéké plateaux, in the bowl area). The clay-sandy soils of the Cataractes Plateau and Batéké Plateaux are better provided in some places with organic matter. On the other hand, others are strongly leached and remain not very fertile: they degrade quickly after a few years of cultivation and are characterized by a chemical poverty, requiring the contributions of chemical fertilizers and organic amendments.

The Republic of Congo has an equatorial climate with a bimodal structure whose duration of the dry season decreases from South to North (3 to 4 months up to 2 ° C and 1 to 2 months for the rest of the country). The distribution of annual rainfall depends on the movements of the intertropical convergence zone of the interoceanic confluence and also on the surface states characterized by the various ecosystems mentioned above. The Congolese basin records nearly 1,600 mm, coming from 50% of local evaporation and evapotranspiration generated by the forest⁶.

The Republic of Congo, like Central Africa has two (2) great specificities compared to most other tropical regions:

⁶ <https://www.britannica.com/place/Republic-of-the-Congo/People>



- The low inter annual variability of rainfall, except in the Niari Valley. Local variability dominates, unlike the Sudano-Sahelian, East- and South-African regions where rainfall variations are organized in relatively coherent and large areas.
- The strong intra-seasonal variability, especially in the boreal spring, that is, in March. Despite its equatorial nature and low thermal amplitude, the climate of the Republic of Congo is not immune to global warming. In recent decades, the average temperature has increased in the order of 0.6 ° C and about 1 ° C.⁷ in large cities with a higher increase in the minimum and maximum.

The Government of the Republic of Congo has ratified the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and other multilateral environmental agreements. The country is therefore aware of the many challenges posed by climate change. The Congolese government has also produced the National Action Plan for the Environment (PNAE), which played a central role in identifying the country's vulnerability to climate change outcomes. In addition, a National Strategy, an Action Plan for Climate Change and Variability (SNPA / CCV, 2004) has been developed.⁸

Despite this political awareness at the highest level on the issue, the Republic of Congo has very little information on the impacts of climate change and few projects that focus entirely or in part on adaptation to climate change are still running. In addition, the few projects that exist in the country focus on other aspects of climate change, mitigation of climate change impacts and are isolated and unintegrated with others planning process of the country's economic development. Threats that the effects of climate change, both present and future, are placing on the development in the Republic of Congo is poorly documented. Although the country emits only about 0.95% CO₂ per capita, it is experiencing effects of climate change. Vulnerability is aggravated by multiple biophysical and developmental constraints, as well as by the weakness of its adaptive capacity.

The human impacts of current climate shocks provide a largely ignored context for understanding the implications of climate change for human development. Levels of malnutrition are rising and people are trapped in poverty traps. If climate change scenarios, predicting more frequent droughts and floods, prove to be well-founded, they could lead to a significant and rapid decline in human development in the affected countries.

The Global warming is expected to lead to an increase in temperatures of 2 to 3 ° C by 2050, accompanied by a decline in rainfall and a reduction in water availability. The combination of higher temperatures and reduced rainfall will result in a marked reduction in soil moisture, affecting the 90% of smallholder farmers who depend on rained production.

Observational studies (CNI, SCN) show that the whole Congolese territory warmed at a rate of about 0.05 ° C per decade during the twentieth century with a slightly greater warming from January to May. This warming trend is consistent with global climate change. Since the 1970s, the country has experienced the following climatic variations:

- ✓ A general increase in maximum temperatures of about 0.76 ° C and 0.69 ° C for minimum temperatures with moderate variability in space and in the temperature range and in the time. But on a seasonal scale, the warmest reheating occurs in the dry season (June to September) or southern winters. Spatially, the warming is more marked in savanna areas in the center and south of the country. This one is accentuated in the big cities (Brazzaville and Pointe Noire) by an additional urban effect.
- ✓ A general decrease in annual rainfall over the whole country with some spatial variability. This decline was accentuated during the 1980s, even in areas with high rainfall. This rainfall deficit is general over all of humid Africa.

A general decline in the flow of the Oubangui-Congo Rivers and their tributaries from the 1970s. Similarly in South Congo, the Kouilou-Niari flows are decreasing. This trend is similar to the annual precipitation trend. Evapotranspiration increased at the same time. In the southern part of the Republic of the Congo, evapotranspiration often exceeds precipitation over the entire Congo Basin.

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<http://www.unohrrls.org/UserFiles/File/LDC%20Documents/The%20impact%20of%20CC%20on%20LDCs%20and%20SIDS%20for%20web.pdf> Page 24

8

https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Congo/1/INDC_Congo_RAPPG_RT.pdf



Comparative evolution of rainfall

Index	Guinea	Central Africa	Zimbabwe	Global	Units
Total precipitation amount	-83.75	-31.13	8.33	10.59	mm/decade
Consecutive dry days	6.56	-0.06	2.92	-0.55	mm/day/decade
Consecutive wet days	-0.80	-0.35	0.11	-0.02	days/decade
Numbers of heavy precipitation days	-1.89	-0.67	0.15	0.29	days/decade

Source: E. AGUILAR et al (2009) in Changes in Extremes in Central Africa. Reference

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2008JD011010> : **Table 3.** Regional and Global Trends in Precipitation Indices or here file:///C:/Users/admin/Downloads/Changes_in_temperature_and_precipitation_extremes_.pdf pg8

The sea level rise of about 7cm on the coast. This will undoubtedly be accompanied by temporary changes in weather conditions, for example, strong tides and impressive surges.

Impact on the Biophysical Environment

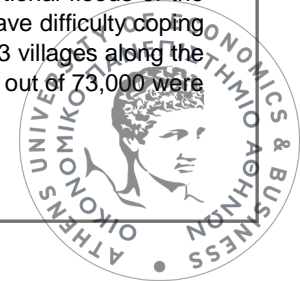
The key transmission mechanisms through which climate change can halt and reverse human development in the Republic of Congo can be summarized as:

- ✚ The modification of the cultural calendar. The agriculture sector remains mainly rain-fed and very sensitive to climatic variations. The instability of the rainy-agricultural seasons (October to December and March to May), characterized either by a shortening or an elongation over time, or by the inexistence of one of the seasons, restricts the range of possible speculations. This variability in the length of the rainy season poses enormous problems for farmers, most of whom are women (90%), in finding the right planting season. In addition, heat waves do not leave any chance of germination. Groundnut speculation in Niari knows these kinds of fluctuations.
- ✚ The vulnerability of the coastal zone. Many villages and public infrastructure in Loango Bay are under threat. According to the CNI report, 2001, about 1% of beaches are eroded. There are also many flooded areas.

The vulnerability of drinking water resources in the city of Pointe-Noire. The precipitation feeds the groundwater of the city of Pointe-Noire by effective infiltration of 350 mm / year. Due to the decrease in rainfall, there is a risk of a shortage of drinking water in this city, because these aquifers are more and more solicited by many traditional and modern wells (15 wells, in 1990, 91 wells, in 2008). Ultimately, precipitation will be stable and even decrease in this area of the coast. The overexploitation of these resources, which follow the ever-increasing demand, will lead to greater vulnerability of the populations who will be exposed to diseases and deaths, especially children.

Soil degradation results first and foremost from water erosion. The problem of water erosion in cultivated areas is evident in areas of steep slopes such as the plateau of cataracts and the Mayombe Massif, the rapid loss of fertility of cultivated soils.

The fluctuation of the flows. Disasters affecting different parts of the Republic of Congo are mainly rain erosion and floods following floods. Because of the size of the area affected, floods are considered the most important disaster. They are very frequent in the Congolese basin with consequences for human settlements and waterways. It should be noted that the exceptional floods of the Congo River cause floods in Brazzaville. The riparian populations, although accustomed to this phenomenon, have difficulty coping with these new conditions and are, therefore, exposed to the number of risks to rising water. Out of a total of 103 villages along the fluvial axes: Likouala Mossaka axis, Likouala with herbs and Owando, Mossaka, Loukoléla cities, 33,850 people out of 73,000 were



forced to abandon their homes. The public authorities declared a state of emergency during these floods (in October 1999). The rural area has suffered greatly for this purpose. These conditions caused the loss of several complete cycles of the harvest and a considerable reduction in already cramped farmland.

The decrease in annual surface flows. It is general for all rivers. For the Congo-Ubangi, this drop reaches up to 16% of the average intake estimated at 2.350 billion m³. The following impacts are noted:

the silting up of the diversion bays, which makes the movement of people and goods difficult and imposes movements of berthing ports (Beach of Brazzaville, Beach of Impfondo) and navigation stops in number of ever increasing days (1940 - 1969: 1 day, 1990-1993: 103 days). Trade, along the continually silted river axes, is based on fishery products and mainly supported by women who see their income lowered.

Erosion in the littoral zone already initiated in the past, with a significant annual decline in coastline in Loango Bay and in anarchically occupied urban hill areas. A population of 750,000 will be threatened in 2050 and will reach nearly 1,200,000 by 2100.

The decline in flows in the energy sector which disrupts the operation of hydroelectric dams in the Niari Valley and hydraulics, leading to a recharge deficit of deep aquifers, particularly in Pointe-Noire. In the long term, the water supply of this city will undergo more constraints.

The frequency of extreme temperatures. The trend observed in the increase of extreme temperatures (35°C for maxima and 20°C for minima), including the increase of minimum temperatures in the Niari Valley, could lead to favorable conditions for oil palm cultivation selected. Similarly, some cultivars of food legumes such as Cajamuscajan (pigeon pea) and Vignainguiculata (Niébé) are adapt to moderate rainfall and find better climatic conditions (CNI, 2001).

Impacts of climate change in the Republic of Congo

Main causes related to climate	Impacts
Rainfall variability, Extreme events	Moderate inter annual variability and distribution Seasonal high: <ul style="list-style-type: none"> Water deficit in the Niari Valley in the second cycle in March, April, May Decrease in flow (lengthening of Buildings, decreased productivity of the hydropower plant, eg central Moukouloulou, Silting of the navigable reaches, interruption of the navigability river. Increased seasonal floods (Mossaka, Makotipoko) Decrease of cultivated soils (Niari Valley and trays of Cataractes) Strong leaching of podzol soils on Batéké plateaus, low yields Increased erosion on urban soils; no application of the land.
Increased temperatures, extreme events	Increased urban heat islands (IQ) in major cities: <ul style="list-style-type: none"> Low maladaptation of habitat types Increased water stress by evaporation (Niari valley and Batéké plateau); Increase in the frequency of fires in savanna.
Acceleration of sea level rise, increase in ocean surface temperatures	<ul style="list-style-type: none"> Intrusion of saline waters into estuaries and the phreatic sheets Sulfation of estuaries Dysfunction of the coastal morphological process Loss of biodiversity in the mangrove; Weakening of upwellings Low productivity of the fishery.
Variation of the length of the seasons	<ul style="list-style-type: none"> Seedling off Loss of production and resources

- | | |
|--|--|
| | <ul style="list-style-type: none"> • Low calorie intake and low health. |
|--|--|

Long-Term Impact on Human Poverty and Social Inequalities

The disruption of agricultural cycles due to the shortening of the rainy season has an impact on agricultural productivity and therefore on food security. The decrease in surface runoff caused by the decrease in precipitation is causing flooding of rivers at the level of the collector that constitutes the Congo River. This has the consequence of increasing the extreme poverty of the populations (MDG 1) and their vulnerability through the loss of their habitat, the inaccessibility of their usual fishing zones, leading to a drop in the yields of fish catches and the loss of arable land. Extreme silting and drought are phenomena that are increasing almost year by year. It complicates navigation and has an impact on the fuel consumption of ships and motorized canoes, as well as the berthing of ships in ports. This decreases the traffic in both number of days and number of passengers, thus reducing commercial activity along the rivers. As many citizens live off this trade, the decrease in income impoverishes the population.

Inaccessibility to schools during the floods, particularly in the northern part of the country, and disasters caused by high winds, accompanied by some rains, often cause school closures. Given their unpredictability, the repair costs of these schools are not budgeted. Thus, either the students have difficulty completing a complete school cycle of studies (case of Mossaka), or they have completely interrupted studies for a good time (case of the villages Etoro and Obaba in the Batéké Plateaux). Abundant rains in the country, combined with the deterioration of roads, have an impact on the frequency of delays or even the absence of schoolchildren in the rainy season.

Since transmission routes, rains, temperatures, falling runoff, etc., impact agriculture, fishing and trade, along rivers, sectors in which women predominantly exercise 90%, the reduction of their activities and, consequently, their income, weakening their autonomy.

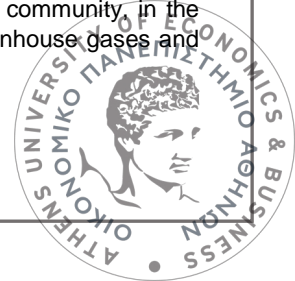
Global and National Response to Climate Change

World Strategy

The Republic of Congo, like other nations, is a stakeholder in the global climate change strategy contained in the UNFCCC in the process of reducing greenhouse gas (GHG) emissions. In order to avoid the catastrophic scenarios linked to global warming, the 4th report of the Intergovernmental Panel on Climate Change (IPCC) calls for a reduction of global greenhouse gas emissions by 25 to 40% by 2020 for the industrialized countries and 50% by 2050 for everyone compared to their 1990 level.

While the different international fora recognize the urgency of this issue and the need to address it in a timely manner, the ongoing negotiations within the UNFCCC have not yet determined, in the future post-2012 regime, consensual reduction of resignation ranges, effectively addressing this concern. Indeed, a current publication by the secretary of the convention shows that the commitments of the developed countries to date are 15 to 20% (excluding those of the USA who have submitted to their congress only a draft ceiling law for justify their political commitment to bring their emissions back to their 1990 level by 2020). The duration of the second commitment period is also under negotiation. In fact, if the five-year period is considered binding in the light of the rapid commitments to be made, a longer period (2013-2020) is proposed in order to be able to record the transitional and negotiation phases. Thus, the negotiators' proposals revolve around the medium-term level of greenhouse gas emissions commitment for developed countries and the participation of developing countries in the necessary global effort to mitigate emissions, and this, in the form of appropriate national mitigation actions (NAMA) for developing countries. Developing countries, as countries more vulnerable to the effects of climate change, need significant financial resources to combat the adverse effects of climate change. Thus, faced with urgent adaptation needs that require, according to various sources, an amount of \$ 10 to \$ 40 billion of investment per year, developing countries advocate for the relaxation of conditionalities and streamlining of funds. In addition, direct, easy and rapid access to resources by governments, as well as the system of individual allocation to countries is to be promoted.

In fact, each country, the contracting party to the convention, is obliged to report regularly to the international community in the form of a national communication note on climate change, the evolution of its greenhouse gas emissions, greenhouse gases and sinks, as well as efforts to mitigate them.



The transfer of technology is recognized as a prerequisite for both mitigation and adaptation actions. The deadlock on this point remains related to intellectual property rights, the lack of accompanying institutional and financial mechanisms and a divergence of views on the necessary approaches. A **Poznan strategic program** on technology transfer was adopted at COP 14. It aims to ultimately increase private investment in developing countries for mitigation and adaptation actions.⁹

The Deforestation and forest degradation have impacts on biodiversity and desertification and deforestation is unequivocal. The Bali conference decided to include in the post-2012 climate treaties a mechanism to take into account the reduction of emissions from deforestation and forest degradation (REDD) and, recently, negotiations include forest improvement (REDD +). Since then, various modalities and approaches for implementing this decision are under discussion.

The inclusion of agriculture is to be included in climate policies. For a variety of reasons, agriculture has been shelved from market mechanisms since the Marrakech Agreement and, as a result, the climate has not benefited from best practices in agriculture. In the post-2012 negotiations, the aim will be to integrate agriculture into climate policies. At the current stage of the negotiations, uncertainties remain as much about the future of the clean development mechanism (CDM) as about the contours of its possible reform in the new agreement. However, a more efficient regional distribution of projects The CDM could be of greater benefit to developing countries, especially in the context of streamlining procedures and the adoption of the rule and methodology, favoring the emergence of appropriate small and medium-sized projects. Ultimately, the Clean Development Mechanism needs to be thoroughly reviewed to allow eligible actors to attract foreign direct investment.

Mitigation and adaptation: response to climate change

The United Nations Framework Convention on Climate Change (UNFCCC) presents, in its article 2, the response to climate change that encompasses two strategies:

- The mitigation of controlling the greenhouse gas emissions to stabilize climate change within acceptable limits.
- Adaptation, which is equivalent to adjusting to the impacts of climate change as a function of the greenhouse gas levels present in the atmosphere.

In general, for Africa, the most viable option for dealing with the consequences of GHGs is adaptation. At the level of the continent, there are factors that explain the low adaptive capacity, which meant that the different interventions did not produce the expected results:

- ✓ Low level of development, Limited financial capacity.
- ✓ Limited technical skills, Low search potential.
- ✓ Insufficient or lack of structures capable of managing this adaptation.
- ✓ Inadequate policies and inefficient governance.

In Bali, countries agreed on a common vision, for instance a broad set of measures for long-term, concerted action, based on broad principles following:

- Developed countries take the lead in reducing emissions
- Developing countries and, in particular, emerging economies agree to contribute to the global mitigation effort
- Particular attention is given to least developed countries that must pursue their sustainable development and should not be subject to mitigation commitments
- Developed countries provide predictable additional funding, technical support and capacity building support to help developing countries adapt to climate change and contribute to reducing greenhouse gas emissions¹⁰

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documents.worldbank.org/curated/en/956261468151470163/pdf/656910WP0TechT00Box365722B00PUBLIC0.pdf

Page 5

¹⁰ <https://epdf.pub/development-policy-as-a-way-to-manage-climate-change-risks-climate-policy-series.html>

Page 58

23



Mitigation actions of developing countries:

Since there is general agreement that LDCs and small island developing States should not be subject to mitigation commitments, discussions on developing countries focused on ways to encourage mitigation commitments between them who are more advanced to engage in mitigation efforts. For low-income countries, which includes most of Africa, discussions focus on ways to help them harness the full mitigation potential of forestry and forest utilization lands. In addition, a challenge will be to find the appropriate indicators and methods to distinguish between developing countries that will need to make mitigation commitments and others including LDCs and Small Island developing States.

For the more advanced developing countries that are likely to make a significant contribution to mitigation, the following aspects are at the center of the debate:

- a) The obtention agreement on the scope of "nationally appropriate mitigation measures", discussions on these measures emphasized the importance for developing countries of obtaining accurate, complete and reliable greenhouse gas (GHG) inventory data and regularly reporting them,
- b) The establishment of a registry of nationally appropriate mitigation measures for the recognition of mitigation actions by developing countries and how to link mitigation actions with technological and financial support measures, and capacity-building support from developed countries, and to ensure that both mitigation and support actions are measured, reported and verified.

For low-income countries, discussions on mitigation took a more sectorial focus, focusing on the importance of "reducing emissions from deforestation and forest degradation" (REDD), and to a lesser extent on land use and land-use change actions, including in the agricultural sector. Given that deforestation is responsible for about 17 to 20% of total emissions, REDD offers significant mitigation potential and should be one of the key themes of the Copenhagen conference. While it is widely accepted that REDD+ activities could be a significant part of the mitigation efforts of developing countries with significant forest resources, their acceptance and implementation will need to overcome many challenges.

Adaptation seen as reducing vulnerability to current climate change and future

While the need to adapt to changes in the environment is not new, rapidly changing climatic conditions are creating new challenges that prior knowledge may not be sufficient. And indeed, adaptation to the consequences of climate change requires anticipating, having more detailed climate information at the local level and relying on a different organization. In this context, the shift from disaster management a posteriori to multi-sectorial and preventive disaster risk reduction (DRR) initiatives that are amenable to integration at the national level is instructive for adaptation to climate change.

The DRR approach is being given greater importance by those involved in climate change adaptation, although there is a significant difference since adaptation involves broader imperatives than DRR in the context of climate change, as it calls for actions, such as the adaptation of the tourism sector in coastal areas. The Bali Action Plan explicitly recognizes the importance of a DRR type approach to climate change adaptation.

It is recommended to:

- ✓ APP Provide urgent support to help meet the immediate priorities of vulnerable countries in terms of adaptation. The starting point is clearly NAPA funding and it needs to be complemented by support to African countries to help them systematically integrate adaptation into the strategies, National development issues.
- ✓ Support national / regional efforts to improve climate data and information and build capacity of African countries for monitoring climate change. Climate change and knowledge sharing.
- ✓ Helping vulnerable countries to take into account climate change adaptation at national and sectorial levels, as well as projects, through climate validation of development projects



Policies undertaken by the Government

The legal framework for the foundation of government forest and environment policy is the conservation and sustainable management of forest ecosystems. The political commitment of the Republic of the Congo to the conservation and management of natural resources is based on its adherence to the international and regional conventions agreements mentioned in Chapter I. An important national commitment has been made against deforestation and degradation through sustainable forest management and the development of protected areas, even if the decision predates the debate on the REDD project and climate change. The process was launched ten years ago in the Republic of Congo and formalized by the ratification of the "Yaoundé Declaration" with neighboring countries under COMIFAC (Commission for Central African Forests). The Congolese Forest Code obliges forest concessionaires to engage in the process of sustainable development. Results are already available: about 2/3 of the northern forest is in the process of sustainable development and the southern massif is recovering from the conflicts that took place around the year 2000. The country decided, with French funding, to launch an ambitious program of capacity building and provision of services for sustainable development in the South Massif.

The Republic of Congo has been working for several years to make every effort in reforestation, conservation and forest management:

The Republic of Congo has been selected by the World Bank FCPF as one of the pilot countries for the implementation of the REDD project. The activities of REDD are carried out by the National Coordination supported by a Study Board selected on international call for tender and which will be in charge of the preparation of the methodological and strategic components, aiming at the implementation of the REDD process.

A request for no objection has been sent to the World Bank to select the Design Office that will be responsible for:

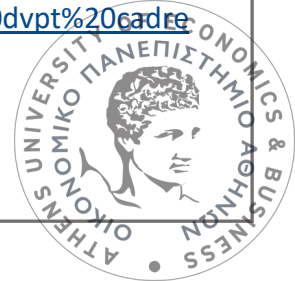
- ✚ To prepare a brief assessment of land use, forest policies and governance in the forest sector;
- ✚ To develop the national REDD strategy and design a national framework for REDD implementation;
- ✚ Analyze the social and environmental impact
- ✚ To prepare a brief assessment of land use, forest policies and governance in the forest sector
- ✚ To develop the national REDD strategy and design a national framework for REDD implementation
- ✚ Analyze the social and environmental impact
- ✚ Prepare a consultation and communication plan between the main entities
- ✚ To develop a reference scenario on the issues resulting from forest degradation and deforestation
- ✚ Set up a system for monitoring, recording and verifying changes in forest cover and carbon stocks at the national level
- ✚ Assess investment and capacity building needs for the implementation of the national REDD strategy¹¹.

The efforts of the Congo Basin countries paid off. The debate on the integration of forest degradation and the recognition of Congo Basin countries' sustainable management efforts will be closed by December 2009 at the 15th Conference of the Parties. Thus, REDD represents a new funding opportunity to strengthen sustainable forest management and biodiversity protection. The country is eligible for the African Adaptation Program (AAP) which has been designed to support the long-term initiatives of the targeted countries, in order to develop their capacity to select, formulate and implement holistic adaptation and adaptation programs, disaster risk reduction in line with national development priorities. In this respect, the AAP is not in itself a traditional adaptation program, it is rather a strategic initiative, aimed at creating, in each country, an environment, allowing decisions to be made and practices to be applied more effectively, able and better informed about adaptation.

The components of the AAP for the Republic of Congo are:

- ❖ To facilitate countries' access to the best data and information on climate variability and impacts
- ❖ Support the development of institutions and leadership through specific structured interventions in response to the circumstances and needs of each country

¹¹ https://www.forestcarbonpartnership.org/system/files/documents/Congo_Assistance%20dvpt%20cadre%20mise%20en%20oeuvre%20mecanisme%20REDD.pdf



- ❖ To make available to countries the best practices, experiences and technologies to facilitate the implementation of policies for the demonstration of climate change in priority sectors
- ❖ Provide each country with information on innovative financing options
- ❖ Create a regional mechanism of learning and knowledge to raise awareness, engage stakeholders, inform policymakers, and promote cross-country exchange and cooperation for R & D Republic of Congo¹².

Mitigation measures and short- and long-term adaptation to human poverty

Mitigation measures revolve around reducing greenhouse gases and promoting carbon sinks to absorb them. Although the responsibility for carbon emissions rests mainly with the industrialized countries, the use of fossil energy and industrial processes, rural poverty and subsistence agriculture are also responsible for some of the gas emissions, caused by deforestation and changes in land use. At the local level, farmers are continually adapting to climate change. They change crops or varieties, select harvest and seed periods, and modify land management. However, long-term climate change poses a new type of problem for farmers who depend on natural resources.

The Temperatures, on the other hand, are rising in all localities. The increase in temperature would exceed the annual scale 1 ° C (in 2050) and could reach 3 ° C by 2100. The heat waves will be more and more numerous flows. Taking into account the increase of the first two channels of transmission, the decrease of the flows should be maintained and the various rivers of Congo will have difficulty to return to their equilibrium state of the period before 1970. Evapotranspiration should to prevail over rainfall in areas of evergreen forest with many rivers as in northern Congo where silting is gaining ground.

The choice of farmers and resistant varieties by farmers and the practice of mixed farming and associated crops to which must be added the results of the introduction of innovative technologies in agriculture by the government under the NASP have increased the yields. But the continuous decline in rainfall, since 1980, makes it difficult to reach the usual yields. Poor women and men in rural areas generally do not have access to services, using green energy, which does not degrade the ecosystem. Households in rural areas rely mainly on biomass for meal preparation and heating. Similarly, the preservation of houses during the flooding due to dredging by the dredging of the city of Mossaka is a significant practical contribution, as much for the dredging of certain ports like that of the Beach of Brazzaville. For silting, only a few reactive actions have been undertaken by the government through the dredging of Mossaka and the river port of Brazzaville. Fishermen, with increasingly weak catches, adapt in an expensive way by looking for fishier areas farther away. They are getting poorer and there is no depreciation system to help them.

Floods, especially in the northern part of the country, hinder the movement of men and goods and consumer goods and, as a result, prevent children from attending school during these periods. The disasters caused by the storms that often tear every year the roofs of schools in several localities of the country leave abandoned several classrooms. Access zones, being difficult and budgets, being unplanned since they are random events, these disasters constitute certain threats to the achievement of this MDG.

Identify and desensitize the diversion bays that constitute the bottlenecks to the circulation of consumer products generated and marketed by women, who are generally the majority, to enable women to increase their financial independence and reduce their vulnerability. Because of the differentiation of roles between men and women in the field of agricultural biodiversity management, for example, women have a better understanding of plant varieties that have important nutritional and medical values (FAO, 2005). It is the women who prepare the meal, their choice of fuels used for cooking and the decision on their efficiency could reduce carbon emissions. The low level of education of men and women in a family limits their knowledge of mitigation options, such as the use of sustainable energy development issues (renewable energy and green energy).

Given the amplification of heat, favoring vector, respiratory, skin diseases, migraines. The government's efforts to provide free malaria treatment for children under the age of 10 have made progress in achieving this MDG. Which relieves families. However, with the Congolese economy focused only on oil, a drop in the price of a barrel of oil would negate the government's ability to subsidize this salutary action.

Congo's efforts to conserve biodiversity have resulted in the preservation of certain coastal areas for mangrove conservation, erosion, flooding and human impacts. But what has most advanced this MDG is the application in the field of conservation and forest management measures that contribute as a CO₂ sink to regulate the global temperature. Increasing anthropogenic pressure on forests for wood fuel reduces this sink every day if adaptation measures are not taken. Also, if the relentless harvest of non-timber forest products (NTFPs) resulting from a growing population poverty is not contained and if the certification policy of the forest management units (FMUs) is not Congo will see the efforts made to conserve biodiversity destroyed. Coastal erosion adaptation has not moved to the implementation stage. However, some measures to put some areas at risk have been taken by the government.

Compliance with the UNFCCC and Biodiversity Conventions has compelled the government to make business impact assessments mandatory. The partnerships created in the navigation framework (CICOS) on the Oubangui-Congo River constitute important

¹² <https://www.adaptation-undp.org/projects/africa-adaptation-programme>



instruments of joint consultation to allow a harmonious exploitation of resources. But these impulses are often held back by the inapplication of the decisions and the non-respect of the commitments made by the States.

Medium term mitigation and adaptation: response to urgent needs

The judicious selection of cultivars and varieties by farmers, as well as proven cultural practices, should be encouraged and maintained to increase yields and to combat poverty. However, dredging operations are very expensive and cannot be conducted on a regular basis. Projections of socio-economic scenarios, in the context of food security, suggest that, in the context of self-sufficiency (A2), the country must make efforts for endogenous development (increase in the coverage rate) to reduce imports. Such as rice, cassava supplement feed which a much higher coverage (115%) has compared to that of global solutions (B2) although in both cases the GDP needs to increase. The urgent need would therefore be to popularize and intensify rice cultivation to reduce hunger.

Floods being recurrent, it will be necessary to plan the corresponding social actions to take them into account in the budgets of the ministry in charge of social affairs. The purchase of motorized canoes could facilitate the movement of people and goods and reduce absenteeism in schools. This planning will quickly restore the affected institutions.

In short, since the drought that has been raging since 1980 is not weakening and it is impossible for the government to remove all watercourses. It is feared that if alternative income-generating activities for women are not envisaged, the achievement of this MDG will be compromised.

The salutary measure of adaptation is to diversify the Congolese economy in order to focus it on a second pole of development other than the oil constituted by agriculture by the creation of seedling or seedling banks by the government, in order to offset the environmental claims.

In addition to the measures taken by the government to prevent the anarchic occupation of the coastline, it will be necessary to design suitable dikes to stop erosion and rising seawater. Community plantations should here be beneficial to avoid the anthropogenic pressure for wood energy in order to conserve the natural forests and consequently the carbon sink.

Strengthen the services and the network of meteorological stations of Central Africa and support the creation of the regional climate center of Central Africa, as stipulated in the declaration of the first conference of ministers in charge of meteorology in order to mitigate the lack of reliable weather data in this region. This can only be achieved by boosting the meteorological services network of the sub region in a mutually beneficial partnership.

CONCLUSION

The dimension of human and social development remains a weak link in government action, as the Head of State (2010) pointed out, a considerable part of the Congolese, lacking the necessary minimum. As reflected in the PRSP, employment, water, electricity and health care are not yet available to everyone. The focus is not yet firmly on basic social services in education, health, access to sources of drinking water, a food market and public transport, housing ownership, appropriate transportation infrastructure (PRSP, 2007).

However, there is already progress towards the path of sustainable development, the annual growth rate of the HDI of the Republic of Congo has increased trend of 0.2% between 1980 and 2010. So, yesterday ranked 140th at as a world ranking among the 175 countries in terms of human development, Congo is ranked 126th in 2010 worldwide. This trend is mixed when taking into account the HDI, inequality-adjusted HDI which causes a regression of 31.8%. We understand then that the specific indices of human development do not follow all the same tendencies mainly that of the life expectancy of birth which does not record significant progress.

Major goals are identified in this approach to climate change:

The implementation of adaptation will be guided, including through the application of the following principles:



- Integration into sectorial policies of the "fight against climate change" dimension
- The concern for equity which requires the involvement of all the communities and socio-occupational categories likely to suffer the consequences of climate change
- Better governance of technical, human and financial resources
- The anticipation of crisis situations, as far as possible
- The fact that the use of social and insurance schemes, private or public, will not respond to all situations and may even delay necessary adaptation decisions
- The fact that aid and subsidies should not lead to the continuation of dead-end situations, but rather promote economic evolutions and diversification with a view to sustainable development
- The search for actions, with other advantages, apart from climate change.

Recommendation 1. Integrate the climate change dimension into all sectorial policies

The reports of the National Communication and the Second National Communication in the Congo make it clear that the climate change already observed is relatively low compared to the expected climate change, estimated by a set of socio-economic scenarios planned for the XXI century: then that the planet has warmed on average by about 0.67 ° C during the twentieth century, these scenarios lead to an estimate of the average warming by 2100 in a range between 0.67 ° C and 3 ° C compared to the average temperature of 1990.

Therefore, the right measurement of climate change and its implications for adaptation must be taken into account today so that it can be incorporated into decisions at all levels and in all sectors. , as well as mitigation actions that aim to limit the causes of this change.

"The impact of climate change will disproportionately affect the world's poorest countries, many of whom are here in Africa. The poor already live in the forefront of pollution, natural disasters and the degradation of resources and land. For them, adaptation is about survival, nothing less. "

Kofi Anan, former Secretary General of UN

Recommendation 2: Promote an integrated approach to gender equality (Gender mainstreaming) in climate change

The (re) organization, improvement, evolution and evaluation of decision-making processes, in order to incorporate a gender perspective, in all areas and at all levels by the actors, generally involved, in setting up the policy. Women are often less able to adapt to climate change than men. Most of them have lower incomes in rural areas. They generally have lower education than men and are therefore less likely to come into contact with extension agents. Provide an understanding of the gender dimension and reproductive health in climate change and environmental debates at all levels, and give priority to research and data collection to enhance understanding of the gender dimension and dynamics of the population in their relationship with climate change mitigation and adaptation.

Recommendation 3. Develop and disseminate climate and socio-economic scenarios

Climate scenarios will have to be constantly refined and disseminated widely, in forms easily understandable by the public and professionals. They may also be integrated into local information systems (egg: Geographic Information Systems). A major effort will be needed to provide a more accurate description of the socio-economic conditions, including local conditions that underlie the emission scenarios. The scope of the impacts as well as the adaptation possibilities will strongly depend on these conditions.

Recommendation 4. Strengthen knowledge about extreme events

A better knowledge of the extreme events and their consequences is necessary. It is justified, since the main elements, concerning vulnerability and adaptation, are attached to climate variability and its extremes more than to underlying trends. Experience feedback, such as the analysis of extreme events, the past and other regions, is also a great help in preparing for adaptation.

Significant progress remains to be made in the systematic assessment of damage associated with extreme events, based on hazards, local issues and vulnerability.

Recommendation 5. Strengthen research on impacts, vulnerability and adaptation



In order to provide the best guidance for possible adaptation actions and priorities, the possible effects of climate on our activities, our safety, our health and our lifestyles, as well as to ensure that we will be sufficiently protected against the possible effects of the future climate which will be very different from that of yesterday. Impact and vulnerability assessments have been weakly documented in the preparation of CNI and SNA reports

The impact assessment program should be continued and strengthened. The need to improve knowledge and monitoring of the impacts of climate change cannot be overstated. This upstream research is essential, in particular, to characterize uncertainties about climate change and its impacts.

Recommendation 6. Strengthen and sustain observation systems

Operational observing systems aim to record, on a regular and sustainable basis, data in order to be able to identify (or not) trends, anticipate developments and / or evaluate progress towards a planned objective. In close interaction with research, these permanent observing systems also aim to meet the demand of the public or decision-makers by providing them with scientifically-based information. The basic observation data must guarantee a homogeneity in space and time that makes it possible to overcome the changes in the observation modes, possibly in the location of the measurement sites or any other event likely to occur or introduce artificial breaks in the chronicles. Special attention must therefore be paid to the choice of basic data, to their processing and to their long-term nature. The information should be properly structured within information systems. It is therefore necessary to develop databases, to facilitate access to this information, while promoting the convergence of different skills on this topic. In order to carry out all actions aimed at preventing the risks associated with climate change, it is essential to commit, from now on, an important training and creation of sufficient posts in this field of observation.

Recommendation 7: Put in place indicators

The indicators, describing, in a synthetic way, the climate change, its consequences and the adaptation measures are based on the scientific knowledge which makes it possible to elaborate, validate and interpret them. But these indicators also need to be defined from end-user demand, in particular, local decision-makers. The usefulness of these indicators is all the greater as the data series are long and can be maintained over the long term. It is therefore crucial that they be defined from basic observational data satisfying this criterion. Three (3) levels of indicators should be considered: Indicators of certain phenomena, indicators to elucidate doubts and indicators of weak signals. As far as possible, these indicators will be accompanied by the specification of a margin of error or uncertainty.

The systematic definition and maintenance of indicators on climate change, its consequences and adaptation will allow for more precise monitoring while providing decision support. These indicators can be integrated into national sustainable development indicators, as in any other issue, requiring reliable and up-to-date information on climate change.

Recommendation 8. Put in place the water management schemes in collaboration with CICOS

In general, it is confirmed that the intensification of the hydrological cycle would increase the risk of floods in November / December in the Cuvette, as well as the duration of low water levels (June / October) in the Kouilou-Niari basin. In order to preserve the multiple functions and uses of this resource, it would be necessary to integrate the "new climate" into water management and management plans, at watershed level, as well as in water management and management master plans. In general, all operations aimed at reducing vulnerability in watersheds subject to flood risk deserve to be strengthened. This is also confirmed by a study carried out on flood protection dikes, which insists on the necessity of not aggravating the vulnerability of the exposed zones (to strong fortunes notably).

Recommendation 9. Promote the conservation of biodiversity

Beyond the specific interest of biodiversity and its role in the preservation of genetic capital, many human activities are dependent on their natural environment. Any factor aimed at preserving or restoring the resilience of ecosystems to the negative consequences of global warming must be studied and implemented (ecological corridors for example).

Recommendation 10. Diversify sources of income by growing short cycle varieties

As with natural vegetation, warming will significantly alter the functioning of the cultivated vegetation. It combines with the increase of CO₂ to stimulate photosynthesis, provided that water is available in the soil. This may be less and less the case in the summer in the south.

For agriculture, adaptation will involve changes in land use, cultivation methods and varieties used, as well as better management of water resources. The consequences of global warming will have to be taken into account in the context of agricultural policies and support for agriculture (as for example in the operational programs of the future rural development policy).

Recommendation 11. Diversification of energies.

In a scenario of increasing temperatures and decreasing precipitation, we can anticipate an increase in the demand for electricity in summer for air conditioning and refrigeration. In Spain, electricity consumption during periods of high heat is now practically at the level of winter consumption. At the same time, hydroelectric power generation may be affected by the different distribution of precipitation over time and space. The State and professionals should be involved in a strategy to promote renewable energies.

Recommendation 12: .Design an adapted urban planning and architecture

The multiplication of glazed surfaces exposed to the sun will cause overheating with higher temperatures. It should not happen to the paradoxical situation of having to cool to compensate for overheating. Climate models predict higher temperatures today, and heat waves are becoming more frequent throughout the year. It is therefore urgent to take preventive action in the field of building and urban planning to protect people from heat. The advantage is twofold: on the one hand, to improve comfort, in general, and to avoid health catastrophes, on the other hand, to limit at the same time the energy expenditure for air conditioning. Special attention should be paid to existing collective housing. The design of buildings (especially collective) should, in particular, aim to prevent the penetration of solar radiation.

Recommendation 13. Protect the coastline in a sustainable manner

It should also be noted that climate change, sea level rise, changes in ocean currents, salinity and water acidity, possible increase in frequency or intensity extreme events will have consequences for marine ecosystems, fisheries resources and maritime activities, including fisheries.

Climate change communication can also help local authorities to take into account public interest easements in their choice of development or urbanization of the coastal strip.

Recommendation 14. Sustainably reduce women's vulnerability to climate change.

The impact of climate change on agricultural, fishing and transportation activities is more sensitive to the level of women who are the majority in these industries in the country. ECOM's work has shown that agriculture, livestock and fisheries are, par excellence, sectors with a poverty index of 47.8%, exceeding the national index of 42.3%. As a result, the majority of people living in agriculture, livestock and fisheries are not only exposed to poverty but also to effects of climate change. There are chain effects that lock them into the spiral of poverty. It is imperative to identify, by ecological zone, the changes that are felt with climate change and provide adaptation solutions.

Recommendation 15. Protect from appropriate resources to combat disasters.

Disasters related to climate change are evident at the national level. For lack of a warning system, disasters caused by heavy rains, high winds, etc. are unpredictable. The programming in the budget law of a specific budget line entitled "Natural disasters" would allow appropriate interventions in real time.

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Thanks you!!!!

