

# CENTRAL AFRICAN REPUBLIC

Unity—Dignity—Labour

FIRST NATIONAL COMMUNICATION OF THE  
CENTRAL AFRICAN REPUBLIC UNDER THE  
UNITED NATIONS FRAMEWORK  
CONVENTION ON CLIMATE CHANGE

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## *EXECUTIVE SUMMARY*

December 2002

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MINISTRY OF WATERS  
FORESTS HUNTINGS FISHERIES  
ENVIRONMENT AND TOURISM

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OFFICE OF THE MINISTER  
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FIRST COMMUNICATION COMMITTEE OF  
'CLIMATE CHANGES'  
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Unity - Dignity - Labour  
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**C**ONVENTION ON **C**LIMATE **C**HANGE

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## INTRODUCTION

The present circumstances of globalisation constitutes a challenge of great importance for the Central African Republic. It generates deep transfer which affects most of the sectors. This tendency already perceptible will undoubtedly be amplified with the shocks of climate changes.

Encountering the international new deal, the Central African's Government has ratified on March 10<sup>th</sup> 1995, the Convention on Climate Changes issued from the United Nations Conference on Development held in Rio from 3 to 14 January 1992.

Being full membership of the Convention on June 8<sup>th</sup> 1995, the Central African Republic as other member countries must fulfil its commitment by submitting its First Communication to the Conference of the Parties according to the disposition of the 12 article of the Convention. The First Communication gives information on the inventory of anthropic emission sources and removal sinks of greenhouse gases which is not under the regulation of the Montreal Protocol, a study of vulnerability and adaptation options in the sectors which are vulnerable, and finally to set up mechanisms for the prevention of disasters related to climate changes in middle and long terms.

Regarding the changing environment question, corollary to globalisation, and after the national greenhouse gas inventory, three economic sectors which are vulnerable have been identified. We have: agriculture, energy and forestry sectors subjected to the analysis of vulnerability and adaptation options in order to determine future climate change's effect.

To fulfil its commitment with respect to the United Nations Framework Convention on Climate Changes, the Central African Republic must do exhaustive diagnosis of the sectors known as economic provider of the country to assess their capacity production, then undertake deep reforms by sectors. It requires the setting up of efficient policies and arrangement measures in socio - economic sector. Those efforts must be attached together with international actions in order to guarantee a sustainable development in the Central African Republic.

## CHAPTER I - NATIONAL SITUATION

### *1 - Geographical aspect*

1.1 - **Localisation** : One of the Least Developed countries of the world, the total national territory of the Central African Republic is 623.000 square kilometres with a population of 3.1 million inhabitants in 1994 and 3.4 millions in 1998 according to the projection. The Central African Republic is situated between the latitude  $2^{\circ}30'$  and  $11^{\circ}$  North ;  $14^{\circ}30'$  and  $27^{\circ}30'$  longitude East. Its relief is constituted with a vast plateau at an altitude which varies from 500 to 900 metres. Two mountains situated in North - East and North - West above 1000m high. The Mount Ngaoui in the Massive of Yade high of 1410m. The Central African Republic is an enclave country bounded to the west by Cameroon, to the South by the two Congo, to the North by Chad and the East by Sudan. The nearest harbours are those of Douala in Cameroon about 1500 kilometres and Pointe Noire in Congo about 1000Km.

1.2 - **Climate** : Located between the 4<sup>th</sup> and 11<sup>th</sup> parallel North, the Central African Republic benefited on the majority of tropical climate which is characterised by a dry season from November to May and a rain season from June to October.

The average annual temperature is  $26^{\circ}\text{C}$ . The relative wet varies from one season to another and reached the level of 36% to 55% whereas the average rainfall is 1200mm. During the season, the air is hot in the day light and cold at night. Monsoon and harmattan, two kinds of winds which prevail and determine the seasons.

1.3 - **Vegetation** : The Central African Republic's position between thick forest in the South and savannah zone in the North, gives him a varied flora which situated between the latitudes  $2^{\circ}$  N and  $5^{\circ}$  N are under equatorial climate condition with a short dry season.

In the Central region, savannah belongs to medio - Sudanese domain and are situated between the latitudes  $5^{\circ}\text{N}$  and  $9^{\circ}\text{N}$  under wet tropical climate condition from June to October and dry from November to May in the northern region. Sub Saharan climate conditions depend on the existence of savannah and steppe.

1.4 - **Soils** : Central African's soils by their nature and their distribution are linked to different geographic factors : climate, vegetation, relief. Wide scrap heap soils are very frails in the majority. But a weak extent of those soils located in Sangha - Mbaéré, Basse - Kotto and Mbomou are fertiles. Soils which grow poorer in clay, on sandy materials are in general very frail. They cover Gadzi - Carnot and Oudda's plateau. Putting those soils into cultivation requires lot of precautions. Soils which are altered are widespread and are precarious. Ligneous vegetation which is inappropriate to agriculture is often absent and cover Mbomou and Haut - Mbomou regions.

Soils located in rocky reliefs with slopes favour hydrous erosion. Putting them into cultivation require an anti erosive arrangement. Ferruginous soils nearly cover the Aouk bassin. Those soils are fertiles but less cultivated. Hydromorphic soils are situated in alluvial plains and are stoppage soils. Their utilisation requires water good management.

Central African soils are in general fertiles and very extended in the rainy climate zone. They are favourable to foodcrops, to commercial cultures and to intensive pastoral activities. Those soils opened to improvement are in the majority unexploited. The eastern part of the country which is depopulated keeps unsuspected potentialities. It is an edaphic reserve on the continent scale.

### 1.5 - *Socio politic Environment*

From the independence till the end of the eighties, the Central African Republic was ruled under three different single party regimes; an attempt of democratic system in 1981 was a failure.

In 1993, the country renewed with multi party systems. Free and fair elections were organised and the institutions of the Republic have been established. In 1996, 1997 and 2001, the country lived socio political crises (three mutinees and a miss coup which destroyed and jeopardized the economy of the country. Many companies of modern sector were destroyed involving lack of employments and considerable lack on the state budget.

That situation led the country in a difficult position with regard to financial economic partners and did not allow the Government to respond to its commitment in internal and external scale. Civil servants remain several months without being paid. In such a situation, low economic and institutional capacities added to the lowest income level per inhabitant, limits the elementary financial investment regarding physical and human capital that the country needs.

### *1.6 - Macro Economic Context*

The Central African Republic possesses numerous natural resources which are unexploited in the majority. Fertile lands, a favourable climate and adequate soils offer large possibilities to develop economic activities. Despite the richness of its natural resources, the Central African Republic is one of the Least Developed Countries of the continent.

Its economic depends strongly on agriculture which represents 43% of natural wealth formation and furnishes 75% of employments; the primary sector consists of forest, breeding, hunting and fishery represents about 53% of the Gross Domestic Product. Foodcrops production which represents 30% of Gross Domestic Product are wholly consummated at local level. Commercial cultures (coffee, cotton, tobacco etc..) generate income which varies from one year to another because this sector depends on the evolution of the international markets. Forest exploitation is limited to the production of rough timber, sawing and veneered wood. The biggest part of woods exploited is exported. Wood constitutes the second source of exploitation in the country.

The country disposes an important lode : diamond and gold. Diamond attracts young manpower but the income is not directed towards investment field. It constitutes the main resource of exportation. Secondary sector (including mining) represents 14% of the Gross Domestic Product in 1995 whereas tertiary sector contribution amounted to 33% of Gross Domestic Product formation.

On financial level, public expenses showed a deficit of 6.5% of GDP in 1997. Public debt which represents 80% of GDP is increasing constantly and reduces the capacity to eradicate poverty. This situation brings the Central African Republic to be dependent upon external aid in order to finance development actions. Financial Restructuration Programme is envisaged with stakeholders in order to boost the economy. The programme aims at privatizing public companies. The success of the Programme will depend on political evolution and public safety of the country. (voir tableau 1 en annexe)

Tableau n°1 : The Evolution of financial operations of the CAR Government from 1990 of 2000  
(in million FCFA)

Indicators	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (a)	2000 (p)
<b>Total receipts</b>	43.1	36.3	33.7	28.4	40.3	49.7	50.0	73.1	109.4	111.6	70.9
Fiscal receipts/others	43.1	36.3	33.7	26.0	38.3	49.7	33.2	45.0	56.3	59.0	56.3
External gifts	-	-	-	2.4	2.0	-	21.8	28.0	53.1	51.8	-
<b>Total expenses</b>	78.5	82.5	79.3	73.7	105.5	115.4	60.7	82.2	106.9	116.3	144.5
Current expenses	45.5	47.9	45.5	41.2	45.8	61.5	42.6	50.5	50.2	59.9	79.7
Expenses per capital	33.2	34.6	33.8	32.5	59.7	53.9	18.1	31.7	56.7	57.4	64.8
Proper expenses	8.5	4.4	3.1	5.7	7.2	6.9	4.5	4.5	8.3	14.0	12.2
External financing	24.7	30.2	30.7	26.8	52.5	47.0	13.6	25.2	48.4	43.4	52.6
Nominal GDP	392.2	388.5	377.7	362.1	473.6	560.0	525.4	569.5	615.1	636.9	686.4
GDP growth in %	-0.4	-0.9	-3.8	30.8	4.9	7.2	-4	5.3	4.7	3.5	nd
Rceipts (outside gifts in GDP %	12.2	10.4	9.5	8.1	8.1	8.9	6.3	7.9	9.1	9.4	nd
Current expenses in GDP %	13.5	13.3	12.8	11.8	9.7	10.9	9.0	9.0	8.0	9.0	nd
<b>External financial in :</b>											
% GDP	6.3	7.8	8.2	7.4	11	8	3	5	8	7	8
% Loan	32	40	29	33	31	26	15	9	1	2	8
% Gift	68	60	71	77	69	74	85	91	99	98	92
% Fin. Ext. En. Cap/dep.											
Tot. En. cap.	74.4	87.3	90.8	82.4	88.0	87.2	75.3	85.8	85.3	75.6	81.1
External debt	nd	nd	nd	nd	459.4	442.4	478.6	539.5	579.6	541.9	549.8
External debit in % GDP	nd	nd	nd	nd	97.0	79.0	91.1	94.7	84.5	85.1	81.1

Source : Financial and economic administrative structure (FMI and BEAC), annual report 1999 (Bank of France) Report n°18.134-CA related to poverty in the CAR (World Bank 1998) ; Budget report in capital (Ministry of Economy 90 to 99) ; Analysis Proportion of the socio economic situation of the CAR for periode 1986 - 1991 (UNDP) and Finance Laws 2000

N.B. : a = estimation, P= prevision ; Fin ext. = external financial ; Dep. Tot = Total expensis

Economic activity strongly returned in 1994 due to the competitive improvement which resulted from the new money parity (Franc CFA) and the increased prices of basic products on world markets. Unfortunately the military crises of 1996, 1997 and 2001 which caused drastic damage in the economy sectors, the sack of public wealth, the cripple of the administrative structure, have reduced the economic development.



The main constraints which caused the country poverty are internal and external enclave of the territory, the lowest productivity of the sectors provider of the economy, insufficiency of health and educational systems and bad governance.

National efforts of economic reforms are stamped by the elaboration of the National Programme of Actions (NPA) (1982 - 1985) and a Plan for Economic and Social Development (PESD) (1986-1990) which are strongly assumed by the Structural Adjustment Programme (SAP) I and II which the result have been compromised by social instability. From 1997, macro economic axes of development was to reestablish macro economic equilibrium and to remedy to institutional and structural weakness which leads to the organisation of first National Economic and Finances Round (FNEFR in September 2001).

### *1.7 - Population*

Different quieries and census conductedd in the CAR show that, the CAR population of the CAR is young. 42% of the population are at least 15 years old. Young adults from 15 to 29 represents 24.5% of the population; adults from 30 to 59 represents 24.2% and old people 4.5%. Women represent 50.2% of that population. This distribution varies whether in urban or rural areas.

**Table n°2:** Population distribution in % by group of age according to the sex.

Groupe of age	Male	Female	Total
0 - 4	8.3	8.0	16.3
5 - 9	9.9	9.2	19.1
10 - 14	7.8	8.1	15.9
15 - 19	5.0	4.6	9.6
20 - 24	3.4	3.9	7.3
25 - 29	2.8	3.5	6.3
30 - 34	2.6	3.0	5.6
35 - 39	2.4	2.6	5.0
40 - 44	2.0	1.8	3.8
45 - 49	1.5	1.0	2.5
50 - 54	1.1	2.1	3.2
55 - 59	0.9	0.8	1.7
60 - 64	0.8	0.7	1.5
65 - 69	0.4	0.4	0.8
70 - 74	0.3	0.2	0.5
75 - 79	0.1	0.1	0.2
80 and more	0.1	0.0	0.1
Nd	0.2	0.1	0.3
Total	49.4	50.6	100.0

Source : MICS 2000 RCA

We notice an inequal distribution of the population among the different regions of the country. Bangui, the capital city represents 22.5% of the population while Haute - Kotto, Vakaga and Bamingui - Bangoran is depopulated and represents only 3.6% of the whole population.

**Table n°3 : Evolution of the basic socio demographic indicators from 1960 to 1995**

Indicator	1959 - 1960	1975	1988	1995
Total Population	1.203.000	2.088.000	2.688.426	-
Growth birth rate ‰	48	43	41.6	38
Gross death rate ‰	26	18	16.7	-
Summary indice of fecundity	4.9	5.9	6.1	5.1
Natural growth annual rate %	2.2	2.5	2.5	-
Children death rate ‰	-	3.5	2.0	-
Global population growth %	190	185	132	97
Life expectancy ‰	34	43	49	-
Alphabetisation rate %	-	-	63	51.4
Net rate of scholarisation in the primary school %	-	45.6	48	63

Source : Demographic investigation from 1959 - 1960, General population Census of 1975, General population Census of 1988, Health and demographic Investigation of 1995

### 1.8 - Population and Poverty

Waiting for the setting up of an observatory on poverty to assess the level of poverty in the CAR, we can take into account certain datas issuing from different inquiries realised at national scale :

- ✓ Priorities inquiries on lives and households conditions from 1992 to 1993 which provides a large range of socio economic indicators ;
- ✓ Health and demographic investigations (HDI) from 1994 to 1995 ;
- ✓ Inquiries with numerous indicators which gave information on the availability of households to different services ;
- ✓ Integral investigation on budget - consumption from 1995 to 1996 which deepened it analysis on poverty in CAR.

Poverty expressed here is in terms of money income. The investigation highlighted that the threshold of poverty from 1992 to 1993 reached the level of 47.224FCFA per month so that 62.3% of the population are poor. The population the most affected are those of rural area which the level is amounted to 74.5%.

Moreover, 61% of the population live in rural areas and lack socio-economic equipment. Economic activities of modern sector is almost already inexistence. The rural economy is not too much diverse and is dominated by agriculture, breeding, hunting, fishing, mining and forest exploitation.

Yet, Health and Demographic Investigation (HDI) indicates the threshold of poverty to 10.030FCFA by person per month with an annual level of 371650FCFA per household. 49% of the population live under this threshold.

Poverty, deeply rooted in the majority of the Central African's households, is generally characterised by low level of consumption, which in monetary terms, do not enable poor people to satisfy their essential needs.

**Table n°4 : socio - économique indicateur**

	Income	Education			Health		Living Condition
	Poor proportion	Rate of Primary School Registration	Registration Rate	Access to Health care service	Access health care service	Life expectancy	Access to safe water
1990	72.9	69.0	11	32	78.1	49.5	12
1996	49.0	70.0	11	40	78.1	47.2	30.6
2000	49.0	68.0	12	49.1	65.2	44.6	38.6

Source : Basic datas on poverty, Ministry for Planning/UNDP 2002

**Table n°5 : socio - économique indicateur**

Year	CAR rank	Cameroon	Cchad	Congo	Gabon	Equatorial Guined
1991	142/160	152/160	152/160	115/160	97/160	137/160
1992	144/160	150/160	150/160	118/160	91/160	143/160
1993	133/173	165/173	165/173	126/173	109/173	165/173
1994	124/174	168/173	168/173	123/173	114/173	150/173
1995	127/174	162/174	162/174	122/174	114/174	150/174
1996	148/174					
1997	133/175	164/175	164/175	130/175	120/175	135/175
1998	142/174	173/174	173/174	128/174	120/174	135/174
1999	144/174	162/174	162/174	135/174	124/174	131/174
2000	134/174	167/174	167/174	139/174	123/174	131/174

Source : Basic datas on poverty, Ministry for Planning/UNDP 2002

## 1.9 - *Environmental Policy*

Environmental policy in the Central African Republic can be divided into two different phases from the independence up to the day today.

### 1.9.1 - From the independence up to the beginning of the 1990's :

It was, at the long time based on a vision of development sector, an approach and an administrative organisation of the actions which were carried out. Population were reduced to the role of speculators.

Drought of 1970 and 1980 which threatened and affects sahelian regions and broadened to the biggest part of the continent brought the CAR to take care of the danger. They become more and more aware with strong drought of 1982 - 1983 which affected directly the country.

Facing those serious problems, the country looks for suitable solutions to mitigate the aforesaid matters by :

- ✓ Setting up of adhoc committee related to environmental questions ;
- ✓ The preoccupation of some Ministerial Departments which pledge concrete actions and meetings initiated by the government to circumscribe problems ;
- ✓ Important political decisions in which we can notice, law promulgation and regulatory texts precisely the ordinance n° 84.045 related to the wild Fauna Protection regulating hunting and the ordinance n°90.003 related to forestry code of the CAR.

Apart of those texts the CAR has subscribed to bilateral and multilateral conventions related to Environment Protection.

### 1.9.2 - From 1992 to the Present day

An outline of environmental planning policy really started in 1992 with the preparation of the Rio Summit. It forecasts the principle signs of pressure on natural resources and on environment stamped by generalised poverty of the Central African's population. This situation results from macro economic inability of the country.

Today, the CAR is thinking of a new kind of development throughout a global and multidimensional vision and is on new ethical of conservation and the protection of natural environment. The National Plan of Environmental Action (NPEA), results from the long process of national dialogue on search for solutions and harmonized actions in favour of development and environment confine promising actions.

## CHAPTER II - THE INVENTORY OF GREENHOUSE GASES

The National Inventory of Greenhouse Gases in the Frame of First National Communication of the Central African Republic to Climate Changes is based on 1994 datas the year of reference. Datas were obtained thanks to different Departments such as : Department for Transports, Agriculture, Mine and Energy, Waters and Forests, Breeding etc... The Methodology used is that recommended by the 1996 revised Guidelines of the Intergovernmental Panel on Climate Change (IPCC).

### 2.1. *Total Emissions of Greenhouse Gases from the CAR per sector in 1994.*

**Table n°6 : Greenhouse Gas Emissions (Gg)**

Sector	Gases	Sinks			Sources			
		CO <sub>2</sub>	CO <sub>2</sub>	CH <sub>4</sub>	CO	N <sub>2</sub> O	NO <sub>x</sub>	COVNM
ENERGY			203	286	105	41	0	0
INDUSTRIAL PROCESSES			0	0	0	0	0	0
SOLVANTS AND OTHERS			0	0	0	0	0	0
AGRICULTURE			0	274	4173	33	48	13
LAND USE AND FORESTRY		140000	1535	1	13	0	0	0
WASTE			0	4	0	8	0	0
	<b>TOTAL</b>	<b>140000</b>	<b>1738</b>	<b>565</b>	<b>4291</b>	<b>82</b>	<b>48</b>	<b>13</b>

Emission per Sectors

## 2.2. - Comment

The analysis of the above table gives the following result.

Distribution of emissions per sector.

On the whole, the number of the Central African's population, its capacity of emission is smaller. Yet, it disposes an important capacity of sequestration.

Figure n°1 : Distribution of Emissions per sector

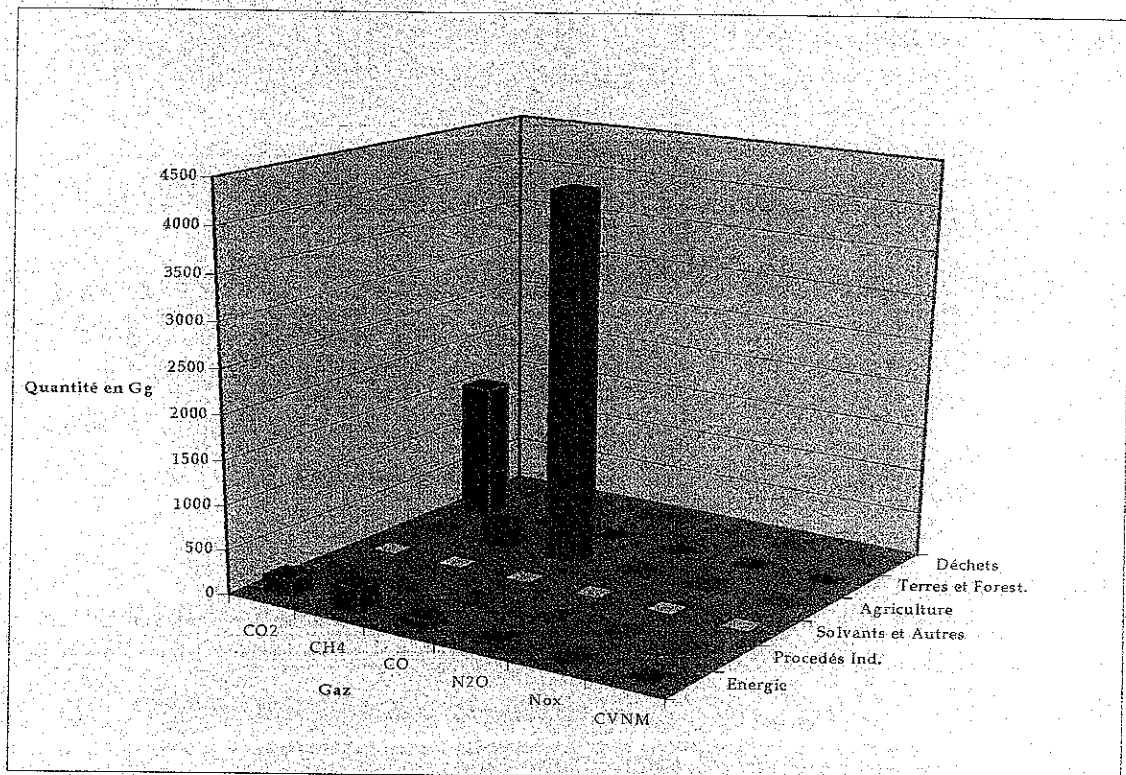
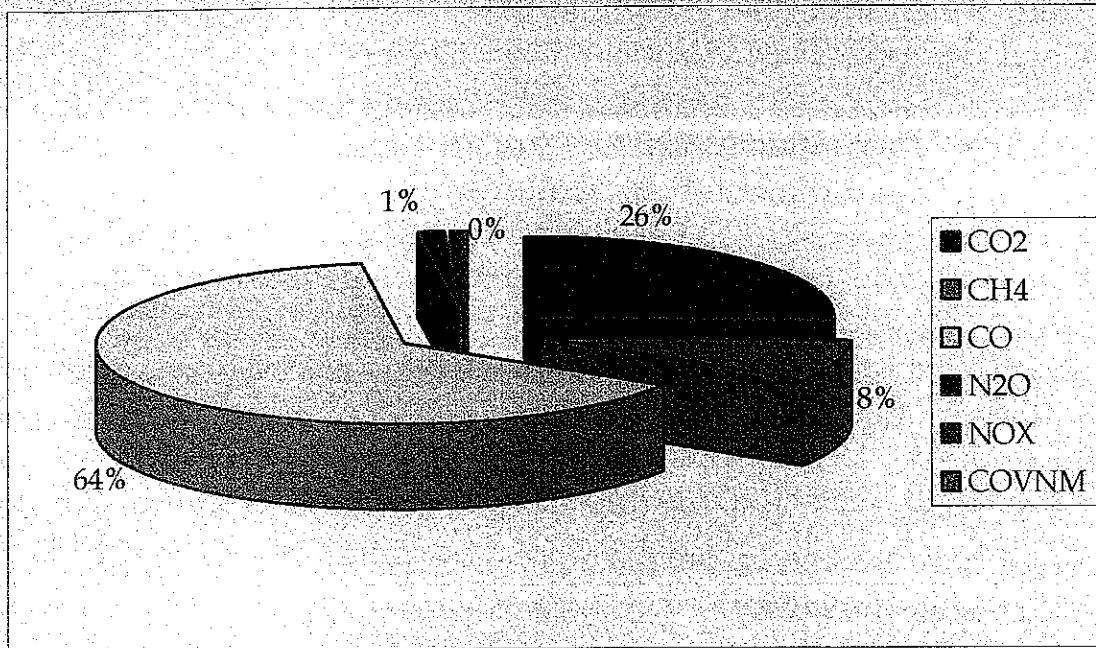


Figure n°2 : Gases emitted in the CAR



### **CHAPTER III : VULNERABILITY AND ADAPTATION STUDY**

The study of vulnerability were carried out on the agriculture, energy and forestry sectors.

#### **3.1. Agriculture**

The Central African Republic situated in the heart of Africa is very far from the littoral Atlantic about 1500Km from Douala and 1000Km from Pointe Noir.

The national territory of the CAR covers 623.000 square kilometre with 3700000 inhabitants with a density of 6 inhabitants per square kilometre. It is an agriculture country which uses 80% of the active population and contributes to the Gross Domestic Product which



amounted to 42%. The CAR has every chance of winning, abundant lands, rain which lasts many months (more than the half of the year), thickly hydrography. The CAR major constraints are :

- ✓ Its continentally;
- ✓ Its rudimentary agriculture;
- ✓ The absence of agriculture product transformations;
- ✓ Weak modernisation of production systems with traditional exported cultures (cotton, coffee) which are low paid because of the falling prices at international markets.

Foodcrops are not victim of enhancement. Central African agriculture is rudimentary practised, and is mainly used to feed family and is of smaller dimension.

Being member of the countries of Non-Annex I to the UNFCCC, the CAR must fulfil its commitment related to the National Inventory of greenhouse gases (IN-GES) not controlled by the Montreal Protocol. The national inventory of greenhouse gas inventory related to agriculture activities is undertaken within this context. We can retain that, agricultural activities are very important because 80% of the population practise foodcrops and income agriculture. Breeding is well developed.

Agriculture, breeding and rice irrigated are sources from methane emission due to enteric fermentation. Import quantities of CO, the main trace gases which resulted from burning are also emitted.

GAS	SINKS	SOURCES					
	CO <sub>2</sub>	CO <sub>2</sub>	CO	N <sub>2</sub> O	NO <sub>x</sub>	CH <sub>4</sub>	COVNM
AGRICULTURE SECTOR		0	4173	3	48	274	13
TOTAL			4173	3	48	274	13

1Gg = 1000tons

The Central African's agriculture comprises two sorting boards and occupies 700.000 ha of a total 15 million ha suitable for cultivation.

3.1.1 : The sorting board of exportation culture concerns cotton, coffee and tobacco. Cotton which is subjected to our study is the third culture which contributes efficiently to the Gross Domestic Product. Its turnover is about 10 billion per year. This culture feeds the fourth of the population. The production which is serrated is wholly exported in fibber form. There is no industry which treats fibber in the country.

3.1.2 Sorting Board of Foodcrops culture concerns seven (7) main speculations (manioc, peanut, corn, millet, sesame, rice, paddy, marrow). Manioc which is subjected to our study is the staple food of Central African. Its production about 600.000 tons per year is the most important. Agriculture is the economy backbone Government's preoccupation policy aims at :

- ✓ To ensure food safety
- ✓ To enhance productivity and foodcrops production
- ✓ To improve the population's condition of living and to increase their revenues to promote food self sufficiency and to reduce poverty throughout the diversification and intensification of productions. Climate Changes are real disasters for Central African's agriculture whose temperature is essentially 1°C to 2.5°C; So, rainfall enhancement of 10% needs necessary adaptation measures.

Sugar cane agro industrial culture which ensures at least more than 40% of the needs of population in sugar is of great importance. Taking into account the central African's demography which is in constant rise, the aforesaid level of 40% is insufficient . For all cultures we have mentioned above, climate changes constitute great disasters for their development.

### 3.2. - *Energy Sector*

The study of vulnerability and adaptation to climate changes was conducted on the basin of Mbali as an example in the energy sector.

The basin covers a surface of 4560 square kilometres and present a Sudanese Guinea Climate in savannah between Yaloké and Bossemblelé and a Sudanese - Oubanguien Climate of forest, between Bangui and Boali.

In that basin, average rainfall is amounted to 1500mm, evaluated on the basis of influences that rainfall stations of Bangui - Sibut have on the basin.

Average temperatures per month reached the level of 19°C to 33°C minimum and 29°C to 33°C maximum. Mbali and Mbi flow into the Pama which takes its source in Yaloké. Pama meets Mpoko river before flowing to Oubangu river. Average flow per month and year of Mbali in Boali is about 56m<sup>3</sup>/s during rising of water period and 24m<sup>3</sup>/s in lowest water level period.

For vulnerability study of the basin of Mbali with regard to climate changes, we do not have MAGICC - SHEGEN tool to show the projection of rainfall and temperature to the horizon 2025, 2050 and 2100 on local scale. Yet, the study was realised taking into account Experts observations which consist of analysing rainfall and flow's chronological series, varied temperature which is lower in the site.

The results of the study show that the first rainfall deficit on Mbali basin dated from 1967 involving the decrease of hydrological regime of the whole rivers and streams of the region in 1971. That drought was stressed in 1983, with drastic effects, taking into account its fullness space time.

In 1994, the level of Mbali river always stays its lowest level despite the important raising up of rainfall. The observation of the chronological and hydrological series show disturbance in 1971, eight years after rainfall's disturbance. Wet period was succeeded by dry period which lasts more than 25 years. But in recent years from 1967 - 1989, the increased rainfall amounted to 37mm while the lowest hydrocity reached the level of -60%. Water table of the basin of Mbali does not recharge.

Mbali with its 350.000.000m<sup>3</sup> has been setting up into water in 1991. That reserve serves for readjustment during wet and dry periods. During wet period, the excess water surplus till 450m<sup>3</sup>/s about four times the flow of rising water and till 300m<sup>3</sup>/s by goes through overflow basin in a manner to evacuate water the opening of buttom draining. According to the expert's opinion, the risks of disasters related to climate changes would be reduced. In other case, the Government has provided an energy outline which forecasts for 15 years, a set of projects concerning hydroelectricity sub sector, with the Central of Palambo, the extension of Boali II and the Central of Lobaye.

### *3.3. Forestry Sector*

Generally, the CAR is a woody country. Thickly and wet tropical forest (forest of production) is situated in the southern region with five million hectares. This forest of production is made up of : South - West forest with a surface of three million five hundred thousand hectares which is subjected to commercial exploitation aims at lignous product. In this part of the country, thirteen (13) forest exploitators have settled down. Forest located in the Southern East par of the country with one million five hundred thousand ha is just subjected to multi resources inventory and are available for exploitation.

Thickly wet forest in the South belongs to homogenous and rich zone of the wet thickly forest in the Congo Basin which spreads from the South East of Cameroon to the North of the two Congo. The gradient of the Central African's vegetable formation (from South to North) is the forest followed with woody and bush savannah which starts from the center part of the country to the North and in the extreme North a grassy savannah rich in wild fauna.

The exploitation of wood in the forest located in the West Southern part of the country generates in one hand receipts to the Government and in other hand contributes to unemployment reduction and participate to the reduction of food insecurity of riverside residents.

The need in energy wood is very important particularly to the population living around biggest towns - wood fire occupies an important place in the economy of the country.

From the studies conducted on greenhouse gas inventory, the results show clearly that the Central African's forests are sinks of gases non controlled anthropoid actions can probably cause a surface reduction of those sink gases.

We sustain that (without climate changes, and with the implementation of the present forestry policy) the tendency is that. The growth of ligneous plants does not face any problems. Consequently, the CAR constitutes a guanine sinks of greenhouse gases.

Modifying the two climate parameters : temperature and rainfall two cases of figure are presented :

- ✓ Rainfall and increased temperature will favour the growth and the regeneration of ligneous plants. In the case, we assist to the enhancement of forest's surface, consequently a high level of carbon sequestration capacity.
- ✓ Increased temperature followed up with low rainfall will cause an important need of water in ligneous plants a decrease of regeneration, a surface reduction, in other term, low sequestration of carbon. Adaptation measures to climate changes are numerous. Among all of them we can list :
- ✓ Capacity building, information, education, training of the population, technology transfer, multi and bilateral corporations, environmental good governance.

## **CHAPTER IV : ADAPTATION STRATEGIES AND ADAPTATION OPTIONS**

Several adaptations strategies, attenuation, reducing emissions of greenhouse gases and sequestration of CO<sub>2</sub> in the Central African Republic have been enumerated within the framework of the project studies, in energy and forestry sectors.

Those projects are hereafter presented :

- ✓ Capacity building in the implementation of the Kyoto Protocol;
- ✓ Afforestation;
- ✓ Support to manioc production;
- ✓ Improvement of carbonisation techniques and protection of the carbon sinks.

Those projects aiming at the reduction of greenhouse gases could create in the CAR important permanent employments in urban and rural areas and can avoid rural exodus.

## **CHAPTER V - GLOBAL STRATEGY TO ENCOUNTER CLIMATE CHANGES**

The Central African Republic as other Least Developed Countries must create a mechanism of corporations in the field of Climate Changes with partners of development related to the essential questions of African capacity buildings. A creation of a regional data center or sub - regional that can enable to master the sectors of activities which are concerned with Climate Changes in order to prepare eventual response strategies.

## CONCLUSION

The Central African Republic, to meet one's obligations within the United Nations Framework Convention on Climate Change, has established its National Communication. With regard to the inventory of emission sources and removal sinks of Greenhouse gas realised, in compliance with the IPCC Methodology 1996 revised, the results shown clearly that, in 1994 the country contributes less significant to the Greenhouse Gas Emissions (the estimation of emissions by source is amounted to 6737Gg) distributed as follow; CO : 64%, CO<sub>2</sub> : 26%, 8% for CH<sub>4</sub> and 1% respectively for N<sub>2</sub>O and NO<sub>x</sub> and 0% for NMVOC.

The quantity of CO<sub>2</sub> sequestered per year is estimated to 140000Gg thanks to important ligneous potential which constitutes an immense sink of Greenhouse Gas.

The result of the studies on Vulnerability and Adaptation Options in the main sectors of economy, precisely the sectors of agriculture, energy and forestry show that, the scenarios studied, the simulations reveal climate modifications which will be demonstrated by temperature enhancement to the horizon 2025 ; 2050 ; 2075 and 2100. Those modifications could have consequential effects on economic development programme.

Anthropic activities which result from burnt agriculture in forest zones, intense forest exploitation by Forest Companies, population growth, incessant need of firewood and electric energy for households and cold production (air - conditioning and preservation), rise in temperature do not forecast good future prospects in the sectors of energy and forestry. Central African Agriculture which depends essentially on rainfall, will undergo profound alteration facing rainfall modification which will cause culinary capacity changes, variety alternation to adapt and will prescribe popular work of irrigation.

The aforesaid factors will reduce the country capacities to respond to potential consequential effects of climate changes.

The National Communication hereby describes the CAR vulnerable to climate change effects and reveal that efforts must be done to set up strategies. The CAR is determined to fulfil its obligations within the UNFCCC to proceed with the efforts which were carried out, in compliance with the provisions of the Convention which aim at the protection of atmosphere ; International Community's support is confirmed absolutely necessary through positive measures.