

**CENTRAL AFRICAN PROGRAM FOR THE ENVIRONMENT
(CARPE)**

ENVIRONMENTAL ANALYSIS

**Environmental Threats and Opportunities Assessment
with Special Focus on
Biological Diversity and Tropical Forestry**

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Acronyms/Abbreviations

AFR/SD	Africa Bureau/Sustainable Development
ADS	Automated Directives Systems
ATO	The African Timber Organization (ATO)
CAR	Central African Republic
CARPE	Central African Program For The Environment
CBFP	Congo Basin Forest Partnership
CBNRM	Community Based Natural Resources Management
CBO	Community Based Organization
CEFDHAC	Conference on Central African Moist Forest Ecosystems (Conférence sur les Ecosystèmes de Forêts Denses et Humides d'Afrique Centrale)
CI	Conservation International
CIA	Central Intelligence Agency
COMIFAC	Conférence des ministres des forêts de l'Afrique Centrale
DRC	Democratic of Congo
EDG	Environment and Development Group
FAA	Foreign Assistance Act 1961 (as amended)
FORNESSA	The Forestry Research Network for Sub-Saharan Africa
IR	Intermediate Result
IUCN	World Conservation Union
ITTO	International Tropical Timber Organization
NGO	Non-governmental Organization
NRBE	Natural Resource Based Enterprise
NTFP	Non-timber forest product
SADC	Southern African Development Community
SO	Strategic Objective
TI	Transparency International
UMD	University of Maryland
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development
WWF	World Wildlife Fund

PART 1 ENVIRONMENTAL ANALYSIS

1. Executive Summary

Background

This document constitutes an Environmental Analysis for the Central African Regional Program for the Environment (CARPE) Strategic Plan. Together with the Conflict Prevention Analysis and the Gender Analysis, it provides a basis for the priority setting and strategic planning process by USAID, CARPE management, and partners in developing the new strategic plan. CARPE activities have been managed out of Washington DC to date, but the program will now move to the field. Under the new strategic plan, CARPE will operate as a stand-alone regional program under the Africa Bureau, based in, and administratively managed by, the Kinshasa Mission.

CARPE has undertaken activities in nine countries within the central African region, namely Burundi, Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda and Sao Tome and Principe. These countries make up the core of the Congo Basin, an extremely important watershed of local, regional and global significance, and the world's second largest contiguous lowland tropical forest. Dense forests extend over 1.9 million km² of Central Africa, covering almost 50% of the landmass.

Purpose

The purpose of this environmental analysis is to:

- Provide an overall environmental “snapshot” of the region covered by CARPE
- Analyze key environmental threats and opportunities
- Address tropical forestry and biodiversity issues and meet the requirements of FAA 118/119
- Identify opportunities for addressing environmental threats in the CARPE program
- Describe how the new USAID strategic objective will meet the needs identified.

Part 1 presents an overview of environmental assets, threats and opportunities within the central African region, considers the factors related to the overall environmental sustainability (FAA 117) and addresses the Agency strategic planning guidelines and requirements (ADS 201). This Environmental Analysis is a technical analysis required by USAID for the development of strategic plans (ADS 201.4.11b). It is mandatory for bilateral programs, and deemed optional for global or regional strategies that cover multiple countries.

Part 2 addresses the requirements set forth in the Foreign Assistance Act. Sections 118 and 119 and addresses biodiversity and tropical forestry within the region. Under the Foreign Assistance Act, Sections 118(e) and 119(d), all country level Operating Unit Strategic Plans must include an analysis of the actions necessary to conserve biological diversity, and to achieve conservation and sustainable management of tropical forests, and the extent to which the actions proposed meet the needs thus identified

Part 1: Key environmental Threats and Opportunities

This section provides an environmental snapshot of the region and identifies some of the main environmental threats in central Africa. Some of the key needs include:

- Improving poor forest management practices
- Curbing illegal logging
- Understanding agricultural systems suitable for this area, and addressing conversion of forest to agricultural land
- Monitoring and halting the loss of biodiversity
- Ensuring the adequacy, representativeness and sustainability of protected areas
- Taking measures to stop unsustainable harvest of bushmeat
- Improving environmental governance
- Providing a sound basis of environmental monitoring and capacity building to improve decision-making in Central Africa
- Exploring alternative economic options for local communities; developing sustainable natural resources-based enterprises and the systems that support them.
- Ensuring stakeholder involvement at all levels
- Addressing corruption and instituting transparent systems
- Understanding and incorporating the role and value of environmental/ecological services

- Exploring options for carbon trading
- Mitigating the effects of global climate change
- Maintaining healthy water cycles
- Adopting a river basin/watershed approach that is transboundary
- Considering the urbanization of the region and associated environmental needs for sanitation, clean water, access to resources, and market restrictions
- Improving agricultural methods suited to the region and strengthening the farm to market chains and linkages for sustainable agricultural and forest products
- Increasing cooperation among the central African countries in natural resources management ensure the protection of biodiversity and tropical forests in the region.

Environmental Analysis of Proposed CARPE Strategic Plan

The proposed CARPE Strategic Plans consists of one strategic objective: “Local, national, and regional natural resource management capacity to reduce forest degradation and conserve biodiversity in Central Africa enhanced”. This SO, by design should have beneficial effects on the environment, since it will improve natural resources management, by operationalizing management plans in selected landscapes and strengthening regional institutions.

The three proposed intermediate results (IRs) are:

- IR 1: Sustainable Natural Resources Management Practices Applied
- IR 2: Natural Resources Governance (institutions, policies) Strengthened
- IR 3: Natural Resources Monitoring Institutionalized

Most of the activities envisioned under this IR appear to involve planning, technical assistance, training, research, enterprise development, and/or information exchange, with little or no impact on the environment. There are a few illustrative activities that could have environmental consequences, depending on what type of programs are carried out, and how they are implemented. These include some of the livelihood or enterprise development activities, i.e. forest camps, and possibly the forest regeneration and other activities. The proposed agricultural intensification activity may need further environmental review, especially if it involves the expansion of agrochemical inputs and/or the introduction of genetically modified organisms. Activities that involve the harvest of wild resources need to be carefully monitored to ensure that harvest levels are sustainable. Any activities involving the cutting of tropical forests, would require several levels of analysis.

USAID Priority actions to address threats and improve situation

The proposed CARPE strategic plan addresses many of the key threats identified in the analysis, especially those relating to forests and forest fauna, through targeted actions in various countries and throughout region. The proposed landscape approach directs USAID interventions at both protected areas and non-protected areas within a landscape. This will help to integrate conservation approaches within the region, and to help improve participation and livelihoods of local people. The transboundary approach, as well as the policy reform and environmental governance activities, are important to address environmental threats.

Part 2: Tropical Forests And Biodiversity: FAA 118/119 Assessment

Part 2 of the Environmental Analysis provides a Biodiversity and Tropical Forests Assessment, in fulfillment of Sections 118 and 119 of the Foreign Assistance Act (FAA) Guidelines for US government agencies working abroad.

Tropical Forest Overview

The Congo Basin contains the second largest continuous tropical rainforest in the world. Dense forests extend over 1.9 million km² of Central Africa, covering almost 50% of the landmass. Biodiversity within the forest is high – with over 400 species of mammals, 10,000 species of plants, over 1000 birds as well as myriads of insects, reptiles and amphibians. Central Africa is home to three of the largest expanses of tropical forests of the world, and its forest ecosystems cover one of the world’s major areas of biodiversity.

Forests in the region are important as:

- a source of food, medicines, materials and shelter for over 20 million people
- commercial economic value
- habitat for a unique array of flora and fauna, including endangered species

- a sink and source of carbon dioxide, the most important gas implicated in global warming,
- watershed functions
- spiritual/cultural

Deforestation of tropical forests poses a threat to biodiversity and to forest conservation efforts. The rates of deforestation rates in central Africa are poorly documented, and vary considerably by location and across the region. The development of meaningful national and regional forest or landscape management plans is hindered by the lack of good data. Generally rates are about ~0.6%/year. Reforestation does not compensate for forest losses.

More than 50% of the forests outside protected areas (80% in Cameroon) have been allocated for logging concessions. Approximately 14% of the forest has been converted to agriculture, most of which is small-scale cultivation by individual households. About two thirds of the forest qualifies as “low access” forest regions – roadless areas that are 1,000 square km or more in size (Minnemeyer et al, 2002). Protected areas cover 6% of the land, and represent the major forest types within the region. About 8% of the “low access” forest regions are within parks and reserves. Logging – both legal and illegal- is rampant, with logging roads criss-crossing the landscape.

Biodiversity in the Central African Region

The tropical forests of central Africa are home to over 400 species of mammals, around 1,000 species of birds, and more than 10,000 species of plants, about 3,000 of which are endemic to the region. Many of these are threatened. For example, in the Democratic Republic of Congo alone there are 171 threatened species of animals.

Threats To Biodiversity and Tropical Forests in the Central African Region

Some of the many threats to tropical forests and biodiversity in the central African region include:

- The human population is increasing at 2-3% per year
- The demand for agricultural land is increasing, with more than 90% of households in Central Africa involved in agriculture.
- Forest habitat loss poses a major threat to many species that depend on intact forest biomes.
- Extensive conversion of the forest to non-forest land cover results in changes in soil fertility and rainfall patterns that can affect human livelihoods and ecosystem productivity, not only regionally in the basin, but also throughout the continent through altered water cycles and climate change, and even globally.
- Poor forest management practices
- Corrupt practices and illegal logging
- Changing agricultural systems and poor understanding of agricultural systems suitable for this area
- Inadequate monitoring systems to record the loss of forests and biodiversity and to influence decision-making
- Protected areas not adequately protecting key tropical forests and biodiversity areas
- Unsustainable harvest of bushmeat is decimating wildlife populations
- Poor environmental governance
- Lack of awareness of economic alternatives for local communities.
- Lack of stakeholder involvement at all levels
- Corruption and instituting transparent systems
- Transboundary nature of environmental issues
- Weak cooperation among central African countries in protecting tropical forests and conserving biodiversity.
- Urbanization

Role of USAID/CARPE in protecting tropical forests and conserving biodiversity

Under the new strategy, USAID will support actions aimed at conserving biodiversity and promoting conservation and sustainable management of tropical forests, including those designed to:

- promote a transboundary approach to protected area planning and management in select landscapes
- improve research and monitoring systems to better catalogue, understand and protect tropical forests and biodiversity in the region
- strengthen policies and laws to provide sound environmental governance
- improve community participation in natural resources management, through community-based natural resources management programs (CBNRM) and explore alternative livelihood opportunities for rural communities
- Encourage dialogue and private-public-community partnerships
- Build local capacity to carry out reduced impact logging

- Develop, test and share improved practices in the region

Some of the threats to tropical forests and biodiversity in central Africa will not likely be addressed by CARPE. These include:

- The need to recognize the Congo Basin as a unique watershed that requires integrated management cross-sectorally and at many levels. The landscape approach proposed in CARPE 2 addresses specific landscapes, but does not address the area as a holistic watershed. Establishing a functioning transboundary water basin commission, improving regional cooperation, harmonizing policies and laws and promoting integrated management are all important to the watershed approach.
- Coastal management: further analysis would be needed to understand and mitigate threats to coastal biodiversity

2. Background

This document constitutes an Environmental Analysis for the **Central African Regional Program for the Environment (CARPE)** Strategic Plan. Together with the Conflict Prevention Analysis and the Gender Analysis, it provides a basis for the priority setting and strategic planning process by USAID, CARPE management, and partners in developing the new strategic plan. Part 1 presents an overview of environmental assets, threats and opportunities within the region, considers the factors related to the overall environmental sustainability (FAA 117) and addresses the Agency strategic planning guidelines and requirements (ADS). Part 2 addresses the requirements set forth in the Foreign Assistance Act, Sections 118 and 119, and specifically addresses biodiversity and tropical forestry within the region.

CARPE is a regional USAID initiative, which began in 1995. Currently it is in the second phase (Phase II) of what was envisioned as a 20 year program. CARPE was designed as a mechanism to promote the conservation and management of the Congo Basin rainforest - the second largest tract of tropical rainforest remaining in the world. The goal of CARPE is to reduce the rate of deforestation of the tropical forests in the Congo Basin, in order to conserve the biological diversity contained in those forests and, in the long-run, to avert potentially negative changes in global and regional climate. The activity started out with four Central African countries, and later expanded to nine (Box 1).

Since its start-up in 1995, CARPE has been managed in Washington, by the Global Bureau and the Africa Bureau/Sustainable Development (AFR/SD) under Strategic Objective 17, and implemented through cooperative agreements with non-governmental organizations (NGOs) and through interagency agreements. The first phase of CARPE focussed on gathering knowledge of Central Africa's forests and biodiversity, and building human and institutional capacity. The new strategic plan will focus on implementation, and will apply this knowledge towards creating sustainable natural resources systems.

In December 2001, the USAID Administrator directed that CARPE move from Washington to the field. Kinshasa, in the Democratic of Congo (USAID/DRC), was approved in May 2002 as the most appropriate "base" for CARPE, and actions are currently underway to facilitate that move, anticipated in early 2003. The program will retain its regional focus and will be housed at USAID Kinshasa as a regional program, under a new Africa Bureau regional Strategic Plan. It is envisioned that CARPE will be a discreet regional "unit" based in, and administratively managed by, the USAID/Kinshasa Mission.

The **World Summit on Sustainable Development (WSSD)**, held in Johannesburg in August 2002, reaffirmed sustainable development as a central element of the international agenda and gave new impetus to global action to fight poverty and protect the environment. The understanding of sustainable development was strengthened as a result of the Summit, particularly the important linkages between poverty, the environment and the use of natural resources. Governments agreed to and reaffirmed a wide range of concrete commitments and targets for action to achieve more effective implementation of sustainable development objectives.

The **Congo Basin Forest Partnership (CBFP)**, one of the initiatives announced at WSSD, is very closely linked to CARPE. This initiative is discussed in Section 7.3.

3. Purpose and Approach

3.1 USAID Requirements

The Environmental Analysis is a technical analysis required by USAID for the development of strategic plans (ADS 201.3.4.11b). It is mandatory for bilateral programs, and deemed optional for global or regional strategies that cover multiple countries (Automated Directives Systems (ADS) 201.3.4.11b). Since the CARPE Strategic Plan is **regional**, covering nine countries within central Africa, there is no requirement to complete the environmental analysis, but it is desirable to undertake it in this case, since almost 50% of the land area of the Congo Basin is covered by tropical forests, biodiversity is high, and the forests of this region play a global role in climate regulation. Under the Foreign Assistance Act, Sections 118 and 119, all country level Operating Unit Strategic Plans must include a summary of their analyses of the following issues: (1) the actions necessary to conserve biological diversity, and (2) the extent to which the actions proposed meet the needs thus identified. Additionally, for a **country** within the tropics, the Strategic Plan must also include (1) a summary of their analyses of the actions necessary to achieve conservation and sustainable management of tropical forests and (2) the extent to which the actions proposed meet the needs thus identified. The analysis will be conducted from a regional viewpoint.

3.2 Purpose of the Environmental Analysis

The purpose of this environmental analysis is to:

- Provide an overall environmental “snapshot” of the region covered by CARPE
- Briefly describe environmental assets and resources within the region addressed by CARPE
- Analyze key environmental threats and opportunities
- Identify opportunities for addressing environmental threats in the CARPE program
- Address tropical forestry and biodiversity issues and meet the requirements of FAA 118/119
- Describe how the new USAID strategic plan will meet the needs identified.

3.3 Approach

It must be noted that CARPE itself is an activity that seeks to reduce biodiversity loss, reduce deforestation, and promote sustainable forest management. Thus CARPE inherently addresses many of the same threats and opportunities that are covered in this environmental analysis.

This report is, of necessity, quite broad, because of the immensity of the region involved, and does not go into the level of detail that a country level analysis would undertake. Rather it seeks to provide a “snapshot” of the environmental situation at present, to briefly identify key environmental threats, opportunities, and issues within the region, including those related to tropical forests and to biodiversity, and to identify how USAID will incorporate environmental considerations into all CARPE activities. The analysis is carried out through a literature review and by gathering input from implementing partners, either through individual meetings and/or through the CARPE Strategic Objective Team (CARPESOT) meeting held in October 2002. It draws heavily on a number of key documents prepared under CARPE, including:

- “CARPE Phases I and Ib Evaluation—2001: Main Report”, The Environment and Development Group 2001
- “Taking Action to Manage and Conserve Forest Resources in the Congo Basin: Congo Basin Information Series”, Laurent Somé, David Wilkie, Judy Oglethorpe, Editors, 2001
- “Annex E: Programmatic Environmental Assessment and Primary Tropical Forest Environmental Assessment”, CARPE Project Paper 698-0548, September 1995

It also draws on the experience of other bilateral and regional Missions in preparing environmental analyses, namely:

- “USAID/REDSO/ESA Strategy: Environmental Threats and Opportunities Assessment with Special Focus on Biological Diversity and Tropical Forestry”, Daniel Moore and Walter Knausenberger, May 2000

- “Nigeria Environmental Analysis: Final Report” Associates in Rural Development, 2002
- “Environmental Threats and Opportunities Assessment for Uganda” Chemonics International and Makerere University Institute of Environment and Natural Resources, 2001

It consults various USAID documents for guidance and requirements, especially:

- ADS chapters 201 and 204; FAA Sections 117, 118 and 119
- “Summary Description of FAA sections 118(e) and 119(d) Requirements for Preparing Strategic Plans”: Tropical forestry guidance cable <http://www.usaid.gov/pubs/ads/200/200mao.pdf>
- Biodiversity Conservation Program Design and Management: A Guide for USAID Staff, USAID Office of Environment and Natural Resources, Bureau of Economic Growth, Agriculture and Trade, June 2002
- “Consideration of Biological Diversity and Tropical Forestry in the Context of Country Program Strategy Planning in the Bureau for Africa: Review and Guidelines”, Sandra Russo, November 1994

Finally, this analysis draws upon the experience and publications of other donors and implementing agencies active in Central Africa, and incorporates some of their findings in this analysis. Certain reports, such as the IUCN/UNDP/GEF “Regional Strategic Action Plan for the Environmental and Biodiversity Resources of the Congo Basin Ecosystems” (Ndinga et al 2000) are very relevant, and have been consulted in detail. Other resources such as websites of international organizations, and the CARPE website (<http://carpe.umd.edu>) were important sources of data.

4. The Regional Context

This section provides an overview and environmental “snapshot” of the region where CARPE operates.

4.1 The Region

CARPE activities are underway in the central African region, within the countries of Burundi, Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda, and Sao Tome and Principe. These countries make up the core of the Congo Basin, an extremely important watershed of local, regional and global significance, and the world's second largest contiguous lowland tropical forest. CARPE countries extend beyond the watershed boundaries to include the bulk of the humid tropical forest type within the region. Figure 1 (Annex 1) shows the political boundaries of the countries involved in CARPE.

CARPE Countries

- Burundi
- Cameroon
- Central African Republic
- Democratic Republic of Congo
- Equatorial Guinea
- Gabon
- Republic of Congo
- Rwanda
- Sao Tome & Principe

4.2 Biophysical Aspects of the Central African Region

4.2.1 General

The area covered by CARPE sits astride the equator, extending approximately 14 degrees both north and south. Dense forests extend over 1.9 million km² of Central Africa, covering almost 50% of the landmass. Figure 2 (Annex 1) shows the Congo Basin rivers and lakes.

The region is largely lowland, framed to the east by the high volcanic mountains in DRC and Rwanda. High central African mountains dominate the landscape, including Mount Cameroon (4070 m), Pic Basile (3008 m), the Kalisimbi (4507 m), Muhabura (4127 m), Sabyinyo (3674 m), Bisoke (3711), Gahinga (3473 m), Nyamulagira, Mikeno (4000 m), Nyiragongo (3470 m) and the Rwenzoris (5109 m). Figure 3 shows the main ecotypes in central Africa, and Figure 4 is a satellite derived land cover map of the region (Annex 1).

4.2.2 The Forests of the Congo Basin

The Congo Basin contains the second largest continuous tropical rainforest in the world. Dense forests extend over 1.9 million km² of Central Africa, covering almost 50% of the landmass. Central Africa's forest ecosystems cover one of the world's major areas of biodiversity. Characteristics of forests in central Africa are shown in Annex 1. Tables 1 and 2 show forest data for some of the CARPE countries. Forested areas and the level of cover vary considerably from one country to another, as does the level of deforestation and the percentage of forest that is protected in each country. Figures 5-7 show the roads and low access forest tracts in central Africa. An overview of the tropical forests in the Congo Basin, by country, is presented in Annex 2.

Table 1: Forests in the Congo Basin (adapted from *FAO Africa Country profiles , Global Forest Resource Assessment 2000*, http://www.fao.org/forestry/fo/country/nav_africa.jsp?lang_id=1, accessed October 4, 2002)

Country	Percent of land with forest cover	Percent of other wooded land	Percent of forests in protected areas
Burundi	12	38	12
Cameroon	40	30	6
CAR	48	26	20
Congo	57	16	4
Rwanda	10	28	50
SaoTome and Principe	75	-	0

Table 2: Forest Canopy Data in Central Africa (1996)

(adapted from *World Resources Institute People and Ecosystems 2000-2001 Institute (secondary data from Bryant, D., D. Neilsen and L. Tangley 1997: "The Land Frontier Forests: Ecosystems and Economies on the Edge")*)

Country	Land Area (000 ha)	Original Forest as a Percent of Of Land Area	Current Forest as Percent of Original Forest
Burundi	2568	46.3	3.5
Cameroon	46540	80.4	42.4
CAR	62298	51.8	15.9
Congo	34150	100.0	67.8
DRC	226705	82.5	60.4
Gabon	25767	100.0	90.4
Guinea	24572	75.6	5.0
Rwanda	2467	36.1	16.1
Sao Tome & Principe	96	32.5	70.6

4.2.3 Major Lakes, Rivers and Watersheds

The powerful Congo River, second in size only to the Amazon, flows through this region and forms the Congo River Basin – a key watershed and transboundary area with global significance. The Congo is second only to the Amazon River in size. Important transboundary river systems include the Ntem (Cameroon, Gabon, Equatorial Guinea), the Sangha (CAR, Congo, Cameroon) the Ngoko (Cameroon, Congo), the Oubangui (DRC, RCA) and the Tanganyika (Burundi, DRC). Figure 2 (Annex 1) shows the Major Rivers and Lakes of the Central African Region. Figure 3 (Annex 1) shows the major roads of the region.

4.2.4 Biodiversity

Biological diversity, or biodiversity, is the variety and variability of life, including the diversity of genes within species, the diversity of species, the diversity of communities and ecosystems, and the diversity of ecological processes that both support and result from this diversity (USAID, 2002). Biodiversity is the foundation for the Earth's essential goods and services. It provides both material and nonmaterial values and benefits. Biodiversity conservation is important for sustainable development because biodiversity is the natural biological wealth that supports human life and well-being. Biodiversity is being lost at an unprecedented rate. Human activities are driving many species to extinction and damaging or converting natural habitats around the world.

The tropical forests of the world provide major ecological services to humans as watersheds and carbon sinks that buffer regional and global climates. These forests also contain a diversity of species far out of proportion to the area they occupy, an estimated 50 to 90 percent of the world's land species. Some scientists believe that 25% of the world's plant species, and higher proportions of vertebrate and invertebrate species, could die out over the next three decades unless rainforest deforestation rates are slowed immediately. This loss of species will eliminate genetic and biochemical information that could lead to advances in medicine, agriculture, and industrial technology.

Africa's biological resources -- its crops, livestock, fisheries and forests -- are among its most important resources. They yield food, fiber, and fuel that the population needs, and provide the exports and jobs that are the bedrock for broad-based, sustainable growth. The loss of biodiversity would clearly threaten Africa's long-term development. For those living in the region, the most fundamental value of biodiversity is its integral role in the vitality and resiliency of the ecosystem upon which their livelihood depends.

The rainforests of central Africa form one of the planet's last great tropical wilderness areas. This was the area from which much of Africa's existing biological diversity originated. Of an estimated 8,000 species of plants, perhaps 80 percent are endemic to the region. It is also the richest area for fauna in terms of numbers and level of endemism, with 655 species of birds (36 percent of which are endemic) and 58 species of mammals (45 percent of which are endemic). Of these, 16 species of birds and 23 species of mammals are considered threatened or endangered. The region supports the world's largest populations of lowland gorillas, chimpanzees, bonobos (pygmy chimpanzees), and forest elephants.

The tropical forests of central Africa are home to over 400 species of mammals, around 1,000 species of birds, and more than 10,000 species of plants, about 3,000 of which are endemic to the region. Table 3 shows numbers of threatened species in central African countries, by country.

Table 3: Number of Threatened Species in Central African Countries (from IUCN 2000 Red List of Threatened Species)

COUNTRY	Mammals	Birds	Reptiles	Amphi-Bians	Fishes	Mollusks	Other Inverts	Plants	Total
Burundi	5	7	0	0	0	0	3	2	17
Cameroon	37	15	1	1	27	1	3	155	240
Central African Republic	12	3	1	0	0	0	0	10	26
Democratic Republic of Congo	40	28	2	0	1	41	4	55	171
Equatorial Guinea	15	5	2	1	0	0	2	23	48
Gabon	15	5	1	0	1	0	1	71	94
Republic of Congo	12	3	1	0	1	1	0	33	51
Rwanda	8	9	0	0	0	0	2	3	22
Sao Tome & Principe	3	9	1	0	0	1	1	27	42

4.3 Socioeconomic Considerations in the Central African Region

4.3.1 Population Growth and Urbanization

The populations of the countries within the Central African region vary considerably (Table 4). The largest population by far, is that of the Democratic Republic of Congo (52.5 million), while the islands of Sao Tome and Principe have the lowest numbers of people (140,000). All of the countries in the region show a trend towards urbanization – all had negative annual population growth rates in rural areas during the period 1995-2000, while annual rates of change in urban areas for the same period ranged from a high of 3.51% in Burundi to a low of 1.03% in Central African Republic. (UNDP 2002). Most of the population growth in these countries over the next 10-20 years is expected to occur in urban areas. This presents special economic/ environmental/natural resources management challenges.

Table 4: Population, Urbanization and Population Densities in Central African Countries

Country	Population (in thousands)* mid-year 2001	Percentage Urban 2001	Average annual rate of change (%) Urban Population 1995-2000	Average annual rate of change (%) Rural Population 1995-2000	Population density (per sq. km) Year 2000**
Burundi	6 502	9.3	3.51	-0.31	228
Cameroon	15 203	49.7	1.79	-1.57	31
Central African Republic	3 782	41.7	1.03	-0.69	6
Congo, Republic of	3 110	66.1	1.34	-2.31	9
Democratic Republic Congo	52 522	30.7	1.06	-0.44	22
Equatorial Guinea	470	49.3	2.67	-2.20	33
Gabon	1 262	82.3	1.40	-5.18	5
Rwanda	7 949	6.3	1.66	-0.10	289
Sao Tome and Principe	140	47.7	1.69	-1.39	

* from “World Urbanization Prospects: The 2001 Revision: Data Tables and Highlights” United National Population Division, p 21, 97, 107, March 2002

**from “World Population Prospects Population Database” <http://esa.un.org/unpp/> accessed 10/7/02; Source: Population Division of the Department of Economic and Social Affairs for the United Nations Secretariat “Population Prospects: The 2000 Revision” and “World Urbanization Prospects: the 2001 Revision”

4.3.2 Poverty

The region is characterized by poverty – and the general trend is alarming. Countries within the region are relatively poorer now than they were ten years ago when CARPE was first conceived (Environment and Development Group 2001). The link between increasing poverty and environmental degradation is strong. Poverty forces local people to take advantage of any means available to put food on the table – and has played a role in urbanization, environmental degradation, deforestation, in the conversion of forest land to agricultural land, and in the drastic reduction of wildlife in some areas.

4.3.3 Gender

A Gender Analysis (Diamond 2002) was conducted as part of the strategic planning process for CARPE Phase II. It recommends that “Gender should be considered as a cross-cutting theme for CARPE partners.” Potential opportunities for gender mainstreaming in Phase II were suggested by CARPE partners. Gender mainstreaming means understanding the situation of both men and women and tailoring strategies to address these realities. Deforestation in Central Africa results from complex livelihood-related behaviors practiced by many actors, including both women and men, urban and rural residents, commercial loggers and subsistence farmers, all from various ethnic groups. The proposed activities for the next phase of CARPE could have a negative impact on women and vulnerable groups, unless pro-

active steps are taken by program implementers to understand gender-related resource use, incentives, constraints and opportunities.

Without attention to gender issues, alternative livelihood and income-generation activities may be dominated by men if they are profitable. Working deliberately with groups of women producers or traders may increase women's control over the income that they earn. To successfully modify bushmeat hunting and trading practices, CARPE partners need to better understand and apply information related to the gender division of labor and the intra-household use of income, for forest villagers, forest foragers and urban/town traders. When developing conservation-linked livelihood activities, CARPE partners should be sure to pay special attention to the more vulnerable segments of communities, including women.

4.3.4 Corruption

It is surmised that corruption strongly and adversely affects the environment in central Africa. As can be expected, however, documentation and data to support this remain scarce. Processes governing the utilization, sale and exchange of natural resources are often not very transparent in this region. Even when procedures have been developed, they may be violated.

Anecdotal evidence suggests that at least a portion of proceeds from "concessions" or "sales" of precious resources – including precious metals, diamonds, oil, and timber – may end up in somebody's pocket, rather than in the government coffers. Awards for timber or other concessions may be made under questionable circumstances, and accusations have been made that private sector may bribe politicians or other decision-makers to gain access to natural resources. Economic decisions regarding resource use are often made in the absence of sound data and without investigating or understanding possible environmental consequences. The result is that many resources are being unsustainably exploited, and the wealth generated from those exchanges may be benefiting corrupt individuals rather than the citizens.

Both World Bank and Transparency International (TI) seek to investigate the level of corruption in nations. Transparency International has developed a corruption index, and has comparatively rated 90 countries according to their relative levels of corruption. Of the 9 CARPE countries, only Cameroon is rated by TI. Perceptions of the degree of corruption as seen by business people, academics and risk analysts range between 10 (highly clean) and 0 (highly corrupt), Cameroon received a score of 3, and ranked in fourth place among the most corrupt countries.

4.3.5 Conflict

The central African region has been characterized by instability and conflict. The quality of governance has suffered tremendously, and there are areas where there is very little governmental control at all. It is important to note here that conflict has very important environmental consequences. More than a third of countries in sub-Saharan Africa have been affected by armed conflict since 1990. The Congo Basin has been especially hard hit: the Central African Republic (CAR), the Democratic Republic of Congo (DRC), the Republic of Congo, and Rwanda, along with the neighboring countries of Burundi, Uganda and Angola, all suffered from civil and military conflicts (A. Plumptre and R. Hamm, 2001, CARPE Congo Basin Information Series, CARPE Issue Brief #22 "Conservation in a Region of Civil Instability: The Need to be Present and to Assist").

A Conflict Vulnerability Analysis was prepared as one of three analyses for the proposed CARPE Strategic Plan (Byers 2002). It notes that CARPE partners have a lot of experience operating in the face of conflict, and have produced some of the clearest lessons learned anywhere in the world about how to support conservation in areas of conflict. By maintaining and building on the approaches and managerial structures that have allowed CARPE partners to work in this dynamic, conflict-prone region, CARPE II will have the flexibility and resilience to continue to succeed. CARPE can use the growing understanding of conflict to design its strategy and manage its activities in ways that do not exacerbate existing tensions in the region, and even to contribute to peace by addressing some of the root causes of conflict.

4.3.6 Economic Activities

Small scale and subsistence agriculture is practiced by a majority of the people in the central African region. Industrial-scale agriculture is found in the coastal zones of southwestern Cameroon, and, prior to the war, was carried out in the northern and eastern regions of the Democratic Republic of Congo.

In Central Africa the lives of the people are intertwined with and dependent upon the forests. Over 20 million people in the Congo Basin depend on forest resources for their survival. Local people utilize the biodiversity of the forests to provide food, shelter, economic gain and a host of other supplies and services. Important forest values include:

- economic value: commercial, timber, non-timber forest products, bushmeat, and agricultural nutrients),
- ecological value: plant and animal biodiversity, ecosystem services (climate, watershed, soil stability, habitat, etc)
- livelihood and subsistence value: 80% of forest residents depend directly on forest resource use for their livelihoods
- cultural values: an important role in many forest societies' belief systems

The logging sector in Central Africa is a vital source of national revenue, one of the largest commercial employers, and a significant contributor to environmental degradation. National timber trade figures (volumes produced, exported, and imported) and information about employment and jobs created was not easy to access. Information regarding areas exploited, timber volumes harvested, and revenues which companies are involved generated is often unreliable or not readily available. Logging is carried out primarily through government concessions with foreign logging companies, mainly European. Value is rarely added in the region – most timber is exported in raw or minimally processed form.

The consumption of “Bushmeat” -- meat of wild mammals, including primates -- is popular in the region, and commercial hunters supply urban markets. The illegal bushmeat trade is contributing to the demise of wildlife in many areas. This is addressed in detail in Part 2.

Many of the central African countries are richly endowed with petroleum and minerals. The Democratic Republic of the Congo (DRC), for example, has cobalt, copper, cadmium, petroleum, industrial and gem diamonds, gold, silver, zinc, manganese, tin, germanium, uranium, radium, bauxite, iron ore, and coal among its mineral resources. (CIA World Factbook 2002). The central African Copperbelt which extends from Angola through the DRC into Zambia, passes through the Katanga Province in DRC, and contains about a third of the world's cobalt reserves and over 10% of the world's copper reserves. Activities associated with mining and petroleum extraction often have serious environmental implications.

5. Regional Legislative and Policy Framework

5.1 International agreements

All of the nine countries within the central African region are signatory to one or more international conventions. These provide an international framework for addressing issues of regional and global importance.

5.2 Regional Policies and Agreements: A Foundation for Transboundary Cooperation

The countries comprising the Congo Basin have not yet developed a regional legal or policy framework. For example, there is no overall framework like that developed by the Southern African Development Community (SADC), which, with the approval of southern African member states, established regional policies or protocols on wildlife, water, tourism and environment for the region.

However, a number of regional, inter-governmental initiatives in forest conservation and management are being instituted, in many cases supported by donors, NGOs and international organizations. The main regional agreements to date are:

- **Yaounde Agreement:** a 12-point resolution signed in Yaounde Cameroon in March 1999 by six African Heads of States on the conservation and sustainable management of the forests of the Congo Basin. The six

countries are: Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea and Gabon. Democratic Republic of Congo later declared its adherence to the principles of the Yaounde Declaration. Each country has pledged to protect a minimum of 10% of their forests.

- **The Sanga Tri-National Accord:** the first agreement of its kind in central Africa, the accord commits three countries - Cameroon, Republic of Congo and the Central African Republic – to harmonizing their forestry policies and to working together on a range of issues to protect the huge diversity of fauna including forest elephants, chimpanzees and gorillas. The agreement, signed in December 2000 lays the foundation for a network of protected areas, including three national parks – Lobeke in Cameroon, Dzanga-Ndoki in the Central African Republic and the Nouabala-Ndoki in the Republic of Congo, as well as production forests and agricultural zones surrounding each park.
- **Strategic Action Plan for the Environment : The “Regional Strategic Action Plan for the environmental and biodiversity resources of the Congo Basin ecosystem”** is a framework of analysis and of priority action areas related to biodiversity in the Congo Basin. It was drawn up on consultative and participatory basis, as a contribution toward the implementation of the Convention on Biodiversity. Funded by GEF-UNDP, with technical assistance from IUCN, the plan was approved during the third session of the Conference on Central African Moist Forest Ecosystems (CEFDHAC) in June 2000.
- **The Virungas Tripartite Agreement (Declaration of the Tripartite Meeting between the Institut Congolais pour la Conservation de la Nature (ICCN), the Office Rwandais de Tourisme et des Parcs Nationaux (ORTPN) and Uganda Wildlife Authority (UWA) :** Park authorities from three countries signed a tripartite agreement in the Virungas in October 2001, committing to a phased implementation to create a transfrontier protected area, beginning with the "Virunga Transfrontier Park." In the Virungas. The overall vision of the collaboration is "Transfrontier collaboration for the conservation of the ecosystems of the Central Albertine Rift for peace and sustainable development." The International Gorilla Conservation Program (IGCP) will facilitate this effort. Their ranger-based monitoring system, which is now used regionally, enables regional analysis and tracking of gorillas and threats to them, with direct feedback to park management.

Transboundary considerations will become increasingly important over time in Central Africa, in light of the fact that the key natural resources in the region are transboundary resources. Agreements such as those noted above are important first steps in transboundary collaboration. Water – the Congo River and many other lakes and rivers, the wildlife, and the dense humid tropical forests are all transboundary resources. One group of endangered groups of mountain gorillas for example, “the **Nyakagezi** group”, roams regularly among three countries. Just as countries within the region are facing critical decisions regarding environment, land use, and natural resources management from a national perspective, the region itself must develop mechanisms for crossborder collaboration. **Increased cooperation among the central African countries in natural resources management is crucial to the protection of biodiversity and tropical forests in the region.**

5.3 National Policies/Legislation

On a national level, environmental policies, especially those relating to forest management, have been evolving under pressure from civil society and the regional/international community. These policy changes are trying to enshrine principles of relatively sustainable forest management; and to extract the full economic value of the forest resources, for a range of stakeholders.

Several countries within the region have developed new policies and laws to protect their natural resources. Since the Rio conference in 1992, they have undertaken significant efforts in policy reform with special emphasis on the forest. Brunner et al (2001) notes that several countries in Central Africa have introduced forest policies, supported by World Bank, aimed at increasing efficiency in logging and processing operations. He suggests that, in the absence of effective enforcement, efficiency incentives may, paradoxically, encourage illegal logging and accelerate forest degradation. Policies aimed at concentrating timber production and simplifying forest taxation can help to reduce the need for costly enforcement and government oversight. (Brunner et al 2001).

While some reports suggest that the policy reforms have sparked a change in the attitude and behavior of logging companies from conventional practices to more sustainable logging, the indicators of this change have yet to be compiled.

The legal framework to provide secure tenure and natural resource rights to local citizens is deficient in most central African countries. To encourage community based natural resources management (CBNRM), and to provide the secure basis for natural resources based enterprises (NRBEs) the frameworks will need to be strengthened.

Other legal efforts in the region are directed at the following areas: greater protection of the ecosystem, enhancing the capability of national entities to participate in forestry activities, increasing the target area of state forest, classification of national forests, protection of plant genetic resources, and enhancing people's participation in forest management.

Although good laws form a basis for environmental governance, they are useless unless there is a system of operationalizing and enforcing them. Guidelines to describe on-the-ground implementation are often lacking, and laws are not enforced. Many individuals, private enterprises and institutions have been breaking the laws with impunity for years. There is little enforcement, and corruption is rife. Official corruption has tended to ignore laws and senior positions within governmental systems grant leverage for flouting of the law. This cycle will be hard to break, but is crucial to improving environmental governance and natural resources management.

In Gabon for example, the Forestry Law (1/82), passed in 1982, lays out the general legal framework regulating logging activity as well as other natural resources uses (e.g., hunting). It introduces logging zones, logging permits, size of logging concessions and other concepts. Poor enforcement and implementation of the code have hampered natural resources management in Gabon. In Cameroon, which introduced a new forest law in 1994, policy implementation has been very problematic, due to the lack of political will and deficiencies in operationalizing policy.

5.4 Regional Institutions/Regional Working Groups

5.4.1 COMIFAC (Conférence des ministres des forêts de l'Afrique Centrale)

COMIFAC is a ministerial level group from among the central African countries that collaborates on forestry issues. The Secretariat is located in Yaoundé. The Yaoundé Declaration was made in March 1999 by the heads of state of six Central African countries - Cameroon, Gabon, Equatorial Guinea, Central African Republic, Republic of Congo and Tchad - in which they declared their commitment to biodiversity conservation and the sustainable management of forest ecosystems in Central Africa. The Declaration included twelve strategic resolutions for action on various aspects of biodiversity conservation and forest management and assigned the Ministers in Charge of Forests to coordinate and ensure the implementation of the resolutions.

During its second meeting, COMIFAC established a Plan of Convergence, which is a framework of priority actions and programs identified by participating countries at the national and sub-regional levels to advance sustainable forest management. It also approved a Priority Plan of Action, which comprises those actions in the Plan of Convergence whose implementation in the period 2003-2005 is urgent. Excluding the Republic of Equatorial Guinea, participating countries agreed to contribute funds to implement the priority plan. The ministers also appealed to partners in the international community to finance the management of existing protected areas, as well as alternative socio-economic and cultural activities for the benefit of local communities.

5.4.2 CEFDHAC

Conference on Central African Moist Forest Ecosystems (Conférence sur les Ecosystèmes de Forêts Denses et Humides d'Afrique Centrale) (CEFDHAC) – a group of government representatives, donors, conservation organizations and other stakeholders, that has met at least three times to develop and agree upon guidelines and strategic action plans for guiding the management of environmental and biodiversity resources in the Congo Basin.

A regional Conference on Central African Moist Forest Ecosystems (CEFDHAC) was held in Brazzaville in May 1996, that brought together many of the key players and stakeholders to discuss the conservation and sustainable use of biodiversity in countries of the Congo Basin. Subsequently, with funding from GEF-UNDP and technical support from IUCN, a Strategic Action Plan (SAP) (Ndinge, et al 2000) was developed to guide the process towards developing common objectives agreeable to all parties involved. The SAP focuses on improving the management of shared and transboundary biodiversity resources, and was approved by the Third CEFPHAC, held June 5-7, 2000 in Bujumbura. It was later endorsed

by stakeholders at the Forestry Experts Meeting in Yaounde in September 2000. CARPE was involved in the meetings, and CARPE activities form an important part of the forestry activities proposed in that plan.

CARPE has been involved in fostering the promotion of intergovernmental collaboration, through support to CEFDHAC. CEFDHAC was a spontaneous initiative conceived in the region, and totally managed by it. The evaluation (EDG 2002) questioned CARPE support to this organization to the exclusion of others, and suggested that CARPE needs to re-examine other options, bearing in mind the competing forces of other regional inter-governmental mechanisms. These include ATO (the African Timber Organization), the Yaoundé summit process, APIE, the ECOFAC Comité Technique de Suivi, RAPAC and more.

5.4.3 ATO

The African Timber Organization (ATO), founded in 1976, enables members to share information on forestry matters and to coordinate prices of wood and wood products. The organization investigates and seeks to harmonize commercial policies in the region, and undertakes training and industrial research. Member countries include: Angola, Cameroon, Central African Republic, Congo, Cote d' Ivoire, Equatorial Guinea, Gabon, Ghana, Liberia, Sao Tome and Principe, Tanzania and Zaire.

5.4.4 FORNESSA

The Forestry Research Network for Sub-Saharan Africa (FORNESSA) was established through the Research Component of the EC-FAO Partnership project "Sustainable Forest Management Program in African ACP Countries".

5.4.5 Other

Technical and institutional capacity to monitor and manage the natural resources of the region is weak. CARPE and other donor programs are working with local, national and regional institutions to build their capacity.

6. Political Considerations: Instability and Conflict

Negative impacts of armed conflict on the environment are a result of human population displacement, lawlessness, lack of tenure security, increased incentives to mine or extract natural resources, and increased dependence of people on wild resources when other livelihoods, such as agriculture, become impossible. Competition over dwindling natural resources exacerbates social and political strife. Ways to mitigate these impacts include preparedness planning, making information on biodiversity readily available to relief agencies, trying to maintain a presence in protected areas throughout the conflict, collaborating with other sectors, and being prepared to start activities again as soon as possible.

7. Donor Activities in Central Africa

7.1 CARPE Implementing Partners

CARPE has been implemented through cooperative agreements with a number of NGO partners and through Agreements with various government agencies and universities. Each partner is committed to addressing the conservation and sustainable management of tropical forests, and each brings their particular strengths to bear while addressing the issues within the region. Main partners/implementing institutions include:

- World Wildlife Fund
- The Wildlife Conservation Society
- World Resources Institute
- World Learning
- World Conservation Union (IUCN)
- Conservation International
- African Wildlife Foundation
- US Department of Agriculture/US Forest Service,
- US Fish and Wildlife Service
- US Peace Corps

- NASA
- University of Virginia
- University of Maryland.

7.2 Other Donors/Organizations

Byers (1999, 2000) summarized the activities of other donors in the CARPE region. He noted the following key donors:

European Union:	ECOFAC program, in 6 countries Other forest conservation programs in 9 countries
World Bank:	Major forest sector reform and investment programs in 2 countries Other programs, such as the CEO's initiative, to encourage logging companies to get engaged in more sustainable practices
GEF:	Numerous projects and programs throughout the region
UNESCO:	Support to protected areas in Democratic Republic of Congo
DFID (UK):	Support to forest sector (several projects) in Cameroon
FFEM (France):	Several projects, in at least 3 countries
GTZ (Germany):	Projects in four countries
DGIS (Netherlands):	Projects in 2 countries
CIDA (Canada):	Projects in 3 countries
ITTO (Japan):	One project in northern Congo

In 2001, FAO launched a new initiative on the Conservation and Sustainable Management of Tropical Moist Forest Ecosystems in Central Africa in 2001. In addition, FAO implements the Forestry Outlook Study for Africa and established the Forestry Research Network for Sub-Saharan Africa (FORNESSA).

Currently there are at least 10 regional or sub-regional environment/conservation initiatives by various actors that target the Congo Basin in Central Africa. Numerous country-specific activities are taking place within individual countries in the region. Various donors are active in protected areas within the Congo Basin (Table 6, Byers 1999, 2000)

Table 6: Donor support to Protected Areas in the Congo Basin (adapted from Byers 2000)

Country	Name	Type	Size (ha)	IUCN Code	Organization/Donor
Cameroon	Banyang-Mbo	Wildlife Sanctuary		VI	WCS
	Dja	Faunal Reserve	526,000	IV	ECOFAC; IUCN
	Lobeke	Faunal Reserve	43,000	IV	WCS, WWF, GEF
	Kalamaloué	Nat'l Park	4,500	II	IUCN
	Korup	National Park	126,000	II ¹	WWF-Intl, DFID, GTZ, GEF, NCI
	Kilum/Ijim	Community Forest, not on WCMC list	11,500	VI	WWF-Intl, GEF
	Mt. Cameroon	Not on WCMC list			DFID, WWF, GTZ, GEF
	Mt. Kupe	Not on WCMC list			WWF, GEF
CAR	Waza	Nat'l Park	170,000	II	IUCN
	Bangassou	Not on WCMC list	Large		WWF, GEF
	Dzanga-Sangha	Special Reserve	336,000	VI	WWF, GTZ
	N'Gotto	Forest zone of several classifications not on WCMC list	200,000	VI	ECOFAC

Congo	Conkouati	Faunal Reserve	144,000	IV	IUCN
	Dimonika-Mayombe	Nature Reserve	136,000	IV	
	Nouabale-Ndoki	Nat'l Park	387,000	II	WCS, GTZ
	Odzala	Nat'l Park	127,000	II	ECOFAC
	Wildlands?				GEF

Note: ECOFAC is an EU-funded regional program active in six countries

Note: IUCN Categories are shown in Annex 3

7.3 The Congo Basin Forestry Partnership

The US Secretary of State, Colin Powell, announced the Congo Basin Forest Partnership at the World Summit for Sustainable Development (Annex 4) in September 2002. The partnership emphasizes the participation of international organizations and six Congo Basin countries, and underscores the importance of cooperation in promoting sustainable development in the Congo Basin (Annex 5). The goal of the Congo Basin Forest Partnership, and a priority for the US, is:

“to promote economic development, poverty alleviation, improved governance, and natural resource conservation through support for a network of national parks and protected areas, well managed forestry concessions, and assistance to communities who depend upon the conservation of the outstanding forest and wildlife resources of eleven key landscapes in six central African countries (Cameroon, Central African Republic, Democratic of Congo, Equatorial Guinea, Gabon and Republic of Congo)”

The Congo Basin Forest Partnership (CBFP) will:

- Provide people sustainable means of livelihood through well-managed forestry concessions, sustainable agriculture, and integrated ecotourism programs.
- Improve forest and natural resource governance through community-based management, combating illegal logging, and enforcing anti-poaching laws.
- Help countries develop a network of effectively managed national parks, protected areas, and corridors.

Partners (as of September 1, 2002) include:

- the governments the Congo Basin: Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, and Republic of Congo;
- the governments of the United States, the United Kingdom, Belgium, Canada, Japan, Germany, France, South Africa
- the European Commission;
- NGOs, including Conservation International, Wildlife Conservation Society, World Wildlife Fund, World Resources Institute, Forest Trends, and the Society of American Foresters;
- U.S. and international business, including the American Forest and Paper Association and the Association Technique Internationale des Bois Tropicaux-ATIBT;
- international organizations, including the World Bank and the International Tropical Timber Organization.

The US announced funding of \$53 million over four years (2002-2005) for the Partnership, including a \$36 million increase for Central African Regional Program for the Environment (CARPE). Additional funding will come from G8 nations, the EU, and the private sector. International conservation organizations plan to significantly increase the resources that they are already devoting to forest conservation and wildlife protection in the Congo Basin. Three International NGOs - Conservation International, the Wildlife Conservation Society and WWF have pledged to support the partnership and it is expected that several others will be involved.

8. Environmental Threats and Opportunities in Central Africa

The nine countries involved in CARPE represent a vast area. Environmental threats and opportunities vary considerably by country and by area. This section presents some of the many environmental challenges and issues facing the region. This is not meant to be a comprehensive list of threats and opportunities. Rather, it highlights some of the key areas.

8.1 Forestry

8.1.1 Poor Forest Management Practices

Threat: The roadbuilding, logging and silvicultural practices utilized in Central Africa are often environmentally damaging and unsustainable. Silvicultural practices often amount to nothing more than “high-grading” of the commercially desirable species in the forest, without adequately providing for natural regeneration or replanting. Logging methods employed are high impact, rather than incorporating newer low impact technologies and practices. Temporary roads, constructed for logging purposes, are not rehabilitated and are usually left as scars upon the landscape that not only serve as sources for water run off and erosion, but also serve as thoroughfares for illegal loggers and “bushmeat” hunters.

Opportunity: The CARPE countries are richly endowed with natural resources and their sustainable utilization – both consumptive and non-consumptive – can provide enduring economic returns, if wisely managed. Based on the first phase of CARPE, the opportunity exists to incorporate and institutionalize processes and practices that that will result in improved and sustainable management and utilization. Capacity building and sharing of successful practices within the region is key to their adoption. Reduced impact logging techniques, community-based natural resources management (CBNRM), alternative forest products, improved agriculture and private-public-community partnerships all hold promise for sustainable economic development.

Local people living in the forests have indigenous knowledge re forest product uses and management. This presents the opportunity – if empowered with incentives and resource rights, to take an active role in managing and benefiting from the resources in a sustainable fashion. Indeed, it is questionable whether any conservation efforts will be sustainable unless the communities are actively engaged.

8.1.2 Commercial Logging

Threats : Congo Basin forests are increasingly targeted as sources of revenue by governments and private logging operators, in response to global demand for tropical timber products, and partly due to declining oil revenues in some countries (Gabon, Congo and Cameroon. Commercial logging practices are causing forest degradation and loss of biodiversity. Preferred commercial species of trees are at risk, as these species are selectively removed from the forest without adequate regeneration. Corruption associated the concession award process is rampant. Illegal commercial logging is also widespread.

Opportunities: Logging is the most significant source of forest-based revenue throughout most of Central Africa. The opportunity exists to assist central African countries to get a better deal – through institutionalizing less detrimental logging practices, through increasing the value added to forest products in the region, and through ensuring sustainability. Logging companies, as the de facto managers of most of the remaining relatively intact blocks of forest outside of protected areas, have a key role to play in adopting logging practices that do not unnecessarily impact the quality and abundance of forest resources and wildlife. The building of private-public-community partnerships and the identification and dissemination of best practices, are key opportunities for CARPE. CARPE will continue the testing, documenting and sharing of the economic and environmental impacts of logging sector policy reforms in the region.

CARPE can also have an important role in facilitating the development of integrated management plans, based on sound data, and incorporating stakeholders involvement. Appropriate laws and policies must be in place to provide parameters and guide the process. Constructive dialogue is emerging between forest conservation agencies and logging companies, particularly those based in Europe. This collaboration can be furthered to promote a much broader approach to the management of the forest, and a converging vision about its future.

8.2 Biodiversity

8.2.1 Loss of Biodiversity

Threats: Africa's biological resources -- its crops, livestock, fisheries and forests -- are among its most important resources. They yield food, fiber, and fuel that the population needs, and provide the exports and jobs that are the foundation for broad-based, sustainable growth. The loss of biodiversity clearly threatens Africa's long-term development. For those living in the region, the most fundamental value of biodiversity is its integral role in the vitality and resiliency of the ecosystem upon which their livelihood depends. Some scientists believe that 25% of the world's plant species, and higher proportions of vertebrate and invertebrate species, could die out over the next three decades unless rainforest deforestation rates are slowed immediately. This loss of species will eliminate genetic and biochemical information that could lead to advances in medicine, agriculture, and industrial technology.

The on-going conflict in the region is an important threat to biodiversity. Parks and reserves can suffer significant conflict-related environmental impacts, because they are often located in remote, frontier areas and can provide refuge for rebels or a convenient location from which to stage cross-border attacks (Plumptre et al 2001). Wildlife present in these areas provides a ready supply of meat for rebels or small armies. Moreover, the frequency of illegal mining of gold and diamonds, hunting for ivory and bushmeat, felling of timber, and agricultural encroachment often increases when it becomes too dangerous for protected area staff to continue patrols.

Opportunities: The loss of biodiversity in the central African region can be slowed by integrating a number of activities. These include protecting critical areas of biodiversity, adopting more sustainable natural resources utilization practices, mitigating the effects of conflict, and strengthening and building capacity of the institutions responsible for governance and for management.

8.2.2 Inadequacy of Protected Areas

Threats: While protected areas cover approximately 6% of the forest, and represent the major forest types within the region, there is concern that key areas of biodiversity are not protected, and that those that are protected are being illegally exploited.

Byers (1999, 2000) noted that IUCN Category VI protected areas, "managed mainly for the sustainable use of natural ecosystems" do not appear to be viewed as part of a "biodiversity conservation landscape" in many Congo Basin countries. He also noted that donors are generally not working in small protected areas, that they tend to work in remote protected areas rather than protected areas that are closer to roads, population centers, and agricultural areas; and that they are less likely to work in IUCN category VI protected areas.

Opportunities: Increased understanding of the size, scope and type of protected areas needed in central Africa, coupled with the improved management of existing protected areas, will ensure that key landscapes and ecosystems are represented. Rather than treating national parks as isolated islands, new landscape models or watershed models should be adopted, which incorporate adjacent lands, people and their livelihoods.

8.2.3 Wildlife: The "Bushmeat Crisis"

Threats: The wildlife of the region is threatened by loss of habitat, increased human presence in formerly "wild" areas, and by hunting. The uncontrolled hunting and consumption of wild animals, including primates, is common throughout central Africa. Local people depend on wildlife as a source of food and income, while commercial hunters supply bushmeat to urban markets. The "bushmeat" trade is thriving, and wildlife harvest is increasing. The current levels of bushmeat harvest are not sustainable, and in central Africa, this practice has severely threatened the security of forest wildlife and led to vast reductions and in some cases, extermination. The "silent forest syndrome" refers to forests that are still standing, but are almost totally devoid of wildlife. Depletion of the fauna may further disrupt other natural functions within the forest, such as pollination, and seed and fruit distribution, which in turn affect the overall biodiversity, and can cause unpredictable changes to forest ecosystems.

There are also other implications associated with the hunting and trade of bushmeat. For example, HIV appears to have been transmitted to humans by wild chimpanzees, and there may be some connection with Ebola hemorrhagic fever as well.

Some populations of wild chimpanzees tolerate the closely related SIV virus with few apparent harmful effects, and medical researchers also are concerned that the bushmeat trade will eliminate these wild populations of animals and the invaluable information they could provide potentially provide that might help in the discovery of a cure for AIDS.

Opportunities: Better management and supervision of logging sites and long-term efforts to address urban demand for bushmeat are both needed to mitigate this critical threat to biodiversity. Improved enforcement can contribute to halting illegal bushmeat hunting, but it cannot stand alone, as governments do not generally have the level of resources necessary to combat widespread poaching. The opportunity exists to significantly involve local people in the process of controlling illegal wildlife off-take. By empowering local communities to take action on their own behalf, and assisting them to develop alternative income sources and enterprises, they can become partners in conservation and help to combat the illegal bushmeat problem. Alternative natural resource-based enterprises – both consumptive and non-consumptive (wildlife-based tourism, services, etc) can be explored and options developed. This activity could be coupled with agricultural initiatives to help provide alternative sources of protein.

8.3 Environmental Governance

8.3.1 Environmental Decision-making in Central Africa

Threats: Politicians and private sector entities within Central Africa are making far-reaching, often virtually irreversible decisions regarding resource exploitation and use in the region, without sound environmental or socio-economic information to guide them. Data related to development alternatives are seldom available in a form that facilitates the comparison of short- and long-term socioeconomic and ecological implications of various scenarios for resource use. Accurate information on forest extent and the location and rates of deforestation, combined with socioeconomic information and an understanding of the processes of land cover change, are crucial to develop an understanding of the future of Central African forests. Currently, little technical and institutional capacity is available in the region to develop such estimates.

Natural resource values are poorly understood, and the difficulty of assigning value to ecosystem functions, to “wilderness” or to other environmental attributes is very difficult. While natural resources accounting can be helpful where clear economic values of single or multiple resources can be established, it is much less effective under more diverse systems. There is need to improve data availability, reliability and analysis to promote a sound basis for decision-making and at the same time to build technical and institutional capability in the region.

Opportunities: Establishing national and regional systems for tracking rates and distribution of forest transformation is important as a tool for land-use planning, and will be a requirement for implementation of the Kyoto Protocol. Through CARPE, the foundation has been laid to vastly improve the monitoring of forests and environment within the region. Improved monitoring and analysis will mean that decision-makers will have access to a more complete picture of the implications of their actions and of the environmental consequences of their decisions, and decision-making will improve. Social, economic and ecological considerations will all be integrated into a more effective planning process.

8.3.2 Stakeholder involvement

Threats: Local stakeholders are often not involved in the planning or decision-making process. Various organizations, including conservation organizations, governments and private sector are making important decisions regarding resource use in central Africa, without their input. Civil society organizations are scarce. Because many forms of forest use tend to be incompatible with other uses, current actions may alter the landscape and preclude and undermine other possibilities. There is urgent need for priority setting, integrated forest management, and informed decision-making in central Africa at this time (CARPE Issue Brief #1,8,9,10).

Opportunities: The opportunity exists to develop processes that incorporate all stakeholders. Tough decisions and compromises will be need to made – and this can be accomplished through a participatory process. Civil society organizations should be encouraged and promoted at all levels – local NGOs, community-based organizations, and others. Local residents should not be bypassed as decisions are made, but should be represented as stakeholders in the process.

8.3.3 Natural Resources-Based Enterprises

Threats: There is evidence that, as non-timber forest products (NTFPs) increase in value, overharvesting occurs, leading to depletion of the resource. Also, unfair access restrictions may come into play. Measures must be taken to ensure sustainable harvest of and equitable access to non-timber forest products. Thus, it is important that the harvesting of these resources must be considered in forest management decisions, and integrated into, and considered part of, wider forest management plans. Nations in Central Africa do not have a process for recording the value of NTFPs being consumed and traded, thus their contribution to national economies may be significantly underestimated. Other natural resources based enterprises are not well documented

Opportunities: Wood and forest products, including non-timber forest products (NTFPs), play an important role in the livelihoods of central African households, providing a source of foods, medicines, spices, shelter, services, and income. NTFPs provide a critical dietary and economic safety net for poor families, and are often consumed by wealthier households as well. They may be especially important for women. With proper management plans and secure and equitable access to resource rights in place, alternative forest products can benefit communities and small enterprises both economically and socially. Adding value to the products locally and establishing new markets linkages can increase benefit to local people, as long as harvesting methods do not deplete the resources.

8.4 Environmental/Ecological Services

8.4.1 Water cycle

Threats: High impact logging and the loss of forest in central Africa can affect the water cycle at several levels. Locally, as forest cover decreases, water run-off will likely increase. This process is exacerbated by the presence of logging roads and trails, which often channel the run-off and then turn into ditches or gullies. Less water may percolate through the forest soil, leading to changes in health of remaining vegetation, and increased sedimentation and stream load. More soil will be deposited in rivers, and river temperatures may rise as riparian cover is removed. This in turn will affect freshwater species which are often dependent on temperature and oxygen levels. On a regional scale, rates of rainfall may be affected by the altered water cycle, and this will affect local communities and cities. Globally, the rain cycle and carbon cycle are affected by deforestation, leading to possible climate change and/or desertification.

Opportunities: The tropical forests of central Africa play an important role in recycling water and in moderating climate. Improved forest management, through zoning, riparian restrictions, reduced impact logging, attention to forest regeneration, etc., can provide economic gain, while at the same time institutionalizing good management practices. Assigning value to this critical ecosystem function can result in a more informed environmental decision-making process.

8.4.2 Carbon and Global Climate Change

Threats: If current trends continue, the amount of carbon dioxide in the atmosphere will double over the next century. Land use changes, especially the clearing of land for logging, ranching and agriculture, account for 15 to 20% of current carbon dioxide emissions. As vegetation is burned or decays, the carbon dioxide is released as a gas. Central African forests represent a vast reservoir of carbon, over half of all vegetative carbon on the continent. The deforestation rate of the Congo Basin is relatively low at present, but if rates continue to rise, a substantial amount of the carbon currently locked up in these forests could be released into the atmosphere in the form of CO₂, thus contributing significantly to global climate change..

Opportunities: Forest regeneration and growth may allow forests to take up and store (“sequester”) significant amounts of carbon, thus reducing the rate of increase of carbon dioxide in the atmosphere caused by fossil fuel burning. Carbon trading possibilities may offer new economic incentives to keep some central African forests intact, and should be explored.

The United Nations Framework Convention on Climate Change (UNFCCC) provides a legal and institutional framework for international action to address climate change that may be caused by greenhouse gas emissions from human activities, including the loss of tropical forests (USAID, 2002). It was adopted at the U.N. Conference on Environment and Development in 1992 by 153 nations, and ratified by the U.S. in 1993. The Kyoto Protocol, an agreement adopted in principle by the parties to the CCC in Kyoto, Japan, in 1997, identified emissions targets and timetables for industrialized nations and proposed market-based mechanisms for meeting those targets. To date, the Kyoto Protocol has been signed by

more than 80 countries and ratified by 30. Market mechanisms proposed in the Kyoto Protocol controlling greenhouse gas emissions include:

- *Joint Implementation*, which would allow countries with explicit emissions targets to obtain credit for project-based greenhouse gas emission reductions in other countries
- *International Emissions Trading*, which would allow countries with explicit emissions reduction targets to trade greenhouse gas allowances among themselves
- *The Clean Development Mechanism*, which would allow countries with explicit emissions targets to receive credit for certified emissions reductions from project activities undertaken in developing countries, and allow private and public sector entities worldwide to enter into cooperative projects to reduce emissions in the developing world

Such mechanisms, if adopted, might provide incentives and new sources of financial support for forest conservation in Central Africa.

8.5 Agriculture

Threat: Increasing populations require more food and resources. More than 80% of the population is involved in some type of agriculture. Traditional shifting agricultural practices, utilized by local people in central Africa, are being abandoned, possibly to the detriment of ecological health, and effective systems have not replaced them. The increasing urban population needs better access to agricultural products.

Opportunity: A better understanding of local conditions for agriculture and sustainable local agricultural practices can be gained through research and practice. Logging and agricultural practices are very closely linked in these areas, as farmers opportunistically cultivate logged areas. This relationship needs to be better understood and managed. Market linkages and producer to consumer chains need to be strengthened. Accessibility of domestic meat in local markets can help alleviate demand for bushmeat products.

8.6 Watersheds

Threats: The Congo Basin Watershed is second only to the Amazon in importance. Lack of a transboundary, watershed approach in the region, has led to uncoordinated planning and development within the basin, which can have environmental consequences. Upstream activities have often severe consequences for downstream uses. Coordinated planning is especially needed with regard to hydroelectric development, as the environmental impact can be significant.

Opportunities: The main river basin in central Africa is the Congo River Basin. Other important transboundary river systems include the Ntem (Cameroon, Gabon, Equatorial Guinea), the Sangha (CAR, Congo, Cameroon) the Ngoko (Cameroon, Congo), the Oubangui (DRC, RCA) and the Tanganyika (Burundi, DRC). By taking steps now to institute a watershed approach to development, and to developing effective systems of identifying, assessing and monitoring environmental impacts, the region can plan an integrated, transboundary approach. There has been interest expressed in the region to move forward with river basin planning – the opportunity exists for USAID to foster these regional developments and support such an initiative.

8.7 Urbanization

Threat: Increases in urban populations are straining systems around cities. Water supplies and sanitation are problematic. Pressure on natural resources has led to their depletion in areas adjacent to cities, as urban dwellers seek firewood, materials, fiber and fodder from surrounding areas. This has resulted in a widening circle of depleted land. Special threats associated with roads are addressed in Part 2.

Opportunity: Actions can be taken to increase understanding of urban needs and pressures, and to consider environmental issues while planning for alternatives.

8.8 Environmental Health and Poverty

Threats: Many of the environmental health problems related to poverty – including deficiencies in safe drinking water, food, clean air, and adequacy of shelter and sanitation – are also the underlying causes of many diseases. Diarrheal disease,

and in particular the high rate of infant and child mortality - is related to poor sanitation and inadequate access to clean water. Many vector-borne diseases are spread by contaminated water. The rapid urbanization of the central African countries puts more pressure on the already strained services in cities, and contributes to the sanitation problem - this means increased environmental risks for urban dwellers.

Opportunities: Environmental health issues throughout Central Africa are an urgent and enormous problem. Integrating environmental considerations in all activities, providing environmental and health education, and building capacity of institutions to plan, monitor and implement environmental activities, can help to start addressing these problems.

8.9 Mining

Mining operations, both legal and illegal, can result in severe environmental consequences and/or loss of biodiversity. The effects of mining of petroleum, diamonds, and other minerals on the forests and environment need to be better understood, mitigated and incorporated into landscape management plans. The environmental threats and opportunities in related to mining would in central Africa would require a separate study, and are not addressed in this document.

8.10 Coastal areas

The coastline shared by the central African countries involved in CARPE extends hundreds of kilometers. The coastal biodiversity within this area is considerable. Mangroves serve to stabilize the coastlines, harbor endemic fauna and flora and are extremely important sites for fish and mollusk breeding, and for birds. Sea turtles lay eggs along the central African shores. The environmental threats and opportunities in coastal areas would require a separate study, are not addressed in this document.

8.11 Summary of Important Environmental Threats and Opportunities in Central Africa

The analysis in this section identified just some of more important environmental threats in central Africa, and presented some of the associated opportunities. This information is presented to portray some of the issues facing the region and to provide an environmental snapshot of the region. They will not all necessarily be addressed by CARPE II.

- Improving poor forest management practices
- Curbing illegal logging
- Understanding agricultural systems suitable for this area, and addressing conversion of forest to agricultural land
- Monitoring and halting the loss of biodiversity
- Ensuring the adequacy, representativeness and sustainability of protected areas
- Taking measures to stop unsustainable harvest of bushmeat
- Improving environmental governance
- Providing a sound basis of environmental monitoring and capacity building to improve decision-making in Central Africa
- Exploring alternative economic options for local communities; developing sustainable natural resources-based enterprises and the systems that support them.
- Ensuring stakeholder involvement at all levels
- Addressing corruption and instituting transparent systems
- Understanding and incorporating the role and value of environmental/ecological services
- Exploring options for carbon trading
- Mitigating the effects of global climate change
- Maintaining healthy water cycles
- Adopting a river basin/watershed approach that is transboundary
- Considering the urbanization of the region and associated environmental needs for sanitation, clean water, access to resources, and market restrictions
- Improving agricultural methods suited to the region and strengthening the farm to market chains and linkages for sustainable agricultural and forest products
- Increasing cooperation among the central African countries in natural resources management ensure the protection of biodiversity and tropical forests in the region.

The first six years of CARPE have resulted in an expanded knowledge base and strengthened individual and institutional capacities in targeted areas within the Congo Basin region, and provided a strong foundation upon which to build a longer term effort to conserve biodiversity and mitigate deforestation of the tropical forests in this region. The activity will move from a research and information-sharing mode to an implementation mode in CARPE II, and will attempt to address many of the needs identified above. More effective and sustainable management of tropical forests will contribute to local livelihoods, promote healthy watersheds and help moderate changes in regional and global climate due to deforestation.

9.0 Environmental Review of the Proposed CARPE Strategic Plan

This section constitutes an environmental review of the proposed CARPE II strategy. It reviews the components of the strategy and explores possible environmental issues related to the illustrative activities. Finally, it makes recommendations to USAID regarding incorporating environmental considerations into CARPE programs.

CARPE will operate under a stand-alone, regional Strategic Plan in the environment sector of the USAID Africa Bureau, managed from USAID-Democratic Republic of Congo. It will support the broad goals and interests of the U.S. Government, USAID, and the Africa Bureau, and contribute to economic development and the alleviation of poverty throughout Central Africa. This will benefit not only the people and countries of the region, but also U.S. citizens and the global community as well. CARPE activities will help conserve forests and other biological resources that are essential for economic development in the region, and will contribute to slowing global climate change and conserving the species and genetic resources of the Congo Basin.

9.1 The Strategic Objective

The goal of CARPE II has transformed from a biodiversity goal in CARPE I to the following:

Sustainable natural resource management practiced throughout Central Africa in order to promote economic development and alleviate poverty for the benefit of people of the region and the global community.

The Strategic Plan consists of one strategic objective (SO):

SO: Local, national, and regional natural resource management capacity to reduce forest degradation and conserve biodiversity in Central Africa enhanced

Proposed SO-level Indicators include:

- Indicator 1: Landscapes with operational management plans
- Indicator 2: Regional institutions and cooperation on forest management
- Indicator 3: Area of forest loss/degradation
- Indicator 4: Total amount of bushmeat consumed

Environmental impacts: This SO, by design should have beneficial effects on the environment, since it will improve natural resources management, by operationalizing management plans in selected landscapes and strengthening regional institutions. Indicator three suggests that the area of forest loss/degradation would change for the better. Illegal or unsustainable trade in bushmeat, and the associated threat to biodiversity, would be addressed.

9.2 Intermediate Results, Illustrative Activities, and Environmental Impact

There are three proposed intermediate results (IRs):

IR 1: Sustainable Natural Resources Management Practices Applied

Proposed Indicators for IR 1 are:

- Indicator 1.1: Area under sustainable management within eleven focal landscapes
- Indicator 1.2: Area under sustainable management outside of eleven landscapes

Indicator 1.3: Livelihood benefits and/or incomes of communities generated by improved natural resources management

There are four sub IRs under IR 1:

Sub IR 1.1	Integrated land-use plans developed with participation of all stakeholders in eleven focal landscapes
Sub IR 1.2	Network of national parks and protected areas established and supported in focal landscapes
Sub IR 1.3	Local community management of forests, other NRs, and sustainable agriculture benefits local livelihoods
Sub IR 1.4	Logging concessions are managed for sustainability

Illustrative Activities under IR 1 include:

- Landscape-scale conservation planning for eleven focal landscapes of the Congo Basin Forest Partnership
- Landscape-scale conservation planning for the Virungas ecosystem
- Provide technical assistance and training to support the development of sustainable finance mechanisms for parks and protected areas
- Training for rangers and game scouts
- Support for development of community enterprises linked to landscape-scale conservation
- Promote forest-based livelihood opportunities that improve local quality of life and increase incomes from the sustainable use of ecological resources (e.g. fishing, bee-keeping, non-timber forest products, and forest camps and other conservation-based tourism enterprises)
- Agricultural intensification and more sustainable practices introduced in selected communities
- Reduced impact logging guidelines developed for Congo Basin forests and trainings and demonstrations provided
- Forest regeneration and forest growth/yield studies promoted and supported
- Access to logging concessions by bushmeat hunters monitored and controlled, laws enforced

IR 1 Environmental Impacts: Most of the activities envisioned under this IR appear to involve planning, technical assistance and training, research, enterprise development, and information exchange, with little or no impact on the environment. There are a few illustrative activities that may have some environmental consequences, depending on what type of programs are carried out, and how they are implemented. These might include, for example, some of the livelihood or enterprise development activities, i.e. forest camps, and possibly the forest regeneration activities. The agricultural intensification activity may need further environmental review, especially if it involves the expansion of agrochemical inputs and/or the introduction of genetically modified organisms. Activities that involve the harvest of wild resources need to be carefully monitored to ensure that harvest levels are sustainable. Any activities involving the cutting of tropical forests, would required several levels of analysis.

IR 2: Natural Resources Governance (institutions, policies) Strengthened

Proposed indicators for IR 2 are:

Indicator 2.1: Policies and laws governing protected areas, community-based natural resources management, and logging concessions

Indicator 2.2: Civil society is engaged in advocacy supporting sustainable natural resources management

Indicator 2.3: Institutional capacity of NGOs and target government agencies

Sub IR 2.1	Integrated national land use planning capacity developed
Sub IR 2.2	Protected areas, sustainable logging, and other sustainable NRM is supported by policies and laws
Sub IR 2.3	Civil society and NGO sector capacity to engage in advocacy and pressure governments to prevent illegal and/or unsustainable exploitation of resources is strengthened
Sub IR 2.4	CBNRM, decentralization, and local-level management is supported by policies and laws
Sub IR 2.5	Regional multi-national institutions and policy coordination increased
Sub IR 2.6	Human resources for improved natural resources governance are developed

Illustrative Activities under IR2 include:

- Support the preparation of national biodiversity conservation strategies that involve all stakeholders and integrate biodiversity conservation into national development planning
- Support for development of policies and enabling legislation for landscape-scale planning, zoning, and natural resources management
- Workshops, conferences, and technical trainings to improve forest planning capacity
- Training and political support to national initiatives to update forest inventories and zoning plans
- Support adoption and strengthening of legislation on protected areas
- Develop basic guidelines for logging concessionaires to ensure compliance with forest management legislation
- Promote and support increased transparency of logging operations within concessions
- Organize workshops and conferences on forest policy issues such as reduced impact logging, forest certification, forest wildlife management, and forest certification
- Support development of policies and laws on timber and non-timber forest products
- Promote the adoption of procurement and investment policies from G8 and other tropical timber consuming countries that support sustainable forest management in Central Africa
- Develop and implement a broad-based, multi-faceted environmental education and communication strategy to raise awareness of the value of forest and biodiversity conservation in the sustainable development of Central Africa
- Assist NGOs to obtain accurate environmental information and use it for raising public awareness and lobbying government agencies
- Analysis of model CBNRM legislation and dissemination of findings throughout the region in the form of policy briefs and other formats useable by decision-makers
- Mechanisms for institutional communication and coordination regarding transboundary natural resources management supported and strengthened in the eleven focal landscapes of the CBFP and other selected landscapes (e.g. Virungas)
- Support regional processes for communication, collaboration, and policy coordination (e.g. the Yaounde Process, CEFDHAC)
- Training in participatory natural resources mapping and monitoring involving local communities
- Develop and implement a series of short-term applied training modules for conservation professionals in Central Africa

IR 2 Environmental impact: Most of the envisioned activities under IR2 appear to involve policy development, training, planning, coordination, workshops, seminars, and similar activities with likely no direct effects on the natural or physical environment. Many of the proposed activities will further environmental awareness and oversight in the region, build local/regional capacity and/or improve the policy/legislative environmental framework in central Africa.

IR 3: Natural Resources Monitoring Institutionalized

Indicator 3.1: Area monitored for forest condition/degradation

Indicator 3.2: Number and types of resources monitored

Indicator 3.3: Information disseminated in accessible forms to NR decision makers and advocacy groups

Sub IR 3.1 Capacity to monitor at local, national, and regional levels is increased

Sub IR 3.2 Baseline information compiled/acquired

Sub IR 3.3 Monitoring network covering region is established

Sub IR 3.4 Reports on status and changes in resources produced in forms accessible to participants in natural resources governance for decision-making

Illustrative Activities under IR3 include:

- Ecological and socio-economic monitoring systems established in each of eleven focal landscapes of the Congo Basin Forest Partnership
- Ranger-based monitoring in protected areas (e.g. Virungas) expanded to include broader range of land uses
- Logging concessions mapped and database developed

- Monitoring of logging activity from ground and remote sensing increased
- Support the identification of, agreement on, and implementation of standard methodologies for forest, biodiversity, and socio-economic baseline surveys and long-term monitoring
- Large-scale monitoring of forest access, land use, and deforestation using Landsat and other remote sensing technologies
- Support the OSFAC regional satellite-based monitoring system for Central Africa
- GIS capacity enhanced to link information from local level to larger spatial scales
- Environmental information systems and materials supported that help provide citizens with information to participate in natural resources governance
- Technical training for forest managers on the use of remotely sensed information for forest planning and decision-making.

IR 3 Environmental Impact: The envisioned activities under IR 3 involve training and environmental monitoring, collection of data and information sharing – none of which are likely to have a direct environmental effect. The activities conceivably would promote environmental decision-making by improving regional capacity to monitor, analyze and report on natural resource use.

10. Recommendations to USAID/Kinshasa and CARPE

As noted earlier, the single Strategic Objective for CARPE II,

“Local, national, and regional natural resource management capacity to reduce forest degradation and conserve biodiversity in Central Africa enhanced”

is an environmental SO, and many of the illustrative activities are environmentally supportive.

The analysis in Section 9 shows that the CARPE strategic plan will address several of the key environmental threats listed in Section 8, and may involve some activities which will require further activity or program review.

It should be noted that each activity or program under CARPE II will be subject to review under the Agency Environmental Procedures (USAID 22 CFR PART 216), in accordance with the Foreign Assistance (FAA) of 1961, as amended, to ensure that environmental factors and values are integrated. An Initial Environmental Examination (IEE) will be conducted to review the reasonably foreseeable effects of a proposed action on the environment, and this will form the basis for a “threshold decision” as to whether further environmental review – such as an Environmental Assessment or Environmental Impact Statement will be required.

The environmental procedures and special regulations apply not only to CARPE activities, but also to all Global Development Activities, and other USAID activities, carried out under the CARPE banner.

The CARPE evaluation noted that the challenge for CARPE, as it evolves to the next phase, will be to develop an integrated strategy for biodiversity and forest conservation in the Congo Basin, rather than merely being a funding mechanism for the disparate activities being carried out by diverse partner organizations (EDG 2001). Under CARPE II, the integration of activities is especially important. There are many pieces and players involved in CARPE – including the Congo Basin Forestry Partnership, the proposed Global Development Alliance activities, and the myriad of activities to be undertaken by individual implementing partners – so there is a real need to ensure that the players are collaborating and that environmental concerns are addressed at all levels.

Because of the transboundary nature of the natural resources (forests, wildlife, river basins, water bodies, coast) it is important that USAID/CARPE take a transboundary approach to planning and implementation. A watershed approach is recommended. Mechanisms to improve cooperation among the countries in managing and monitoring natural resources should be promoted.

The protected areas aspect of CARPE is still threatened by the lack of a viable strategy for political and economic sustainability. Activities under CARPE should address this challenge and look beyond the strategy period to ensure sustainable systems.

The proposed landscape approach will help to ensure that adjacent land uses are more compatible, and will promote community development and the establishment of sustainable natural-resources based enterprises. However, a word of caution. First of all, a landscape is not created just by drawing a circle on a map. It must recognize viable systems and natural boundaries, e.g. watersheds. Secondly, many of the processes leading to achieving the strategic objective – including stakeholder involvement, community participation, harmonization of policies, planning and integrated management are **very** time consuming processes that must unfold at a realistic pace to be sustainable. These processes will require capacity building at all levels, and institutionalization. So it is important not to attempt to accelerate the process beyond the absorptive capacities of the institutions and systems involved. The length of the list of proposed activities, although meant to be “illustrative”, is alarmingly long. The eight year time frame for this strategic plan, although relatively long by USAID standards, is still marginal for these types of activities. When planning for individual activities, it will be necessary to be very selective and realistic about what results can be achieved in the timeframe.

As noted in the evaluation, the sustainable forest use aspect of CARPE is threatened by lack of a clearly viable strategy for ecological sustainability, and for moving Congo Basin countries beyond forest and resource “mining.” CARPE/USAID must pay more attention to both the environmental and ecological services provided by forests/biodiversity as well as the economic alternatives – commercial, small scale and community-based.

The work carried out to date by CARPE has provided considerable baseline data to provide a clear foundation to show change as a result of future CARPE activities. This information should be assembled and included as part of new activity descriptions, then used as a basis to document changes and improvements. Each activity should make reference to the environmental implications of its actions and how they will be addressed.

CARPE should collaborate with USAID country Missions, CARPE partners and other donors on environmental issues, particularly:

- World Bank activities, including support for National Environmental Action Plans (NEAPs) in Congo Basin countries;
- UNDP and UNEP funding to assist Congo Basin countries with National Biodiversity Conservation Strategies and Action Plans, which are required of parties to the Convention on Biological Diversity; and,
- Various activities of the European Commission such as ECOFAC (including its collaboration with IUCN) and TREES. (BYER 2000)

PART 2: TROPICAL FORESTS AND BIODIVERSITY: FAA 118/119 ANALYSIS

1. Executive Summary

See text of the Executive Summary included in Part 1 of this annex.

2. Background

This section provides a Biodiversity and Tropical Forests Analysis, in fulfillment of the Sections 118 and 119 of the Foreign Assistance Act (FAA) Guidelines for US government agencies working abroad. This is prepared as Part 2 of the Environmental Analysis carried out for the new CARPE strategy and conducted using the same approach – primarily utilizing a desk study and literature review combined with meetings/conversations with individual partners in Washington, DC. Some of the information covered in this report has already been covered in the main Environmental Analysis Report in Part 1, and those relevant sections are referred to here. The two sections complement each other.

3. Tropical Forests in the Central African Region

3.1 Tropical Forest Overview

An overview of the tropical forests in central Africa is presented in Section 4.4.2 of Part 1. **Annex 1** shows characteristics of central African forests, by country.

3.2 Threats to Tropical Forests in Central Africa

Threats to tropical forests are addressed in Part 1 of this report (Part 1, Section 8.1). This section further explores some of the threats specific to tropical forests in central Africa. The following section (Section 3.3) presents an analysis of actions necessary to achieve conservation and sustainable management of tropical forests.

3.2.1 Deforestation

The world's tropical forests have been reduced to about 55 percent of their original cover, with an estimated 100,000 square kilometers being lost each year. The Congo Basin contains about 20% of the world's moist tropical forests. Deforestation rates are relatively low in the Congo Basin compared to other areas of the tropics, on average 0.5 percent annually compared to 1 percent annually in coastal West Africa (FAO 1992). However, in terms of actual area cleared annually, the forest loss in the Congo Basin is alarming. Based on the 1992 FAO report, the loss of tropical forest in Central Africa between 1980 and 1990 was on the order of 114,000 square kilometers

Deforestation in central Africa is primarily the result of unsustainable agricultural and logging practices, although fuelwood and charcoal consumption around densely populated areas are contributing factors. While most of the forests of central Africa have, so far, experienced lower rates of clearing than other tropical forests, they represent a huge economic resource certain to be utilized. In comparison with West Africa, which has already lost much of its forest area, central Africa presents an opportunity to avoid the social, economic, and environmental costs of forest loss and degradation.

Clearing for agricultural is a predominant cause of deforestation in Central Africa. Increasing population pressures are undermining the sustainability of centuries-old systems of shifting cultivation. At the same time, migrants or settlers from outside the forest regions are introducing cultivation practices that are unsuited to local conditions. Faced with diminishing returns, many farmers choose simply to relocate to areas that have been opened up by logging or infrastructure development. The result is an agricultural frontier that advances at the expense of the receding forest. Urban fuelwood requirements also put pressure on nearby forests. In the larger metropolitan areas, such as Kinshasa, Brazzaville and Yaounde, the pressure has resulted in the creation of "urban halos" of deforested land stretching over 150 kilometers from city centers.

Rates of forest loss in Central Africa are rising and, given the current demographic and economic dynamics of the region, are likely to continue to increase. The root causes of deforestation include annual population growth rates of 2.4 to 3.5 percent, insufficient financial, technical, and institutional capacity, inappropriate macroeconomic policies, economic

stagnation and the need to earn foreign exchange. These result in increasing pressures on land and forest resources, in order to meet the food, energy, and building material needs of the countries of Central Africa.

Numerous and often divergent estimates of tropical deforestation for Central Africa have been published in the last decade. Partly the divergence is due to the varying definitions used to characterize what is and is not forest, the data sets used to derive the estimates, and the methods used to summarize the data. For example, FAO uses both a direct sampling approach and an indirect modeling strategy of population growth and national forest inventory data over a 10 year period, while the NASA Landsat Pathfinder approach to forest change estimation uses wall-to-wall mapping over a 16 year time period.

The University of Maryland/NASA Landsat Pathfinder Dense Humid Forest Project uses Landsat satellite images to assess the rates and extent of deforestation in Central Africa. Forest change is a dynamic process that reflects how people respond to changes in socioeconomic conditions and opportunities. Consequently, forest loss and reforestation varies across the region and from one time period to the next. Annual rates of deforestation for the period 1984-98 varied from 0.1-0.7% with forest loss within a Landsat image ranging from 9 to 116 km² per year. Reforestation rates are even lower and do not compensate for forest losses.

The highest rates of deforestation are not necessarily associated with the highest population densities. The largest estimated annual forest loss was located in one of the most densely forested areas (the Equateur Province of DRC) where the population density is relatively low (6-21 inhabitants per km² in 1990), population is predominantly rural (95%), and the annual population growth rate was about 3.4% for the 1980-94 period. Though most of this area is assigned to timber concessions only one is concession is presently active, thus logging is an unlikely cause of the observed forest loss. In Equateur Province the rates and extent of deforestation are almost two times higher than those found north of Bumba, even though population density is two times lower. This may indicate errors within the population dataset or suggest that deforestation is fueled primarily by other factors, such as economic activity.

High rates of deforestation also occur at the forest-savanna interfaces where forest occupies a small area and savannas dominate the landscape. Though the absolute area of deforestation is small and the contribution of these areas to global warming limited, forest clearing is resulting in the rapid disappearance of riparian forests that constitute the last bastions of forest-dependent plant and animal species.

3.2.2 Commercial Logging

The value and diversity of timber species makes the Congo Basin a prime source for large-scale logging in Africa. Over thirty species of high value timber are being harvested from Congo Basin forests, at clearly unsustainable rates in some areas. There are few incentives to do otherwise given current policies. Commercial logging poses a serious threat to the forest resource base given the unsustainable and inefficient approaches used.

The World Resources Institute, a CARPE partner, estimates that about 50% of Central Africa's forests are under logging leases. That means that the commercial logging sector clearly must be involved and cooperate in order to bring about forest conservation and sustainable use at the landscape scale. While logging companies generally harvest only the most valuable trees, the extraction and transportation of those trees causes significant collateral damage to the forests. The selective harvesting of these species over time, without providing for regeneration, will drastically reduce the prevalence of these species and alter the forest composition. Furthermore, the logging roads that are constructed open up formerly inaccessible areas to people who clear the land to establish farms and hunt wildlife.

Corruption associated with timber harvest is rife in central Africa. Even if corruption can be prevented, some well-intentioned attempts to regulate and maximize economic advantage from timber concessions may be backfiring to cause ecological damage. Where concession processes have been established, emphasis has been placed on selecting tenders for timber concessions based on price alone, rather than factoring in the reliability, track record and post logging services of bidding companies. In some cases companies that would likely invest in rehabilitating forest roads and replanting are passed over in favor of companies that may pay more, but neglect to perform post-logging services.

II. Country Specific Information

1. Republic Of Congo:

- a. Timber harvested, % of exports, USD value of exports
- 21.5 mi hectares of forests of which 12.7 mi has are classified as productive forests suitable for exploitation
 - Southern Region: main species: Okoume, Limba,
 - Northern Region: main species: Sapelli, Sipo,
 - Main species representing 60-65% of exports: Okoume, Sapelli,
 - Remaining exports: Ayous, Bahia, Sipo, Doussie, Iroko, Wenge.
 - *Export Value of forest products: US \$ 106,593,000 (FAO)*
 - Timber exports represent the country's second major source of export revenues after oil
- b. Logging Companies
- Five main European companies operate in Congo-Brazzaville.
 - 12 new logging licences have been granted- in February 2000 logging contracts were signed with Lebanese and Malaysian companies, signing 15year renewable contracts.
 - Forestry sector provides 10% of formal employment
- c. Importing countries
- Main destination of timber exports go to the European Union, with France, Germany, Italy, Portugal and Spain being the main importers. Outside the EU, Japan is the main importer.
- d. *Forest Products Production for 2000 (Source: FAO 2000)*

	Import		Export		Production	Consumption	
	Units	Quantity	\$US (x1000)	Quantity	\$US (x1000)	Quantity	Quantity
Sawnwood	Cum	0	0	69600	28000	74000	4400
Sawnwood (C)	Cum	0	0	0	0	0	0
Sawnwood (NC)	Cum	0	0	69600	28000	74000	4400
Roundwood	Cum	0	0	757000	76000	1799140	1042140
Industrial Roundwood	Cum	0	0	757000	76000	646000	-111000

Total Area Harvested (FAO)

Period	Area under timber harvesting scheme				Area by type of timber harvesting scheme					Other areas of timber removal
	Total area at end of period	Area actually harvested per year	Harvesting intensity, low	Harvesting intensity, high	Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified	
	years	ha	ha/year	m ³ /ha	m ³ /ha	Ha	ha	ha	ha	
96 - 00	n.a.	382,880	est.		0	139,000	683,800	n.a.	n.appl.	

2. Democratic Republic of Congo

- a. Timber harvested, USD value of exports:
- DRC contains 12.5% of worlds remaining tropical forests
 - 1.1 mi km2 of forest area
 - Main Species being exported: Sapelli, Sipo, Tola, Iroko
 - Other species being exported: Afrormosia, Tima and Wenge

- Export Value of forest products for 2000: US \$11,165,000 (FAO)
- b. Logging Companies
 - It is believed 8 logging companies are present based on field visit assessments in 1999. (Forest Monitor).
- c. Importing countries
 - Portugal, Germany, France
- d. Forest Products Production, 1992-2000 (FAO)

	Units x1000	1992	1993	1994	1995	1996	1997	1998	1999	2000
Roundwood	Cum	52936	57010	60055	62128	63688	64878	66050	67367	68630
Industrial Roundwood	Cum	3134	3211	3309	3369	3545	3578	3644	3727	3727
Sawnwood	Cum	105	105	75	65	85	90	80	80	80
Sawnwood (NC)	Cum	105	105	75	65	85	90	80	80	80

Total Area Harvested (FAO)

Period	Area under timber harvesting scheme				Area by type of timber harvesting scheme				
	Total area at end of period	Area actually harvested per year	Harvesting intensity, low	Harvesting intensity, high	Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified
years	ha	ha/year	m ³ /ha	m ³ /ha	Ha	ha	ha	ha	ha
96 – 00	n.a.	166,286	est.		n.a.	n.a.	n.a.	n.a.	n.appl.

3. **Gabon**

- a. Timber Harvested, % of exports, USD value of exports
 - Main Species being exported (80% of exports): Okoume, Ozigo
 - Gabon holds 75% of world reserves in Okoume
 - Government monopoly on Okoume and Ozigo. Concession holders can only sell these species to Societe National des Bois du Gabon (SNBG) at controlled prices.
 - There are 60 species being exploited in Gabon but the bulk of production rests with Okoume and Ozigo.
 - Export Value of forest products: US \$ 332,598,000 (FAO)
 - Forestry sector second largest source of foreign exchange after oil.
 - Forestry sector accounts for 15% of exports
 - Forests cover 220,000 sq. km of Gabon's total area of 268,000 sq km
 - Ministry of Water and Forests documented sustainable annual harvest is 2 million cubic meters. In 1996, total exports amounted to 2.3 million cubic meters and in 1997, 2.7 million cubic meters.
- b. Logging Companies
 - 5 companies control more than one third of total concessions
 - In 1997, it was estimated that 6,000 people were employed by the forestry sector
 - 6 European-owned companies are significant concession holders, and Asian companies have established an increasing presence, primarily two Malaysian companies
- c. Importing countries
 - Exports mainly to Asia -- 42% to China, 8% to Hong Kong
 - 17% to France and 1% goes to Portugal and Italy

d. Forest Products Production for 2000 (FAO)

	Units	Import		Export		Production	Consumption
		Quantity	\$US (x1000)	Quantity	\$US (x1000)	Quantity	Quantity
Sawnwood	Cum	0	0	79000	9388	68000	-11000
Sawnwood (C)	Cum	0	0	0	0	0	0
Sawnwood (NC)	Cum	0	0	79000	9388	68000	-11000
Roundwood	Cum	0	0	2584000	285751	3099409	515409
Industrial Roundwood	Cum	0	0	2584000	285751	2584000	0

Total Area Harvested (FAO)

Period	Area under timber harvesting scheme				Area by type of timber harvesting scheme				
	Total area at end of period	Area actually harvested per year	Harvesting intensity, low	Harvesting intensity, high	Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified
years	ha	ha/year	m ³ /ha	m ³ /ha	ha	ha	ha	ha	ha
96 - 00	n.a.	377,530	6.8	12.9	1,468,400	n.a.	n.a.	n.a.	n.appl.

4. Cameroon

- a. Timber Harvested, % of exports, USD value of exports
- Main Species being exported: Sapelli, Azobe, Utile, Gedu nohor, Padouk)
 - Cameroon has over 300 timber species with 50 being logged and marketed on a regular basis.
 - Industrial wood is the 4th largest wood export.
 - Export Value of forest products: US \$350,600,000 (FAO)
 - Forest area is estimated at 225,000 sq kilometers of which 175,000 sq km have been identified by the Cameroonian government as productive forests.
 - Estimated that as much as 50% of logging comes from illegal sources.
- b. Logging companies
- In 1999, 84 individuals and timber companies had valid documented logging rights, employing over 34,000 people.
- c. Importing countries
- France, Italy, Germany, Spain, Belgium, and the Netherlands.
 - Importing % (1996-97): Europe, 47%, Asia, 51%, Africa, 2%

d. Forest Products Production for 2000 (Source: FAO 2000)

	Import	Export	Production	Consumption
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	Units	Quantity	\$US (x1000)	Quantity	\$US (x1000)	Quantity	Quantity
Sawnwood	Cum	0	0	540000	222000	650000	110000
Sawnwood (C)	Cum	0	0	0	0	0	0
Sawnwood (NC)	Cum	0	0	540000	222000	650000	110000
Roundwood	Cum	0	0	575000	97000	12071347	11496347
Industrial Roundwood	Cum	0	0	575000	97000	2960000	2385000

Total Area Harvested: (FAO)

Period	Timber harvesting schemes at end of period	Area harvested	Harvesting intensity, low	Harvesting intensity, high	Area by type of timber harvesting scheme				
					Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified
years	Ha	ha/year	m ³ /ha	m ³ /ha	ha	ha	ha	ha	ha
96 - 00	4,054,000	337,544	5.7	8.2	0	0	334,060	3,719,940	n.appl

5. Equatorial Guinea

- a. Timber Harvested, USD value of forest exports
 - Main Species being exported (65% of exports): Okoume
 - Other Species being exported: Ilomba, Tali, Azobe, Fuma, Padouk, Andouk
 - Export Value of forest products: US \$ 97,018,000 (FAO)
 - Forestry second largest economic sector after oil.
- b. Logging Companies
 - 80 logging companies operating in the forestry sector in 1997
 - 1.5 mi hectares allocated to industrial logging concessions
- c. Importing countries
 - Until 1992, 85% of log production went to Europe (Spain taking 43%).
 - 54% of timber products went to Asian markets, especially Japan and China in 1994.
 - 99% of processed products are exported to Europe
 - Spain alone imports 85% of Equatorial Guinea's processed wood products
- d. Forest Products Production for 2000 (FAO)

	Units x1000	1992	1993	1994	1995	1996	1997	1998	1999	2000
Roundwood	Cum	613	638	714	811	811	811	811	811	811
Industrial Roundwood	Cum	166	191	267	364	364	364	364	364	364
Wood Fuel	Cum	447	447	447	447	447	447	447	447	447
Sawnwood	Cum	8	7	4	4	4	4	4	4	4
Sawnwood (NC)	Cum	8	7	4	4	4	4	4	4	4

Total Area harvested (FAO)

Period	Area under timber harvesting scheme	Area by type of timber harvesting scheme	Other
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	Total area at end of period	Area actually harvested per year	Harvesting intensity, low	Harvesting intensity, high	Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified	areas of timber removal
years	ha	ha/year	m ³ /ha	m ³ /ha	ha	ha	ha	ha	ha	ha
91 - 95	419,910	33,195	5.8	7.9	0	130,700	219,210	70,000	n.appl.	

6. Central African Republic

- a. Timber harvested
 - Main exporting species: Sapelli, Ayous, Sipo
 - Sources vary on export/import statistics (can be an indicator for heavy illegal trade).
 - Export Value of forest products for 2000: US \$ 56,103,000 (FAO)
 - Timber accounts for 16% of CAR's export earnings (even though one of the smallest by volume).
 - Forest area: 5 mi hectares, Forest allocated to logging concessions: 3.2 mi hectares
- b. Logging companies
 - 13 companies operating in the CAR at the end of 1999
 - Forestry sector is top private employer in country with 3500 people employed.
- c. Importing countries
 - Major wood exports go to the EU, but sources vary
- d. Forest Products Production for 2000 (FAO)

		Import		Export		Production	Consumption	
		Units	Quantity	\$US (x1000)	Quantity	\$US (x1000)	Quantity	Quantity
Sawnwood	Cum		0	0	66000	16342	102000	36000
Sawnwood (C)	Cum		0	0	0	0	0	0
Sawnwood (NC)	Cum		0	0	66000	16342	102000	36000
Roundwood	Cum		0	0	250000	39684	3011000	2761000
Industrial Roundwood	Cum		0	0	250000	39684	1011000	761000

2. Total Area harvested (FAO)

Period	Area under timber harvesting scheme				Area by type of timber harvesting scheme					Other areas of timber removal
	Total area at end of period	Area actually harvested per year	Harvesting intensity, low	Harvesting intensity, high	Very Long term scheme	Long term scheme	Medium term scheme	Short term scheme	Unspecified	
years	ha	ha/year	m ³ /ha	m ³ /ha	ha	Ha	ha	ha	ha	ha
91 - 95	1,349,300	39,893	2.2	8.3	969,600	279,700	100,000	0	n.appl.	

In summary, commercial logging is an important economic activity for most countries, but the benefits are not well distributed, long term decisions are being made without the involvement of stakeholders, and the methods being used are high impact and often not sustainable.

3.2.3 Roads

Improved road networks are central to economic development in the Congo Basin. Improved roads contribute to increased opportunities for trade, by improving access to markets, and they can vastly increase access of rural communities to goods and services. However, environmental risks are associated with road building, and there is need for careful planning to maximize benefits to local populations and to conserve the natural resources upon which they depend.

Forests in central Africa are among the most intact in the tropics and more than 2/3 are considered to be “low access” forest regions – roadless areas that are 1,000 square km or more in size. A recent pilot study using satellite images in Cameroon, however, sheds new light on that figure, and suggests that much of the forest mapped as “low-access” and falling within concessions has, in fact, been opened up by logging roads (Minnemeyer et al, 2002). In Cameroon, as much as three-quarters of this low-access forest is at risk from hunters, who travel up new logging roads to harvest previously inaccessible wildlife.

Around 40% of Central Africa's forests are within low-access forest regions not yet allocated for logging. With the exception of the Democratic Republic of Congo, most low access forest regions in Central African countries are within active or allocated logging concessions.

Parks and reserves protect about 8% of the low access forest areas in the region. Within the Central African Republic and Equatorial Guinea, two countries with the least amount of low access forest remaining in the region, less than one percent of low access forests are protected

3.2.4 Management issues and risks

Forests in the region are important as:

- a source of food, medicines, materials and shelter for over 20 million people
- commercial economic value
- habitat for a unique array of flora and fauna, including endangered species
- a sink and source of carbon dioxide, the most important gas implicated in global warming,
- watershed functions
- spiritual/cultural values

Deforestation and mismanagement of tropical forests poses a threat to biodiversity and to forest conservation efforts. The development of meaningful national and regional forest or landscape management plans is hindered by the lack of good data. The rates of deforestation rates in central Africa are poorly documented, and vary considerably by location and across the region. Generally rates are about 0.6% per year. Reforestation rates are very low, and do not compensate for forest losses.

Some species within the forests of the Congo Basin are at special risk, including:

- high-value species of timber trees (e.g., *Entandophragma* spp. *Aucoumea klaineana*, *Terminalia superba*, *Milletia laurentia*, *Pericopsis eleata*, *Triplochiton scleroxylon*)
- species that provide non-wood forest products (e.g., *Gnetum* spp., rattans (*Laccosperma secundiflorum*, *Eremospatha macrocarpa*), *Prunus africana*); and
- species sensitive to overharvest for "bushmeat" (Wilkie, et al. 1992)
- Threatened and endangered forest species, including the mountain gorilla

Management is compounded by problems among which are limited information about resources, lack of means, product markets, poverty of the rural communities, as well as maladapted management techniques. Although most of the new policies have management towards sustainability as their aim, they focus mainly on providing domestic requirements in energy, food and shelter. Recently, the Convention on Biological Diversity has strengthened these aims. The conservation and management laws and regulations have been revised to include innovations such as conserving biodiversity, involving local communities through participatory approaches, recognition of indigenous knowledge, sensitization and education, integrated management, regional cooperation and the creation of more protected areas. This new vision moves from purely protectionist aims to management for sustainability.

The involvement of all levels of society and stakeholders in forest management is critical to effective management. This goes also for design and implementation. The increase in knowledge flow within the Central African region will allow all levels of society (local communities, NGOs, or civil society, government, etc) to participate and share information as a tool in management.

Carbon sequestration, an important function of tropical forests, may become marketable in the future, as carbon credit systems are explored.

3.3 Analysis of Actions necessary to Achieve Conservation and Sustainable Management of Tropical Forests in the Congo Basin

This section discusses and proposes actions necessary to conserve and sustainably manage tropical forests in central Africa.

- *Strengthen policy and institutions:* Political and institutional factors play a critical part in the management of forest resources. Coherent policies and strong institutions are vital to ensure that people and their organizations behave sustainably. Existing legislation and incentives do not provide adequate frameworks for sustainability.
- *Assist parties to honor legal/management commitments:* It has been noted that forest degradation would be significantly slowed around the world if governments and industry were to actually implement commitments they have made – locally, nationally and internationally -- to manage and protect their forests (Global Forest Watch 2002). While many countries have taken great strides in enacting laws to protect their forests, in many places regulations are simply not enforced.
- *Combat illegal logging:* Measures to combat illegal logging include improved monitoring, improving governance and accountability and involving communities. The International Tropical Timber Organization (ITTO) offers the following recommendations:
 1. Develop and implement effective monitoring systems that include the use of log-tracking, remote sensing and field investigations
 2. Provide capacity building and training to communities, non-government groups and law enforcement agencies in various monitoring approaches and tools
 3. Develop regional data sharing programs to help identify problem areas that need to be targeted for enforcement
 4. Support and undertake research on the nature, extent, causes and impacts of illegal logging and on potential solutions.
- *Promote community participation:* Community participation, and the involvement of civil society are key pieces to achieving conservation and sustainable management of tropical forests, which have often been overlooked. This process must be assisted at all levels. Unless rural people are able to develop new alternatives for economic development, they will likely continue to exploit the resources at hand – often unsustainably. Activities to secure area for protected areas must be coupled with assisting communities outside those protected areas to develop alternative livelihoods. For natural resources based activities, systems of community resources monitoring can be instituted. USAID experience in other parts of Africa has shown that communities will manage and protect the resources when they receive benefits from doing so. Community forestry, wildlife- and foresty-based tourism, processing of non-timber forest products, and other options can be explored.
- *Land Use Planning:* Land use plans, and/or appropriate land use policy development can provide for a more integrated land use for forests and adjacent lands. Communities should be involved in this process as stakeholders.
- *Improved monitoring and data analysis:* Improved data and capacity are necessary to improve understanding of economic and ecological alternatives with regard to forest management and utilization. Steps must be taken to improve decision-making, based on sound data, and in the absence of corruption. Forest economics should take into consideration the full value of the resource – including the value of the ecological services of the forests.

- *Reform forest concession systems and management:* The system for awarding forest concessions should be reviewed and reformed if necessary. Incentives for good forest management should be rewarded, and good performance rewarded. In Central Africa, Global Forest Watch found logging concessions already cover more than half of the world's second largest tropical rainforest. Initial data indicated that most of these lack even a basic plan for managing the forests. Plans to assign land use and guide management practices need to be developed.
- *Halt forest corruption:* Steps must be taken to halt corruption in the forestry sector, and help to curb its associated environmental effects.
- *Adopt a transboundary watershed approach to planning and management:* : In order to protect and sustainably manage tropical forests in the Congo Basin, it is important to recognize the Congo River Basin as a unique watershed that requires integrated management cross-sectorally and at many levels. Establishing a functioning transboundary water basin commission and improving regional cooperation, harmonizing policies and laws and promoting integrated management are all important to the watershed approach.

4. Biodiversity in the Central African Region

4.1 Biodiversity Overview

An overview of biodiversity threats and opportunities in central Africa is presented in Part 1 of this Environmental Analysis (Section 8.2). The following section (4.2) further expands on some of the threats, and section 4.3 presents an analysis of actions necessary to conserve biodiversity in the Congo Basin.

4.2 Threats To Biodiversity in the Central African Region

4.2.1 Increasing human presence in remote areas

The tropical forests in the Congo Basin are threatened. The human population is increasing at 2-3% per year, and this translates into accelerated transformation of the forest. The demand for agricultural land is also increasing, with more than 90% of households in Central Africa involved in agriculture. Extensive conversion of the forest to non-forest land cover results in changes in soil fertility and rainfall patterns that can affect human livelihoods and ecosystem productivity, not only regionally in the basin, but also throughout the continent through altered water cycles and climate change, and even globally.

It is important to take a wider view of planning and zoning within the region, to develop meaningful zoning and management plans for the area, to identify key areas of biodiversity that require protection and to mitigate environmental impacts.

Simultaneously, it is critical to explore livelihood alternatives for rural populations, and empower them to develop new enterprises and activities that incorporate sustainable natural resources management. The rate of increase of rural populations is lower than that of urban areas, but the actual numbers of people in rural areas is increasing.

4.2.2 Habitat loss

Forest habitat loss poses a major threat to many species that depend on intact forest biomes, and can result in loss of biodiversity. Indigenous species of large mammals – including forest elephants, gorillas, mandrills and leopard – may require very extensive areas of undisturbed forest. In central Africa, road construction to support the logging industry is a main culprit in precipitating a chain of events that often lead to environmental degradation and loss of biodiversity. Transport routes have direct ecological effects, which include the impeded movement of animal species, biomass loss, microclimate changes and edge effects that occur along roads. Secondly, they open access to human activity, including bushmeat harvesting, timber harvesting, wood and NTFP collection, and agricultural conversion.

The scenario often goes something like this: Logging companies construct roads or low grade tracks in order to selectively log previously inaccessible areas. Hunters and poachers soon follow and proceed to hunt wildlife at unrestricted and often unsustainable rates. Landless immigrants, as well as families of loggers, are attracted by the new access routes, and settle along the sides of main roads, converting them to agricultural use.

There is concern that roadbuilding and the subsequent scenario depicted here is detrimental to the biodiversity of the region. Thus it is imperative that integrated planning, accompanied by environmental impact assessment, is carried out to understand and mitigate the effects of road-building.

4.2.3 Hunting

A recent study conducted by Fa et. Al. (2002) estimates that 4.9 million tons of wild animal meat is harvested annually in the Congo Basin. These numbers are four times higher than those calculated in earlier studies, and suggest that the threat to wildlife and biodiversity in Central Africa is more severe than previously thought. On a basin-wide level, they conclude that 60% of the mammal taxa in the Congo Basin were hunted unsustainably. While there is reason for caution in relying on these new results, their conclusions underscore the gravity of the situation with regard to wildlife in central Africa.

“ the current bushmeat hunting scenario foretells catastrophic results for African forest wildlife. The urgent need for research into ways of mitigating the problem of defaunation...cannot be overemphasized”

John E. Fa, et al 2002

4.3 Analysis of Actions necessary to Conserve Biodiversity in the Congo Basin

The actions necessary to conserve biodiversity in the Congo are explored and addressed throughout this document. Key actions include:

- Take steps to further identify and protect key areas of biodiversity. Take steps to integrate protected areas with other surrounding land uses.
- Sustainable use of forests and wildlife outside protected areas: The landscape presents a mosaic of protected areas, buffer zones just outside protected areas and more intensively utilized agricultural or residential areas. Within protected areas, management plans will describe management interventions, while outside protected areas, there is need to develop plans for sustainable management and utilization of forest and other resources and to provide economic development opportunities.
- Curb illegal bushmeat hunting – through both protection and incentives: The bushmeat crisis is difficult to solve and must be addressed through many facets. These may include protection either by areas/zones or through hunting restriction of certain species. Law enforcement, hunting disincentives (especially for commercial hunters), market initiatives, and community involvement are all crucial to the process. At the community level, bushmeat is a food source as well as a source of income. Other food sources and/or economic activities must be developed if the intent is to reduce the bushmeat enterprise – otherwise communities will not participate.
- Develop economically viable and sustainable land and resource use and management plans
- Introduce and build capacity in reduced impact logging
- Develop systems to address the threats posed by logging roads
- Expand community options: Involve communities – and empower them to manage and benefit from community resources.
- Strengthen institutions and public-private-community linkages.
- Improve laws, policies and governance

5. Current Conservation Efforts in the Central African Region

A number of conservation activities are taking place in the Central African region. As noted in various documents (EDG, Byers 1999, 2000), the conservation approach of the various actors ranges from one of resource utilization for economic development, with varying attempts at incorporating sustainability considerations, to one of total protection of resources with no utilization allowed (Table 7). CARPE partners have also employed various conservation approaches.

Table 7: Conservation Approaches in the Congo Basin (adapted from B. Byers 2000, p.6)

Donor or Organization	Approach To Conservation		Biological/Geographic Approach			Main category of Activity
	Sustainable Use – Biodiversity as source of biotic resources	Intrinsic Value – Biodiversity for its own sake	Protected Area	Production Forest	Landscape Approach	
APFT	X		X			Research
ATO/ OAB	X			X		Policy, Commodity
CARPE	X	X	X			Catalytic, Analysis, Info
CEFDHAC						Policy
CGIAR	X					Research, Info
CIFOR	X				X	Research, Info, Analysis
CIRAD Forêt	X			X		Research, Info
DFID	X		X			Implementation, Training, Info
ECOFAC	X	X	X			Implementation, Research, Info
FAO	X				X	Info, Training
FSC	X			X		Info, Analysis, Policy
GTZ	X	X	X			Info, Implementation
ICRAF	X				X	Research, Info
ITTO	X			X		Policy, Commodity
IUCN	X	X	X			Policy, Implementation
MacArthur Foundation	X				X	Catalytic, Training, Info
ODI	X				X	Research, Analysis, Info
UNDP GEF	X	X	X			Policy, Info, Implementation,
UNEP GEF	?					Policy
UN Foundation	?		X			Implementation
US Forest Service	X				X	Info, Training
World Bank	X		X	X		Implementation, Policy, Info
WCMC		X	X			Info, Analysis
WCS		X	X			Implementation, Research
World Bank	X		X			Implementation, Training, Info, Policy
WRI	X	X			X	Analysis, Info, Policy
WWF		X	X			Implementation, Info, Training
WWF CARPO		X	X			Implementation, Policy Training, Info
WWF-World Bank Forest Alliance	X	X	X	X		Catalytic, Info, Policy

6. How CARPE II will Address the Tropical Forestry and Biodiversity Needs Identified

6.1 Implementation of Tropical Forestry and Biodiversity Provisions through CARPE I

CARPE started in 1995 and has been managed in Washington, by the Global Bureau and the Africa Bureau/Sustainable Development (AFR/SD) under Strategic Objective 17, and implemented through cooperative agreements with NGOs and through interagency agreements. The goal of CARPE is to reduce the rate of deforestation of the tropical forests in the Congo Basin, in order to conserve the biological diversity contained in those forests and, in the long-run, to avert potentially negative changes in global and regional climate. The activity started out with four Central African countries, and later expanded to nine (Box 1).

CARPE I focussed on gathering knowledge of Central Africa's forests and biodiversity, and building human and institutional capacity.

6.2 The proposed CARPE II

The proposed CARPE II addresses many of the actions necessary to conserve biodiversity and tropical forests in central Africa. Many of the objectives of the CARPE II program are similar to the goals and requirements of Sections 118, 119 and of the amended Foreign Assistance Act. USAID is required by that act to consider and implement the protection of tropical forests and biological diversity in the design of assistance programs and projects. This section outlines how CARPE will address the specific concerns of Section 118 and 119.

The proposed strategy period for CARPE II will be eight years, corresponding to fiscal years 2003 through 2010. Following the completion of phase II of CARPE in 2010, it is anticipated that the 20 year program will be completed through a final, four year period of "handing over," when CARPE activities and programs will be turned over to Central African institutions.

The next phase of CARPE will focus on implementation, and will apply the knowledge gained from CARPE I towards creating sustainable natural resources systems. In December 2001, the USAID Administrator directed that CARPE move its operations from Washington to the field. Kinshasa, in the Democratic of Congo (USAID/DRC), was approved in May 2002 as the most appropriate "base" for CARPE II, and actions are currently underway to facilitate that move, anticipated in early 2003. The program will retain its regional focus and will be housed at USAID Kinshasa as a regional program, under a new Africa Bureau regional Strategic Plan (SO). It is envisioned that CARPE II will be a discreet regional "unit" based in, and administratively managed by, the USAID/Kinshasa Mission.

The proposed goal of the new CARPE II strategic plan is

"Sustainable natural resource management practiced throughout Central Africa in order to promote economic development and alleviate poverty for the benefit of people of the region and the global community"

The proposed Strategic Objective (SO) is:

- "Local, national, and regional natural resource management capacity to reduce forest degradation and conserve biodiversity in Central Africa enhanced"

Draft indicators for achievement of this SO have been put forward for review. These include

- 1) Landscapes with operational management plans,
- 2) Regional institutions and cooperation on forest management,
- 3) Area of forest loss/degradation, and
- 4) Total amount of bushmeat consumed.

Proposed intermediate results (IRs) through which this objective will be achieved are listed below. It should be noted that these are draft IRs and could change considerably before the strategic plan is approved:

- Proposed IR 1: Sustainable Natural Resources Management Practices Applied

- Proposed IR 2: Natural Resources Governance (institutions, policies, laws) Strengthened
- Proposed IR 3: Natural Resources Monitoring Institutionalized

IR1: comments on Tropical forestry and biodiversity

Activities to achieve IR 1 will support the development of integrated land-use plans, with stakeholder participation, in eleven focal landscapes, support to the establishment of national parks in focal landscapes, by providing technical assistance and training, and support to community-based natural resources management, involving the development of natural resources based enterprises. Additionally, activities will seek to foster more sustainable management of logging concessions. All of these proposed actions will support the protection of tropical forests and biodiversity. In particular, these activities are in line with FAA 118 c (10)C “to the fullest extent feasible, conserve biodiversity in forest areas by helping developing countries identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas”

Training programs and institutional strengthening activities that promote forest conservation, and sustainable timber harvesting will meet significant requirements of Section 118. These activities will enable CARPE countries to implement the forest assessment, environmental analysis and other management actions that Sections 119 promote. Training of rangers and game scouts, training in reduced impact logging methods, and training for community-level capacity building are some of the training envisioned.

The CBNRM and natural resources-based enterprises (NRBE) capacity building that is envisioned meets the priorities as noted under Sec 118 c (3)

“ to the fullest extent feasible, support projects and activities which (A) offer employment and income alternatives to those who would otherwise cause destruction and loss of forests, and (B) which help developing countries identify and implement alternatives to colonizing forested areas”

IR2 comments on Tropical forestry and biodiversity

Under IR 2 natural resources governance will be strengthened through support to improve policies and laws governing protected areas, community-based natural resources management, and logging concessions. It will also support civil society groups, including advocacy groups, NGOs and targeted government agencies. These activities directly support FAA 118c (4) “ to the fullest extent feasible, support training programs, educational efforts and the establishment or strengthening of institutions which increase the capacity of developing countries to formulate forest policies, engage in relevant land use planning, and otherwise improve the management of their forests”

IR3 comments on Tropical forestry and biodiversity

Proposed IR 3 concerns the institutionalization of natural resources monitoring, and seeks to increase capacity at local national and regional levels, establish a regional monitoring network, and to make analysis readily available to decision-makers and advocacy groups.

Illustrative Activities include establishing ecological and socioeconomic monitoring systems established in each of eleven focal landscapes of the Congo Basin Forest Partnership, ranger-based monitoring in protected areas (e.g. Virungas), and a number of other monitoring, mapping, and information sharing activities. These activities are directly in line with 118 c (9) “ to the fullest extent feasible, support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss or degradation....”

GDA Activities

The Global Development Activities related to CARPE, if they involve any logging activities, must be carefully designed with FAA Section 118 in mind. In particular, it should be noted that FAA 118 denies assistance for “ the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner which minimizes forest destruction and that the proposed activity will produce positive economic benefits and sustainable forest management systems”

7. Concluding Remarks

CARPE II is an environmental program, and tropical forestry and biodiversity conservation concerns are fully addressed by the activity. CARPE II should incorporate the key recommendations for improvement of the program, as noted in the evaluation (EDG 2001). Special care should be taken to institutionalize all systems – monitoring, management, decision-making, etc and to engage local NGOs, CBOs and civil society organizations to ensure long term conservation of biodiversity and tropical forests. CARPE II must focus more on people and institutions, not just natural systems.

The landscape approach proposed in CARPE 2 addresses specific landscapes, but does not address the area as a holistic watershed, the Congo River Basin. USAID and CARPE should keep abreast of current developments related to integrated water basin planning, and assist this cooperation where possible.

CARPE I laid a good foundation for understanding the ecological situation in the Congo Basin at least in targeted areas. The implementation under CARPE II will likely be more challenging. Partners are encouraged not to overextend and to recognize the limitations and identify concrete programs, geographical areas and targeted activities that can realistically be accomplished within specified time frames.

In summary, it should be reiterated that the forests of the Congo Basin, and their associated biodiversity, are prime targets for economic exploitation, and the challenge will be to obtain economic returns at the lowest environmental cost. USAID/CARPE will have to meet the difficult challenge of balancing conservation with development – one cannot occur without the other. Both sides of the equation must be addressed and strengthened. Both protection and utilization of resources must be planned for, and local (community-based as well as local government), national and regional institutions must be strengthened to carry out important functions related to conservation of biological diversity and protection of tropical forests.

ANNEX 1

Figures and Maps

ANNEX 2

Tropical Forests in Central Africa

An overview of the tropical forests in the Congo Basin, by country, is presented below:

Burundi forests

- Moderately forested: 12 percent forest cover and additional 38 percent of other wooded land
- Original forest vegetation: closed sub-montane and montane rainforest along the Nile-Congo watershed, running the length of the country, and savannah woodland along the SE border and in the areas surrounding Lake Tanganyika.
- Much of the forest and woodland cleared or degraded to promote agriculture
- Soil erosion is a significant problem
- Remaining closed forest mainly in the north, in and around Kibila National Park, or in the south in the Buriri forest.
- Common species: *Entandrophragma excelsum*, *Polyscias* spp. and *Macaranga* spp.
- Significant areas of bamboo forest in the north.
- Savannah forests in the south are mainly "miombo" woodland, *Brachystegia-Julbernardia* association, with *Acacia* grasslands in the drier west.
- 10 protected areas, including 3 national parks.
- Around 12 percent of the country's forests are in protected areas.

Cameroon forests

- Well-forested with more than 40 percent forest cover and additional 30 percent of other wooded land.
- Mainly closed tropical broadleaved rainforests with three predominant types: lowland evergreen; lowland semi-deciduous; and montane.
- Important commercial species in Cameroon's forests include Ayous (*Triplochiton scleroxylon*), Sapelli (*Entandrophragma cylindricum*) and Azobe (*Lophira slata*).
- Closed forests are concentrated in the south and along the coast.
- Mangroves in the Gulf of Guinea
- Acacia woodlands in the north.
- Modest area of plantation forest
- Approximately 6 percent of Cameroon's forests are formally protected in a network of protected areas
- Plans to protect other significant forests, including the Lac Lobeke forest, as part of a trans-national protected zone.

Central African Republic forests

- Heavily forested with 48 percent forest cover, and 26 percent other wooded land.
- Closed forest mainly semi-deciduous lowland tropical forest, extending across southern half of the country.
- Common commercial species include *Entandrophragma cylindricum*, *Triplochiton scleroxylon* and *Terminalia superba*.
- Much of north is open savannah forest, becoming gradually sparser further north, and eventually Sahelian in the north-west corner.
- Dominant species in savannah zones: *Burkea africana*, *Isobertina* spp. and *Anogeissus leiocarpus*.
- Protected areas include 4 national parks and around 10 other reserves.
- Dzanga-Sangha Reserve in the south-west corner has significant areas of virgin rainforest.
- More than 20 percent of the country's forests are in protected areas.

Congo forests

- Heavily forested: 57 percent forest cover and an additional 16 percent other wooded land.
- Northern half of country and around the Chaillu massif in the southeast blanketed by dense equatorial forest
- Northeast predominantly swamp forests draining into the Congo River, with broadleaved species including *Guibourtia demeusei*.
- Semi-deciduous forests characterized by species such as *Terminalia superba* and *Triplochiton scleroxylon*.
- Southwest forests with *Aukoumea klaineana*.

- Savannah, characterized by *Hymenocardia acida*, occupies much of the centre and south of the country.
- 2 national parks and around 10 other reserves
- Almost 5 percent of the Congo's forests inside these protected areas.

Democratic Republic of the Congo forests

- Heavily forested with 49 percent forest cover and an additional 23 percent of other wooded land.
- Largest forest area of any African country; contains almost half of Africa's tropical moist forests.
- Broad range of forest types
- Enormous diversity of tree species.
- Moist evergreen and semi-deciduous forests occupy much of the central and western regions.
- Large areas of edaphic forest in the northwest around the Congo River and its tributaries.
- Areas of sub-montane and montane forest occupy the eastern highlands and the slopes of the Mitumba mountains.
- Most important commercial timbers are *Etandrophragma cylindricum*, *Khaya ivorensis* and *Pericopsis elata*.
- Miombo woodlands (*Brachystegia-Julbernardia-Isoberlinia* association) in the south, along the Zambian border.
- Modest network of protected areas with 7 national parks
- 6 percent of the country's forests protected

Equatorial Guinea forests

- Well forested: 63 percent forest cover and 32 percent of other wooded land
- The forests of Rio Muni, the mainland, are mainly moist tropical lowland and upland forests, characterized by the presence of Ocume (*Aucoumea klaineana*), with other common species including *Pycnanthus angolensis* and *Coelocaryon klainei*.
- Mangroves in many coastal areas
- Narrow strip of savannah runs parallel to the coast.
- Bioko Island: moist lowland and montane forests with *Chlorophora excelsa* (common commercial species)
- Modest network of protected areas, including the 1400 km² Monte Alen National Park

Gabon forests

- Heavily forested with around 70 percent forest cover.
- Eastern and central forests are mainly lowland moist evergreen rainforests with enormous diversity of species including commercial timbers such as okoume (*Aucoumea klaineana*) and ozouga (*Sacoglottis gabonensis*).
- Okoume, Gabon's most important commercial species, has been selectively logged in a significant proportion of the country's forests.
- Northeast highlands comprise semi-deciduous "elfin woodland" unique to Gabon.
- Savannah forests in the southern corners of the country
- Large areas of mangroves extend inland from the coast, along waterways
- Three 3 national parks
- Around 4 percent of Gabon's forests are inside protected areas.

Rwanda forests

- Around 10 percent forest cover and an additional 28 percent other wooded land.
- Closed forests are generally submontane or montane, concentrated in the west of the country, in the mountains bordering Lake Kivu.
- Most of the original sub-montane forest was cleared, with only small patches of primary forest left in inaccessible areas; mainly broadleaved moist semi-deciduous forests, characterized by species such as *Sideroxylon adolfi-friederici* and *Etandrophragma excelsum*.
- Above 2000 meters the predominant forest type is broadleaved moist evergreen, with characteristic species including *Syzygium parvifolium*, *Xymalos monospora* and *Psychotria* spp..
- Extensive areas of savannah woodland in the east, which can be distinguished into two types: Acacia woodland (notably *A. sieberiana*); and low shrubland comprising, particularly, *Croton dichogamus* and *Euphorbia dawei*.
- Significant areas of plantation forest with around half being of Eucalyptus species.
- Modest system of protected areas with two national parks.
- Protected areas encompass 50 percent of Rwanda's forests

Sao Tome and Principe forests

- Two volcanic islands in the Gulf of Guinea.
- Moist forests cover nearly three-quarters of the total land area
- Three forest zones: low altitude moist closed forest, moist sub-montane evergreen forest, and closed cloud forest.
- Low altitude forest has been extensively cleared and is now primarily savannah type vegetation in the north and replaced by palms and coconuts in the south.
- The montane forest is largely intact and comprises tropical high forest.
- Cloud forest contains short trees with open crowns.
- No formally protected areas.

ANNEX 3

IUCN CATEGORIES OF PROTECTED AREAS

The World Conservation Union (IUCN) -, defines a protected area as:

"an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means."

IUCN categorizes protected areas by management objective and has identified six distinct categories of protected areas:

I. Strict Nature Reserve/Wilderness Area: protected area managed mainly for science of wilderness protection

II. National Park: protected area managed mainly for ecosystem protection and recreation

III. Natural Monument: protected area managed mainly for conservation of specific natural features

IV. Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

V. Protected Landscape/Seascape: protected area managed mainly for landscape/seascape protection and recreation.

VI. Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems.

These are described in detail in the publication Guidelines for Protected Area Management Categories

Annex 4

WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

Key Outcomes of the World Summit on Sustainable Development August 26-Sept 4, 2002 Johannesburg, South Africa

- The Summit reaffirmed sustainable development as a central element of the international agenda and gave new impetus to global action to fight poverty and protect the environment.
- The understanding of sustainable development was broadened and strengthened as a result of the Summit, particularly the important linkages between poverty, the environment and the use of natural resources.
- Governments agreed to and reaffirmed a wide range of concrete commitments and targets for action to achieve more effective implementation of sustainable development objectives.
- Energy and sanitation issues were critical elements of the negotiations and outcomes to a greater degree than in previous international meetings on sustainable development.
- Support for the establishment of a world solidarity fund for the eradication of poverty was a positive step forward.
- Africa and NEPAD were identified for special attention and support by the international community to better focus efforts to address the development needs of Africa.
- The views of civil society were given prominence at the Summit in recognition of the key role of civil society in implementing the outcomes and in promoting partnership initiatives. Over 8,000 civil society participants attended the Summit, reinforced by parallel events which included major groups, such as, NGOs, women, indigenous people, youth, farmers, trade unions, business leaders, the scientific and technological community and local authorities as well as Chief Justices from various countries.
- The concept of partnerships between governments, business and civil society was given a large boost by the Summit and the Plan of Implementation. Over 220 partnerships (with \$235 million in resources) were identified in advance of the Summit and around 60 partnerships were announced during the Summit by a variety of countries.

ANNEX 5

CONGO BASIN FORESTRY PARTNERSHIP

US Department of State August 23, 2002

The United States, with public and private partners, will announce a Congo Basin Forest Partnership.

The goal of this Partnership is to promote economic development, poverty alleviation, improved governance, and natural resource conservation through support for a network of national parks and protected areas, well-managed forestry concessions, and assistance to communities who depend upon the conservation of the outstanding forest and wildlife resources of eleven key landscapes in six Central African countries (Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Republic of Congo).

The Congo Basin Partnership will:

- Provide people sustainable means of livelihood through well-managed forestry concessions, sustainable agriculture, and integrated ecotourism programs.
- Improve forest and natural resource governance through community-based management, combating illegal logging, and enforcing anti-poaching laws.
- Help countries develop a network of effectively managed national parks, protected areas, and corridors.

Resources

- The United States proposes to invest up to \$53 million over four years (2002-2005), including a \$36 million increase for Central African Regional Program for the Environment (CARPE).
- International environmental organizations have indicated a desire to significantly increase the resources that they are already devoting to forest conservation and wildlife protection in the Congo Basin.
- Additional funding will come from G8 nations, the EU, and the private sector.

Partners

The governments of the Congo Basin: Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Republic of Congo; The governments of the United States, the United Kingdom, Japan, Germany, France, and South Africa; European Commission; NGOs, including Conservation International, Wildlife Conservation Society, World Wildlife Fund, World Resources Institute, Forest Trends, and the Society of American Foresters; U.S. and international business, including the American Forest and Paper Association and the Association Technique Internationale des Bois Tropicaux-ATIBT; international organizations, including the World Bank and the International Tropical Timber Organization.

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